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SUSTAINABLE SOURCING: MARKETS FOR CERTIFIED CHINESE MEDICINAL AND AROMATIC PLANTS



**SUSTAINABLE SOURCING:
MARKETS FOR CERTIFIED CHINESE
MEDICINAL AND AROMATIC PLANTS**

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This study on the market potential of sustainably wild-collected botanical ingredients originating from the People's Republic of China with fair and organic certifications provides an overview of current export trade in both wild-collected and cultivated botanical, algal and fungal ingredients from China, market segments such as the fair trade and organic sectors, and the market trends for certified ingredients. It also investigates which international standards would be the most appropriate and applicable to the special case of China in consideration of its biodiversity conservation efforts in traditional wild collection communities and regions, and includes bibliographical references (pp. 139–140).

Descriptors: **Medicinal Plants, Spices, Certification, Organic Products, Fair Trade, China, Market Research**

English

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Acronyms

AQSIQ	State Administration of Quality, Supervision, Inspection and Quarantine
CCC	Standard Classification of Commodities of Chinese Taipei
CCCCS	Commodity Classification for China Customs Statistics
CIF	Cost Insurance Freight; means the price includes cost, freight and insurance
CITES	Convention on International Trade in Endangered Species of Wild Flora & Fauna
CN	Combined Nomenclature; EU coding system for classifying products for customs and statistical purposes
CNCA	National Certification and Accreditation Administration of the People's Republic of China
CNY	Chinese yuan (renminbi)
COMTRADE	United Nations Commodity Trade Statistics Database
CQM	China Quality Mark Certification Group
ECBP	EU-China Biodiversity Programme
EDQM	European Directorate for the Quality of Medicines (EU)
EFSA	European Food Safety Authority
EGP MAPs	EU-China Environmental Governance Programme Project on Harvesting of Wild Medicinal and Aromatic Plants
EMA	European Medicines Agency
ESR	Equitable, Solidaire, Responsible Standard (EcoCert France)
FDA	Food and Drug Administration (United States)
FiBL	Research Institute of Organic Agriculture (Switzerland)
FFL	Fair for Life Standard
FLO	Fairtrade International
FOB	Free on Board – means the price only includes the cost of the item. Seller arranges for transport of the goods, preparing goods for shipment and loading the goods onto the vessel
FTUSA	Fair Trade USA
FWF	FairWild Foundation
FWS	FairWild Standard
GACP	Good Agriculture and Collection Practice
GAP	Good agriculture practice
GATS	Global Agricultural Trade System database
GMO	Genetically modified organism
GMP	Good manufacturing practice
HS Code	Harmonized system tariff code
HTSUS	Harmonized Tariff Schedule of the United States
IFOAM	International Federation of Organic Agriculture Movements
IMO	Institute for Marketecology
ITC	International Trade Centre
ITC	Indian Trade Classification (Department of Commerce, Government of India)
MAPs	Medicinal and aromatic plants
NESOI	Not Elsewhere Specified or Included
NGO	Non-governmental organization
NOP	National Organic Program (regulated by USDA)
OSP	Organic system plan
PPRC	Pharmacopoeia of the People's Republic of China

PRC	People's Republic of China
SFDA	State Food and Drug Administration (PRC)
SPO	Small producer organization
TCM	Traditional Chinese Medicine
TEP	ITC Trade and Environment Programme
UNCTAD	United Nations Conference on Trade and Development
UNFSS	United Nations Forum on Sustainability Standards
USDA	United States Department of Agriculture
USP	United States Pharmacopeia
VSS	Voluntary Sustainability Standards
WCO	World Customs Organization
WFCMS	World Federation of Chinese Medicine Societies
WTO	World Trade Organization
WWF	World Wide Fund for Nature

Executive summary

Medicinal and aromatic plants, with their intrinsic biodiversity value, are an important raw material for healthcare, cosmetic and food sectors. For the rural poor, they provide seasonal cash income.

This study reviews the market for sustainably wild-collected botanical ingredients originating from China – that is, ingredients with fair and organic certifications for the global market. Trade analysis results provide an overview of current export trade in both wild-collected and cultivated botanical, algal and fungal ingredients from China, as well as the market segments and trends for certified ingredients.

By raising awareness about certified markets for wild-harvested plants ingredients sourced from China, as well as best practices in sustainable wild harvesting of plants, this report contributes to implementation of the Convention of Biological Diversity's Aichi Targets 4 and 14; the sustainable use objective of the Global Strategy for Plant Conservation; and the Convention of International Trade on Wild Species of Flora and Fauna.

The research focuses on sustainability standards certified by independent control bodies in the global medicinal and aromatic plant value chain for organic wild (ecological sustainability), fair trade (economic and social sustainability) and FairWild (ecological, economic and social sustainability). It included identification of certified operators (producers), registered processors and traders; and finished product brandholders (licensees), and data analysis available through accredited control bodies as well as national and international export trade databases.

Fast-growing sustainable trade markets

'Fair'-certified natural ingredients and natural products are fast-growing globally. Fair Trade USA reported a 23% increase in the quantity of fair trade certified herbs and spices imported by the United States in 2013 compared to 2012. Globally, Fairtrade International (FLO) estimated a 182% growth rate for fair trade certified herbs, herbal teas and spices in 2013 compared to 2012.

Markets for organic and fair trade products continue to grow (for the past 30 years and for the past 15 years, respectively). The market for ingredients and products with dual certification, i.e. 'organic and fair', continues to grow. Consumers may be coming to expect that certain products should be labelled with multiple certifications including 'fair', 'non-GMO' and 'organic', among other assurances of value chain ethics and sustainability.

China: a leader in medicinal and aromatic plants

China is the top producer, user and exporter of medicinal and aromatic plants and other natural ingredients of botanical, algal and/or fungal origin. Over 70% of the species – and 30% of the volume – of such medicine comes from wild medicinal plants. Overharvesting is placing these resources and thus millions of collectors under threat.

While China is active in the certified organic medicinal and aromatic plants subsector, it has only limited exports in the fair trade or FairWild medicinal and aromatic plant subsectors. The study thus investigates which international standards would be most appropriate to China, taking into account biodiversity conservation efforts in traditional wild collection communities and regions.

Sustainable opportunities

China, as the world's largest producer, user and exporter of medicinal and aromatic plant ingredients, has an opportunity to participate in a fast-growing sector of sustainable products for the global market.

Besides the market opportunities that result from value-addition using international sustainability standards, this activity contributes to improved resource management and biodiversity conservation.

While some 'fair' certified articles are being exported (mainly with 'IBD EcoSocial' or 'FLO Fairtrade' certification), inspection and certification mechanisms need strengthening. No China-based control bodies are authorized to carry out such inspections or issue certificates to producers or traders.

Key findings

China has 15.6% of the world's medicinal and aromatic plant exports

China's 2013 export volume and value for the articles included in this study (both wild-collected and cultivated) exceeded 1.3 billion kg, with a reported customs value of more than US\$ 5 billion. This represented about 15.6% of total world exports in terms of reported customs value.

Global fair trade is at least 11.4% of global organic market value

Detailed data were not available to assess the size of the Chinese and/or global certified organic and fair trade ingredient subsectors, including the exclusively wild collection portions.

The organic and fair trade markets (all product types) provided a useful data point for estimation. The retail value of the global organic market was an estimated US\$ 63.8 billion in 2012. The global fair trade market was an estimated EUR 5.5 billion in 2013, an increase of 15% over the previous year. (This is based on FLO data only; FLO is just one of many fair trade initiatives, and so the actual value is higher.) The fair trade product market is at least 11% of the size of the certified organic product market.

Global trends: 'fair + organic'

Data for organic and fair markets are not mutually exclusive. Ingredients and products often carry both certifications, and there is evidence that the market is increasingly demanding dually certified organic and fair products.

Some countries assign specific import tariff codes for selected certified organic ingredients and medicinal and aromatic plant products. For example, the United States now tracks imports of certified organic ginger rhizome and tea leaf separately from conventional or non-certified materials.

For example, 4,359,000 kg of certified organic tea leaf imported into the United States in 2013, 730,206 kg (16.8%) was also certified fair trade (Fair Trade USA data). Another 135,435 kg of fair trade tea leaf were conventional (non-organic). Though both ginger rhizome and tea leaf are cultivated, and China is a major global supplier of both, the proportionality of 'fair' and 'organic' quantities imported is instructive. It may be applicable to wild-collected medicinal and aromatic plants with sustainability certifications such as 'organic wild' and 'FairWild'.

- The top 'additional' sustainability certification claim for certified 'fair' products is certified 'organic';
- While 100% of the fair trade-certified 'herbs, herbal teas and spices' (and 84% of the tea leaf) reported through the Fair Trade USA system are also certified organic, only 56% of the FLO fair trade certified medicinal and aromatic plants are also certified organic;
- A total of 50 countries (about 26% of all countries) have certified operations producing 'fair' certified MAP ingredients for the export market;
- At least 232 distinct operations globally produce 'fair' certified medicinal and aromatic plant ingredients;
- The top 10 countries (number of certified operations) accounted for 64.2% of the total of 232 operations;
- There are 355 'fair' certified medicinal and aromatic plant articles, roughly 10% of the number in international trade;
- At least 50 wild collected articles carry some form of 'fair' certification in the global market;
- The top 10 countries (number of 'fair' certified articles produced) accounted for 68.7% of the total of 355 articles;

- India ranks as number 1 in both categories, with 48 out of 232 'fair' medicinal and aromatic plant producers globally (20.7% of total) and 35 out of 355 'fair' articles (9.9% of total);
- Three countries ranked in the top five in two categories (certified 'fair' operations and certified 'fair' articles): India, Sri Lanka and Madagascar.

Chinese trends: solid market potential

- Of the 129 certified organic Chinese MAP operations identified in this study, 88 have mainly cultivated (C) plants, 27 have mainly wild-collected (W) ones, 11 have wild-collected and some cultivated (W/C) ones, and 3 have cultivated and some wild-collected (C/W) plants.
- Between 5% and 15% of China's total medicinal and aromatic plant exports with organic certification may have additional market opportunities if further value-added with dual certification of organic + fair.
- Main export destinations for China's medicinal and aromatic plants (in HS1211): Hong Kong SAR, Japan, Republic of Korea, Viet Nam and Malaysia. For Chinese herbal extracts (in HS1302), they are: United States, Japan, Republic of Korea, Germany and India. For certified organic products (all origins and types) are the United States, Germany, France, Canada and the United Kingdom.
- Chinese plants with highest export market potential if certified organic and fair: Barbary wolfberry (*Lycium barbarum*) fruit, Chinese angelica (*Angelica sinensis*) root, Chinese liquorice (*Glycyrrhiza uralensis*) root and rhizome, Chinese rhubarb (*Rheum palmatum*, *R. tanguticum* and/or *R. officinale*), Chinese skullcap (*Scutellaria baicalensis*) root, cordyceps (*Cordyceps sinensis*) fungus, eleuthero (*Eleutherococcus senticosus*) root and rhizome, Mongolian dandelion (*Taraxacum mongolicum*) herb and root, schisandra (*Schisandra chinensis* or *S. sphenanthera*), and seabuckthorn (*Hippophaë rhamnoides*) fruit.



Fruit of wild-harvested Southern Schisandra (*Schisandra sphenanthera*) collected in Pingwu County, Sichuan Province (© A. Timoshyna / TRAFFIC)

Using this report

The information in this study can support recognition and implementation of sustainable wild collection standards and certification schemes in China.

Chapter 1 describes methodology, including categories of Chinese ingredients, customs and trade classifications, categories defined by Chinese organic certification bodies, and 'fair' standards (e.g. fair trade and FairWild) considered in the analysis.

Chapter 2 compares total export values and volumes for China with total global exports for 2013 for medicinal and aromatic plants.

Chapter 3 provides relevant standards information for the FairWild Foundation, FairWild Standard, the State Food and Drug Administration, Good Agricultural Practice for Traditional Chinese Medicinal Materials, and the United States Department of Agriculture National Organic Program Wild-crop Harvesting Practice Standard.

Chapter 4 provides standards information relevant to sustainable farming operations such as biodynamic, organic and various 'fair trade' schemes. In some cases, some of these standards are also being applied to wild collection operations, especially where an operation is engaged in both farming and wild collection.

Chapter 5 describes the global market for Chinese ingredients with sustainability certifications (organic and fair). It quantifies producers and exporters of 'fair' certified medicinal and aromatic plants globally (by country and by botanical species) and estimates the portion of certified organic global medicinal and aromatic plant trade that is also 'fair' certified.

Chapter 6 lists typical requirements for exporters of bulk ingredients, with information on labelling, marking, packaging and documentation for certified organic and certified 'fair' ingredients.

Chapter 7 summarizes Chinese MAPs with highest export market potential if value-added with both 'organic' and 'fair' certifications based on interviews with industry insiders and on trade-analysis data.

Chapter 8 outlines relevant trade promotion events for exporters and suppliers of 'organic' and 'fair' botanical ingredients and products. It lists companies processing and trading medicinal and aromatic plants with 'fair' certifications and those marketing finished herbal products with 'organic' and 'fair' certification labelling.

Chapter 9 provides recommendations.

Introduction

1. Background



Fruit of wild raspberries (*Rubus* spp.) in Zhejiang province (© Zhang Ke / TRAFFIC)

China, the origin of and biggest centre of production for many medicinal and aromatic plant (MAP) materials used in traditional Chinese medicine (TCM), produces a wide variety of plant-based herbal medicines and ingredients that are consumed within China and worldwide. However, wild TCM plant resources in China, as in other parts of the world, are under threat. Populations are declining across the country, in large part because of overharvesting to meet high demand from the TCM and herbal products industry. Market-based tools for the sustainability of wild-sourcing in China are still developing.

This report was developed in collaboration with TRAFFIC, which in partnership with World Federation of Chinese Medicine Societies (WFCMS), Wecome Medicine Industries and WWF China Programme Office implements the project called 'Engaging the private sector in sustainable management of medicinal plants – the multiplier effect', which is funded by the European Union (EU) – China Environmental Governance Programme. This project aims to establish green industry supply chains among TCM stakeholders, linking private sector manufacturers and traders in Hunan and Zhejiang provinces to producers in order to achieve sustainable management of medicinal plants, benefit livelihoods and contribute to improved environmental governance. The project supports selected TCM manufacturers and traders in Zhejiang and Hunan provinces to pursue available

production standards and certification schemes that are suitable for their business.

This report will help companies gain greater access to markets for their sustainable wild-collected products, both within China and internationally. It will further contribute to the dialogue and policy recommendations to the relevant Chinese government agencies in supporting the recognition and uptake of international voluntary standards and certification projects that verify sustainable wild-harvesting and fair trading practices, including the FairWild Standard, currently not available in China.

2. Information about the databases used

A number of useful databases were used to prepare this report, including national and international import-export trade databases, tariff classification and customs rulings databases, and certified operation databases of inspection and certification organizations and of governmental agencies. The inclusion criteria and definitions of types of natural ingredients that were considered to fall within the general category 'medicinal and aromatic plants' (MAPs) are provided in detail in chapter 1.

Import-export trade databases

- **China Trade Data (CTD)**, a leading supplier of China's trade intelligence – tariff and tax information and trade (import and export) statistics data for mainland China. It does not include trade data for Hong Kong SAR, Macau SAR or Chinese Taipei.
- **International Trade Centre (ITC) Trade Map**: Trade Map covers 220 countries and territories and 5,300 products of the Harmonized System. The monthly, quarterly and yearly trade flows are available from the most aggregated level to the tariff-line level.
- Chinese Taipei, Customs Administration, Ministry of Finance, **Trade Statistics**.
- United Nations Commodity Trade Statistics Database (**Comtrade**).

- United States Department of Agriculture (USDA) Foreign Agricultural Service (FAS) **Global Agricultural Trade System (GATS)** Online database.

HS code and tariff databases

- European Commission, Taxation and Customs Union. **European Binding Tariff Information (EBTI)**; the European Community created the BTI system as a tool to assist economic operators to obtain the correct tariff classification for goods they intend to import or export.
- Chinese Taipei, Ministry of Finance, Directorate General of Customs, **Tariff Database Search System**.
- United States Customs and Border Protection, **Customs Rulings Online Search System (CROSS)**.
- United States International Trade Commission (ITC), **Harmonized Tariff Schedule of the United States (HTSUS)**.
- World Customs Organization (WCO), **Harmonized System Commodity Database**.

Certified ingredients and operations databases

- Demeter biodynamic certified operations database
- EcoCert ESR list of certified operations
- Fair Trade Sustainability Alliance (FairTSA) producer directory
- Fair Trade USA certified ingredient database
- FairWild Foundation (FWF) list of FairWild certified operations
- FLO-CERT fair trade customer database
- Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial clients database
- Institute for Market Ecology (IMO), list of Fair for Life (FFL) list of certified operations
- United States Department of Agriculture (USDA) National Organic Program (NOP) certified organic operations database

Chapter 1 Product description

Chapter 1 provides context for the analysis carried out in this study by providing detailed definitions for the types of botanical, algal and fungal substances (also referred to as ‘crude drugs’ or ‘herbal drugs’) that may be included in the broad general category of ‘medicinal and aromatic plants’ (MAPs). This is especially applicable in the context of traditional Chinese medicine (TCM) due to the many distinct uses of different plant parts of hundreds of species, and taking into consideration all of the possible processed forms of each of these in the relatively complex system of TCM.

Thus, the inclusion criteria for different analyses in this study are based firstly on whether the substance fits within the study’s provided definition of MAPs. A substance is included even if it has multiple end-uses. For example, wild liquorice (*Glycyrrhiza* spp.) root is a widely used medicinal ingredient, but is also widely used in alcoholic and non-alcoholic beverages, confectionary products, conventional food products and tobacco products.

Adding to the context of substances used in TCM, the inclusion criteria are also informed by customs and trade classifications and by categories of MAPs as defined by Chinese organic certification bodies. In both cases, there are examples of substances that could easily be missed in an analysis if the scope of inquiry were limited to only certain harmonized system (HS) tariff code groupings. For example, certain dried wild-collected fruits listed in HS code chapter 0813 could be missed if the analyst were not aware that the dried fruit was an important active ingredient used in TCM formulations. This study attempts to include the broadest range of MAP ingredients regardless of the HS code chapter used.

In summary, the inclusion criteria for estimating export trade of MAP substances included, for example:

- medicinal fruits coded in **HS 0813** (e.g. Chinese jujube date, hawthorn berry, seabuckthorn berry);
- tea leaf in **HS 0902**;
- various medicinal and aromatic plants in **HS 0904** through **HS 0910** (e.g. Chinese cassia bark, Chinese star anise fruit, fennel fruit, ginger rhizome, wild turmeric rhizome);
- flaxseed (linseed) in **HS 1204**;
- certain nutritional and medicinal seeds in **HS 1207** (e.g. cannabis seed, castor oil seed, mustard seed, perilla seed);
- hop strobile in **HS 1210**;
- most other medicinal and aromatic plants (for use in pharmacy and/or perfumery) in **HS 1211**;
- medicinal and nutritional seaweeds (e.g. kelp, sargassum) in **HS 1212**;
- natural gums and resins (e.g. Chinese asafoetida, Chinese red pine resin, dragon’s blood, olibanum) in **HS 1301**;
- herbal extracts (e.g. wild liquorice root extract) in **HS 1302**;
- plants used as natural colorants (e.g. amla fruit/emblic leafflower fruit) in **HS 1404**;
- fixed plant oils (e.g. cannabis seed oil, castor seed oil, perilla seed oil, tung seed oil) in **HS 1515**;
- extracts used as natural colorants (e.g. quillaja bark extract) in **HS 3301**; and
- essential oils (e.g. litsea fruit oil), extracted oleoresins (e.g. capsicum oleoresin, turmeric oleoresin) and resinoids (e.g. Chinese aloes wood resinoid) in **HS 3301**.

Finally, chapter 1 provides inclusion criteria for the analysis of MAPs traded globally with the value-addition of 'fair' certification. A list of 'fair' standards and certification schemes is given at the end of the chapter. Operations that were certified under any of the listed schemes were considered within the scope of analysis, and the MAP substances shown on their certificates were included in the tabulation.

1. Customs and trade statistics classification

The Harmonized Commodity Description and Coding System, generally referred to as Harmonized System or simply HS, is a multipurpose international product nomenclature developed by the WCO. It comprises about 5,000 commodity groups, each identified by a six-digit code. More than 190 countries and economies use the system as a basis for their customs tariffs and to collect international trade statistics. More than 98% of the merchandise in international trade is classified in terms of the HS.

Individual countries are allowed to assign additional digits, for example 8-, 9-, 10- or 12-digit HS codes for greater specificity of selected items of national importance. In the case of botanicals, the additional two to six digits can enable species-specific analysis of import and export trade data. Such analysis becomes possible at least for the export trade from countries using the more specific codes.

The trade statistics databases that were consulted for this study included the trade statistics compiled by China Trade Data and United Nations Commodity Trade Statistics Database (UN Comtrade). Table 1 shows the botanical ingredients that are listed in the China Trade Data database.

Quantity Measurement: Unit of quantity is shown by its abbreviation, such as kg (kilogram).

Valuation: Values of imports are on a cost insurance freight (CIF) basis. Values of exports are on a free on board (FOB) basis.^{1,2}

Definitions and inclusion criteria: The products covered here include MAPs, plant products (e.g. natural exudates; tree gums and resins) and certain algae and fungi [collectively referred to as 'crude drugs' in the Pharmacopoeia of the People's Republic of China (PPRC) and synonymously as 'herbal drugs' in the European Pharmacopoeia (PhEur)], whether cultivated or wild-collected,³ and their various preparations such as essential oils, extracts (e.g. dry extracts, fluidextracts, granules, soft extracts, teas and tinctures), oleoresins and resinoids. Most MAPs have multiple end-uses. For example some important medicinal plant materials that are widely used in TCM, such as cultivated ginger rhizome and wild liquorice root, are also widely used as components of alcoholic and non-alcoholic beverages, confectionary, cosmetics, dietary supplements, food and tobacco products, among others. Relevant to this study, which is focused mainly on wild-collected MAPs of China, MAP product categories are defined in the PPRC as follows:

- Crude drugs⁴ include medicinal parts obtained from plants or animals, cell inclusions and secretes separated from the origins, their extracts and minerals. Crude drugs are usually used as whole crude drugs, cut crude drugs or powdered crude drugs.
- Concentrated decoctions are semifluid preparations prepared by decocting the crude drugs in water, concentrating after discarding the residue and adding honey or sugar.

¹ National and international trade databases generally report values for imports as CIF-type values while values for exports are reported as FOB-type values. For the purpose of governments levying a tariff (duty) the product value plus cost of freight and insurance (C.I.F.) are always included.

² UN Comtrade Limitation #5: 'Imports reported by one country do not coincide with exports reported by its trading partner. Differences are due to various factors including valuation (imports CIF, exports FOB), differences in inclusions/ exclusions of particular commodities, timing etc.'

³ While every attempt is made in this study to differentiate wild vs. cultivated MAPs, quantitative trade data differentiating wild vs. cultivated MAPs is virtually non-existent. Even though the China Trade Data database provides more species-specific HS Codes than many or most national databases, hundreds of species are still lumped together within various general non-specific codes. Furthermore, many species are obtained from both cultivation and wild-collection sources which confounds the ability to estimate quantity of wild MAP trade vs. cultivated MAP trade.

⁴ The Chinese Pharmacopoeia definition of 'crude drugs' corresponds to the European Pharmacopoeia definition of 'herbal drugs': 'Herbal drugs are mainly whole, fragmented, or broken plants, parts of plants, algae, fungi or lichen, in an unprocessed state, usually in dried form but sometimes fresh. Certain exudates that have not been subjected to a specific treatment are also considered to be herbal drugs.'

- Liquid extracts and extracts are made by soaking crude drugs in suitable solvents to extract the active ingredients and evaporating the solvents partially or completely to a specified concentration.
- Medicinal distillates are the aromatic water prepared by steam distillation of the crude drugs containing volatile constituents.
- Medicinal granules are soluble, suspensible or effervescent preparations, in granular form, made from drug extracts or fine powdered drug, and suitable excipients.



Ginger rhizome is a medicinal plant used in traditional Chinese medicine (© Flickr / Steph L)

- Medicinal teas contain crude drugs or extracts of crude drugs and are intended for oral administration by soaking with boiling water or decocting. They consist of medicinal tea lumps, medicinal bag-packed teas and medicinal teas for decoctions.
- Medicinal wines are clear liquid preparations made by maceration and extraction of crude drugs with distilled wine.
- Powders may be defined as mixtures of one or more kinds of pulverized crude drugs that are used for oral administration or external application.
- Syrups are concentrated aqueous solutions of sucrose containing drugs, extracts of crude drugs and aromatics.
- Tinctures are clear liquid preparations of medicinal substances macerated or dissolved in ethanol of specified concentration or made by diluting the liquid extracts.

For import / export trade analysis, various crude drugs may be classified within several different HS code chapters including **08** (e.g. Chinese medicinal fruits such as Chinese jujube date and seabuckthorn berry), but most are grouped in chapters **09** (e.g. 0902 through 0910), **12** (e.g. 1210, 1211, and 1212), **13** (e.g. 1301.10 and 1301.90), **14** (e.g. 1404.10 and 1404.90), and **40** (e.g. 4001.30), among others, depending on the species, plant part and form.

Extracts are generally classified within HS code chapter **13** (e.g. 1302.19) but some also occur in HS code chapter **21** (e.g. 2101.20) as well as in HS code chapter **33**, which includes a range of botanical alcoholic extract solutions (prepared from minor forest products) that are grouped under HS 3302.9020. Essential oils and extracted oleoresins are classified within HS code chapter **33** (e.g. 3301). Finished herbal medicinal products are generally categorized under HS code chapter **30**. Some important TCM medicated wines and other finished products are discussed in this study.

2. Medicinal and aromatic plants, extracts and oils listed in China Trade Data

The China Trade Data database is limited in scope to mainland China trade and does not include trade data of Hong Kong SAR, Macau SAR, and/or Chinese Taipei. Table 1, titled 'Medicinal and aromatic plants and extracts listed in China Trade Data', provides a detailed listing of the MAP ingredients that were included in the export trade analysis in this study. The table is sorted alphabetically by Latin binomial, also providing the English common name, the plant part (e.g. fruit, leaf, root or seed) or plant product (e.g. gummy exudate of stems), and harmonized system tariff code as it appears in the current Commodity Classification for China Customs Statistics (CCCCS).

Table 1. Medicinal and aromatic plants and extracts listed in China Trade Data

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
<i>Acacia mearnsii</i>	Wattle extract	bark	3201.2000
<i>Acacia species</i>	Acacia gum	gummy exudate of stems and branches	1301.2000
<i>Adenophora axilliflora</i> (syn.: <i>A. stricta</i> subsp. <i>stricta</i>)	Adenophora	root	1211.9034
<i>Aleurites fordii</i> (syn.: <i>Vernicia fordii</i>)	Tung oil	seed	1515.9030
<i>Amomum villosum</i>	Chinese amomum	fruit, whole	0908.3100
<i>Amomum villosum</i>	Chinese amomum	fruit, crushed or ground	0908.3200
<i>Anacyclus pyrethrum</i>	Pyrethrum	root	1211.9091
<i>Angelica sinensis</i>	Chinese angelica (danggui)	root	1211.9011
<i>Aquilaria sinensis</i>	Chinese agarwood, aloes	wood with the resin	1211.9033
<i>Areca catechu</i>	Betelnut palm	seed	0802.8000
<i>Artemisia annua</i>	Sweet wormwood	aerial parts	1211.9035
<i>Artemisia apiacea</i>	Chinese wormwood	aerial parts	1211.9035
<i>Aspidosperma quebracho-blanco</i>	Quebracho extract	wood	3201.1000
<i>Astragalus gummifer</i> and other Asiatic species of <i>Astragalus</i>	Gum tragacanth	gummy exudate	1301.9010
<i>Astragalus membranaceus</i>	Astragalus	root	1211.9023
<i>Atractylodes macrocephala</i>	Bai-zhu atractylodes	rhizome	1211.9025
<i>Azadirachta indica</i>	Azadirachtin	obtained from seeds	1302.1920
<i>Betaphycus gelatinus</i> (syn.: <i>Eucheuma gelatinae</i>)	Carrageenan (extract)	seaweed	1302.3911
<i>Boswellia bhawdajiana</i>	Olibanum	dried resin from bark	1301.9020
<i>Boswellia carteri</i> (syn.: <i>B. sacra</i>)	Olibanum	dried resin from bark	1301.9020
<i>Brassica juncea</i>	Chinese mustard	seed	1207.5010
<i>Cannabis sativa</i>	Cannabis for TCM use	ripe fruit	1207.9910
<i>Camellia sinensis</i>	Black or green tea	leaf	0902
<i>Camellia sinensis</i>	Tea extracts	leaf	2101.2000
<i>Cannabis sativa</i>	Hemp	seed, flour or meal	1208.9000
<i>Capsicum annuum</i>	Capsicum	fruit, not crushed or ground	0904.2100
<i>Capsicum annuum</i>	Capsicum	fruit, crushed or ground	0904.2200
<i>Carthamus tinctorius</i>	Safflower	seed, flour or meal	1208.9000
<i>Carum carvi</i>	Caraway	mericarp	0909.4000
<i>Chrysanthemum cinerariaefolium</i>	Pyrethrum	flower	1211.9091
<i>Chrysanthemum indicum</i>	Wild chrysanthemum	capitulum	1211.9015
<i>Chrysanthemum morifolium</i>	Chrysanthemum	capitulum	1211.9015
<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	Chicory, roasted	root	2101.3000
<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	Chicory, unroasted	root	1212.9400

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
<i>Cinnamomum camphora</i>	Camphor oil	branch, leaf, stem	3301.2910
<i>Cinnamomum cassia</i>	Chinese cinnamon	bark, whole	0906.1900
<i>Cinnamomum cassia</i>	Chinese cinnamon	bark, crushed or ground	0906.2000
<i>Cinnamomum cassia</i>	Chinese cinnamon essential oil	branch and leaf	3301.2940
<i>Cinnamomum zeylanicum</i>	Ceylon cinnamon	bark or flower, whole	0906.1100
<i>Citrullus lanatus</i>	Black watermelon	seed, black	1207.7091
<i>Citrullus lanatus</i>	Red watermelon	seed, red	1207.7092
<i>Citrus x aurantifolia</i>	Lime essential oil	fruit or peel	3301.1910
<i>Citrus x limon</i>	Lemon essential oil	peel of fruit	3301.1300
<i>Citrus sinensis</i>	Sweet orange essential oil	peel of fruit	3301.1200
<i>Citrus species</i>	Pectic substances, pectinates	fruit	1302.2000
<i>Codonopsis pilosula</i>	Codonopsis	root	1211.9013
<i>Codonopsis pilosula var. modesta</i>	Codonopsis	root	1211.9013
<i>Codonopsis tangshen</i>	Codonopsis	root	1211.9013
<i>Coptis chinensis</i>	Coptis	rhizome	1211.9014
<i>Coptis deltoidea</i>	Coptis	rhizome	1211.9014
<i>Coptis teeta</i>	Coptis	rhizome	1211.9014
<i>Cordyceps sinensis</i>	Cordyceps	composite consisting of the stroma of the fungus, parasitized on the larva of some species of insects, and the dead caterpillar	1211.9016
<i>Coriandrum sativum</i>	Coriander	cremocarp, whole	0909.2100
<i>Coriandrum sativum</i>	Coriander	cremocarp, crushed, ground	0909.2200
<i>Crocus sativus</i>	Saffron	stigma and style	0910.2000
<i>Cucurbita pepo</i>	Pumpkin	seed	1212.9993
<i>Cuminum cyminum</i>	Cumin	fruit, whole	0909.3100
<i>Cuminum cyminum</i>	Cumin	fruit, crushed, ground	0909.3200
<i>Curcuma aromatica</i>	Wild turmeric	rhizome and root tuber	0910.3000
<i>Curcuma kwangsiensis</i>	Guangxi turmeric	rhizome and root tuber	0910.3000
<i>Curcuma longa</i>	Turmeric	rhizome and root tuber	0910.3000
<i>Curcuma phaeocaulis</i>	Peng curcuma	rhizome and root tuber	0910.3000
<i>Curcuma wenyujin</i>	Wen curcuma	rhizome and root tuber	0910.3000

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
<i>Curcuma zedoaria</i>	Zedoary	rhizome and root tuber	0910.3000
<i>Cyamopsis tetragonoloba</i>	Guar seed mucilage (guar gum)	endosperm, fruit, germ	1302.3200
<i>Cymbopogon nardus</i>	Ceylon citronella oil	essential oil of aerial parts	3301.2920
<i>Cymbopogon winterianus</i>	Java citronella oil	essential oil of aerial parts	3301.2920
<i>Daemonorops draco</i>	Dragon's blood	prepared resin of the fruit	1301.9020
<i>Derris elliptica</i>	Derris (tuba)	root	1211.9091
<i>Derris trifoliata</i>	Derris (tuba)	root	1211.9091
<i>Ecklonia kurome</i>	Kelp or tangle	dried thalline	1212.2110
<i>Elettaria cardamomum</i>	Cardamom	seed, whole	0908.3100
<i>Elettaria cardamomum</i>	Cardamom	seed, crushed or ground	0908.3200
<i>Eucalyptus globulus</i>	Eucalyptus oil	leaf or branchlet	3301.2960
<i>Eucheuma cottonii, E. denticulatum</i>	Eucheuma seaweed	whole plant, dried	1212.2161
<i>Eucheuma cottonii, E. denticulatum</i>	Eucheuma seaweed	whole plant, chilled	1212.2169
<i>Eucommia ulmoides</i>	Eucommia	stem bark	1211.9028
<i>Ferula fukanensis</i>	Chinese asafoetida	resin from the stem	1301.9030
<i>Ferula sinkiangensis</i>	Chinese asafoetida	resin from the stem	1301.9030
<i>Foeniculum vulgare</i>	Fennel	fruit, whole	0909.6190
<i>Foeniculum vulgare</i>	Fennel	fruit, crushed, ground	0909.6290
<i>Fritillaria thunbergii</i>	Zhejiang fritillary	bulb	1211.9017
<i>Gastrodia elata</i>	Gastrodia	tuber	1211.9022
<i>Gelidium amansii, G. elegans, and other related red algae</i>	Agar (extract)	mucilage from alga	1302.3100
<i>Ginkgo biloba</i>	Ginkgo	nut	0802.9020
<i>Ginkgo biloba</i>	Ginkgo extract	leaf	1302.1940
<i>Glycyrrhiza glabra</i>	Liquorice root	root, rhizome and stolon	1211.9036
<i>Glycyrrhiza glabra</i>	Liquorice root extract	root, rhizome and stolon	1302.1200
<i>Glycyrrhiza inflata</i>	Chinese liquorice root	root, rhizome and stolon	1211.9036
<i>Glycyrrhiza inflata</i>	Chinese liquorice root extract	root, rhizome and stolon	1302.1200
<i>Glycyrrhiza uralensis</i>	Chinese liquorice root	root, rhizome and stolon	1211.9036
<i>Glycyrrhiza uralensis</i>	Chinese liquorice root extract	root, rhizome and stolon	1302.1200
<i>Gracilaria asiatica, G. lemaneiformis, G. tenuistipitata</i>	Gracilaria	thallus, dried	1212.2171
<i>Gracilaria asiatica, G. lemaneiformis, G. tenuistipitata</i>	Gracilaria	thallus, other	1212.2179 1212.2190

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
			1212.2900
<i>Humulus lupulus</i>	Hop	strobile, whole	1210.1000
<i>Humulus lupulus</i>	Hop	strobile, ground or pellets	1210.2000
<i>Humulus lupulus</i>	Hop extract	strobile	1302.1300
<i>Illicium verum</i>	Chinese star anise	fruit, whole	0909.6110
<i>Illicium verum</i>	Chinese star anise	fruit, crushed, ground	0909.6210
<i>Illicium verum</i>	Chinese star anise essential oil	fruit	3301.2930
<i>Iris tectorum</i>	Balsam of irises	rhizome	3301.3010
<i>Laminaria japonica</i>	Algin (alginic acid)	extracted from thalline	1302.3912
<i>Laminaria japonica</i>	Kelp or tangle	dried thalline	1212.2110
<i>Ligusticum jeholense</i>	Chinese lovage	root and rhizome	1211.9018
<i>Ligusticum sinense</i>	Sichuan lovage	root and rhizome	1211.9018
<i>Linum usitatissimum</i>	Flaxseed (linseed)	seed, ripe	1204.0000
<i>Linum usitatissimum</i>	Linseed oil, crude	seed	1515.1100
<i>Linum usitatissimum</i>	Linseed oil, refined	seed	1515.1900
<i>Litsea cubeba</i>	Litsea oil	fruit, ripe	3301.2950
<i>Lycium barbarum</i>	Barbary wolfberry (goji)	fruit, ripe	1211.9031
<i>Malus species</i>	Pectic substances, pectinates	fruit	1302.2000
<i>Mentha x piperita</i>	Peppermint oil	aerial parts	3301.2400
<i>Myristica fragrans</i>	Mace	aril of the ripe fruit, whole	0908.2100
<i>Myristica fragrans</i>	Mace	aril, crushed, ground	0908.2200
<i>Myristica fragrans</i>	Nutmeg	kernel, whole	0908.1100
<i>Myristica fragrans</i>	Nutmeg	kernel, crushed, ground	0908.1200
<i>Nelumbo nucifera</i>	Sacred lotus	seed, ripe	1212.9994
<i>Nostoc flagelliforme</i>	Black moss	fungi	1212.2120
<i>Paeonia lactiflora</i>	Chinese peony	root	1211.9021
<i>Panax ginseng</i>	Asian ginseng	root, dried, wild	1211.2020
<i>Panax ginseng</i>	Asian ginseng	root, fresh	1211.2091
<i>Panax ginseng</i>	Asian ginseng	root, dried, cultivated	1211.2099
<i>Panax notoginseng</i>	Tienchi ginseng	root	1211.9012
<i>Panax quinquefolius</i>	American ginseng	root	1211.2010
<i>Papaver somniferum</i>	Opium	exudate of unripe capsules	1302.1100
<i>Pelargonium graveolens</i>	Geranium oil	leaf	3301.2991
<i>Pinellia ternata</i>	Pinellia	tuber	1211.9019
<i>Pinus massoniana</i>	Chinese red pine resin	resin	1301.9040

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
<i>Piper nigrum</i>	Pepper	fruit, dried, whole	0904.1100
<i>Piper nigrum</i>	Pepper	fruit, crushed or ground	0904.1200
<i>Poria cocos</i>	Poria	sclerotium	1211.9029
<i>Porphyra haitanensis, P. yezoensis</i>	Laver; nori	whole plant, dried	1212.2141
<i>Porphyra haitanensis, P. yezoensis</i>	Laver; nori	whole plant, fresh	1212.2142
<i>Porphyra haitanensis, P. yezoensis</i>	Laver; nori	whole plant, chilled	1212.2149
<i>Prunus armeniaca</i>	Apricot kernel	kernel, other	1211.9919
<i>Prunus armeniaca</i>	Apricot kernel	kernel, bitter	1212.9911
<i>Prunus armeniaca</i>	Apricot kernel	kernel, sweet	1212.9912
<i>Rehmannia glutinosa</i>	Rehmannia	root tuber	1211.9026
<i>Rheum officinale</i>	Chinese rhubarb	root and rhizome	1211.9024
<i>Rheum palmatum</i>	Chinese rhubarb	root and rhizome	1211.9024
<i>Rheum tanguticum</i>	Chinese rhubarb	root and rhizome	1211.9024
<i>Ricinus communis</i>	Castor	seed	1207.3010
<i>Ricinus communis</i>	Castor oil	seed	1515.3000
<i>Sargassum fusiforme</i>	Sargassum seaweed	alga	1212.21
<i>Sargassum pallidum</i>	Sargassum seaweed	alga	1212.21
<i>Scutellaria baicalensis</i>	Chinese skullcap	root	1211.9037
<i>Sinapis alba</i>	White mustard	seed	1207.5010
<i>Sophora japonica</i>	Japanese sophora	flower bud	1211.9027
<i>Sterculia lychnophora</i>	Bantaro seed; pangdahai	seed, ripe	1211.9032
<i>Syzygium aromaticum</i>	Clove	flower bud, ground	0907.2000
<i>Syzygium aromaticum</i>	Clove	flower bud, whole	0907.1000
<i>Tilia europaea (T. x vulgaris)</i>	European linden	flower and leaf	1211.9038
<i>Toxicodendron vernicifluum</i>	Chinese lacquer tree	dried purified resin	1302.1910
<i>Undaria pinnatifida</i>	Pinnatifida (wakame)	whole plant, chilled	1212.2139
<i>Undaria pinnatifida</i>	Pinnatifida (wakame)	whole plant, dried	1212.2131
<i>Undaria pinnatifida</i>	Pinnatifida (wakame)	whole plant, fresh	1212.2132
<i>Vanilla tahitensis</i> or <i>V. planifolia</i>	Vanilla	fruit, dried, whole	0905.1000
<i>Vanilla tahitensis</i> or <i>V. planifolia</i>	Vanilla	fruit, dried, crushed, ground	0905.2000
<i>Zingiber officinale</i>	Ginger, crushed or ground	rhizome	0910.1200
<i>Zingiber officinale</i>	Ginger, neither crushed nor ground	rhizome	0910.1100
<i>Ziziphus jujuba</i>	Chinese jujube date	fruit, ripe	0813.4030

Other	Description	Plant part / plant product	CCCCS HS code
TCM product: Essential balm	Contains camphor, menthol, Chinese cassia oil, clove oil	various plant parts	3004.9054
TCM product: An Gong Niu Huang Wan	Contains Chinese skullcap root, coptis rhizome, curcuma rhizome, gardenia fruit	various plant + animal parts	3004.9055
TCM product: Bai Yao	Contains tienqi ginseng and other ingredients	various plant parts	3004.9053
TCM product: Artemisinins + derivatives	Sweet wormwood	aerial parts	3004.9060
TCM product: Other artemisinins + derivatives	Sweet wormwood	aerial parts	3004.9090
TCM product: Medicated wines	Various plant species	various plant + animal parts	3004.9051
TCM product: Other	Various plant + animal species	various plant + animal parts	3004.9059
TCM product: Pien Tzu Huang	Contains tienqi ginseng	root	3004.9052
Various species	Other aromatic plants	various plants parts	1211.9050
Various species	Other essential oils NESOI; e.g. African basil leaf oil (<i>Ocimum gratissimum</i>), Chinese chaste tree leaf oil (<i>Vitex negundo</i>), Chinese turpentine oil (<i>Pinus massoniana</i>), Dahurian rhododendron leaf oil (<i>Rhododendron dauricum</i>), Patchouli herb oil (<i>Pogostemon cablin</i>)	various plant parts	3301.2999
Various species	Other essential oils of citrus other than bergamot, lemon, lime or orange	fruit or peel	3301.1990
Various species	Other essential oils of mint other than peppermint; e.g. Chinese mint (<i>Mentha haplocalyx</i>), <i>M. crispata</i> , and/or spearmint (<i>M. spicata</i>)	aerial parts	3301.2500
Various species	Other extracted oleoresins; e.g. capsicum fruit (<i>Capsicum annuum</i>), Chinese star anise fruit (<i>Illicium verum</i>), ginger rhizome (<i>Zingiber officinale</i>), pepper fruit (<i>Piper nigrum</i>), turmeric rhizome (<i>Curcuma longa</i>)	various plant parts	3301.9010
Various species	Other fixed plant oils; e.g. evening primrose oil, hemp seed oil	various plant parts	1515.9090

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
	(<i>Cannabis sativa</i>), perilla seed oil (<i>Perilla frutescens</i>), pumpkin seed oil		
Various species	Other fruit, dried; e.g. Chinese hawthorn berry (<i>Crataegus pinnatifida</i>), seabuckthorn berry (<i>Hippophaë rhamnoides</i>)	fruit	0813.4090
Various species	Other herbal extracts; e.g. rhubarb root extract (<i>Rheum palmatum</i>)	various plant parts	1302.1990
Various species	Other insecticidal plants	various plant parts	1211.9099
Various species	Other medicinal plants; e.g. bupleurum root (<i>Bupleurum</i> spp.), eleuthero root (<i>Eleutherococcus senticosus</i>), ephedra herb (<i>Ephedra</i> spp.), gotu kola herb (<i>Centella asiatica</i>)	various plant parts	1211.9039
Various species	Other mucilages and thickeners derived from seaweeds and other algae		1302.3990
Various species	Other mucilages and thickeners from vegetable products; e.g. quince seed (<i>Cydonia oblonga</i>)	various plant parts	1302.3919
Various species	Other natural gums, resins, gum-resins and oleoresins (balsams); e.g. Formosan sweet gum (<i>Liquidambar formosana</i>)	various exudates	1301.9090
Various species	Other oilseeds e.g. cannabis (<i>Cannabis sativa</i>), China wood, Chinese vegetable tallow, perilla, tea seed (<i>Camellia</i> spp.)	seeds (fruits)	1207.9999
Various species	Other raw vegetable materials of a kind used primarily in dyeing or tanning NESOI; e.g. amla (<i>Phyllanthus emblica</i>), annatto, henna, luffa, quebracho, quillaja, sandalwood, soapberry seed, wattle bark	various plant parts	1404.9010 1404.9090
Various species	Other resinoids NESOI	various plant parts	3301.309099
Various species	Other resinoids of plants of endangered or	various plant parts	3301.309010

Latin binomial(s)	Common name	Plant part / plant product	CCCCS HS code
	threatened species; e.g. of Chinese aloes wood (<i>Aquilaria sinensis</i>)		
Various species	Other spices; e.g. curry leaf (<i>Murraya koenigii</i>), fenugreek seed (<i>Trigonella foenum-graecum</i>)	various plant parts	0910.9900

Source: Author's elaboration based on China Trade Data (CTD) TradeSTAT database

Regarding 'other' or 'various' species that are lumped together within a general tariff code and not elsewhere specified (nes), other regions provide specific HS code numbers for many of mainland China's exports that are not specified in the China Trade Data database (for example Chinese Taipei trade data). This is a useful cross reference, because it can help to identify important MAP exports of mainland China that are specified to the species-level by the importer but left in a general category by the exporter.



Flower of Houpo Magnolia (*Magnolia officinalis*), bark of which is collected as an important TCM ingredient, in Zhejiang Province. Overharvested for its bark's traditional medicinal properties, Houpo Magnolia is exceedingly rare in its wild native habitats (© Li Jiangliang)

To illustrate this point, table 2 shows MAPs classified within HS code chapter 1211 as specified in the Chinese Taipei Customs Administration tariff database. The table is sorted alphabetically by Latin binomial, followed by a description (English common name and in some cases also the 'Hanyu Pinyin' transliteration for greater specificity, and plant part(s)) and harmonized system tariff code as it appears in the current Standard Classification of Commodities of Chinese Taipei (CCC).

Table 2. Chapter HS 1211 medicinal plants listed in Chinese Taipei Tariff Schedule

Latin binomial name	Description	Chinese Taipei HS code
<i>Acacia catechu</i>	Cutch branch & stem decoction	12119065006
<i>Achyranthes bidentata</i> and/or <i>Cyathula officinalis</i>	Achyranthes root and/or Cyathula root	12119041005
<i>Agastache rugosa</i>	Chinese giant hyssop	12119018004
<i>Alpinia officinarum</i>	Lesser galangal rhizome	12119035003
<i>Anemarrhena asphodeloides</i>	Anemarrhena rhizome	12119039009
<i>Angelica sinensis</i>	Danggui root	12119054009
<i>Angelica sinensis</i>	Danggui root heads (Po Wei K'uei Pi'en)	12119056007
<i>Angelica sinensis</i>	Danggui root tails (Hsi K'uei Ch'ao, Siao K'uei Wei)	12119055008
<i>Aquilaria sinensis</i>	Agarwood, Chinese	12119012000
<i>Areca catechu</i>	Betel ripe fruit seed	12119069002
<i>Areca catechu</i>	Betelnut palm peel	12119068003
<i>Aristolochia contorta</i> , <i>A. debilis</i>	Aristolochia fruit	12119091433

Latin binomial name	Description	Chinese Taipei HS code
<i>Aristolochia contorta</i> , <i>A. debilis</i>	Aristolochia stem	12119091442
<i>Aristolochia fangchi</i>	Aristolochia fangchi root	12119091415
<i>Aristolochia manshuriensis</i>	Manchurian birthwort stem	12119091424
<i>Astragalus membranaceus</i>	Astragalus root	12119050003
<i>Atractylodes macrocephala</i>	Bai-zhu atractylodes rhizome	12119030008
<i>Bupleurum chinense</i> , <i>B. scorzonerifolium</i>	Bupleurum root	12119043003
<i>Cassia angustifolia</i> , <i>C. acutifolia</i>	Senna leaf	12119016006
<i>Celosia cristata</i>	Cockcomb flower	12119062009
<i>Chrysanthemum morifolium</i>	Chrysanthemum flower	12119091503
<i>Codonopsis pilosula</i>	Codonopsis root	12119058005
<i>Codonopsis tangshen</i>	Codonopsis root	12119057006
<i>Coptis chinensis</i> , <i>C. deltoidea</i> , <i>C. teeta</i>	Coptis rhizome	12119024006
<i>Curcuma zedoaria</i>	Zedoary rhizome	12119034004
<i>Cyathula officinalis</i> or <i>Achyranthes bidentata</i>	Cyathula root and/or Achyranthes root	12119041005
<i>Erythroxylum coca</i>	Coca leaf	12113000007
<i>Eucommia ulmoides</i>	Eucommia stem bark	12119013009
<i>Euphorbia pekinensis</i>	Peking euphorbia root	12119045001
<i>Euryale ferox</i>	Euryale seed	12119091629
<i>Flemingia philippinensis</i>	Philippine flemengia root	12119051002
<i>Fritillaria cirrhosa</i>	Sichuan fritillary bulb, Hsiao Yun Pei	12119026004
<i>Fritillaria delavayi</i>	Sichuan fritillary bulb, Lu Pei	12119028002
<i>Fritillaria thunbergii</i>	Zhejiang fritillary bulb	12119029001
<i>Fritillaria unibracteata</i>	Sichuan fritillary bulb, Sung Fan Pei	12119027003
<i>Gastrodia elata</i>	Gastrodia rhizome	12119038000
<i>Glehnia littoralis</i>	Glehnia root	12119053000
<i>Glycyrrhiza glabra</i> , <i>G. uralensis</i>	Liquorice root	12119070009
<i>Ligusticum wallichii</i>	Ligusticum wallichii rhizome	12119025005
<i>Lycium barbarum</i>	Lycium fruit	12119091102
<i>Magnolia liliiflora</i>	Red magnolia flower	12119063008
<i>Magnolia officinalis</i>	Magnolia bark, P'o Ken, p'o Hua	12119015007
<i>Magnolia officinalis</i>	Magnolia bark, P'o Tu'ng	12119014008
<i>Mentha haplocalyx</i>	Chinese mint leaf	12119091610
<i>Mesona</i> spp.	Mesona herb	12119091200
<i>Momordica grosvenorii</i>	Luo han guo fruit	12119067004
<i>Paeonia lactiflora</i>	Chinese peony root	12119044002
<i>Paeonia lactiflora</i>	White peony root (without bark)	12119061000
<i>Panax ginseng</i>	Ginseng root, Chie Lin ginseng	12112010007
<i>Panax ginseng</i>	Ginseng root, red, Korean	12112021004
<i>Panax ginseng</i>	Ginseng root, white, Korean	12112022003
<i>Panax japonicus</i>	Ginseng root, red, Japanese	12112031000
<i>Panax japonicus</i>	Ginseng root, white, Japanese	12112032001

Latin binomial name	Description	Chinese Taipei HS code
<i>Panax pseudoginseng</i>	Ginseng root, Tienchi	12112051007
<i>Panax pseudoginseng</i>	Ginseng root, Tienchi, Yuan Ch'i Wei	12112052006
<i>Panax quinquefolius</i>	Ginseng root, American	12112041000
<i>Panax</i> spp.	Ginseng leaf	12119017005
<i>Panax</i> spp.	Ginseng root, I Chung Sheng Wei	12112043008
<i>Panax</i> spp.	Ginseng root, Pao Shen Wei	12112042009
<i>Panax</i> spp.	Ginseng roots, other	12112090000
<i>Papaver somniferum</i>	Poppy straw	12114000005
<i>Picrorhiza scrophulariiflora</i>	Picrorhiza rhizome	12119036002
<i>Pinellia ternata</i>	Pinellia tuber	12119037001
<i>Polygonatum cyrtoneura</i> , <i>P. sibiricum</i>	Polygonatum rhizome	12119040006
<i>Poria cocos</i>	Poria, Ch'ieh P'ien Szu	12119021009
<i>Poria cocos</i>	Poria, Fang Fu Ling, Fu Shen, P'i Fu Ling	12119022008
<i>Poria cocos</i>	Poria, P'ing P'ien	12119020000
<i>Rehmannia glutinosa</i>	Rehmannia root tuber	12119049007
<i>Rheum officinale</i> , <i>R. palmatum</i> , <i>R. tanguticum</i>	Rhubarb root	12119023007
<i>Salvia miltiorrhiza</i>	Chinese salvia root	12119047009
<i>Santalum album</i>	Sandalwood heartwood	12119011001
<i>Saposhnikovia divaricata</i>	Siler root	12119052001
<i>Saussurea costus</i>	Costus root, new	12119060001
<i>Saussurea costus</i>	Costus root, old	12119059004
<i>Scrophularia ningpoensis</i>	Scrophularia root	12119048008
<i>Scutellaria baicalensis</i>	Chinese skullcap root	12119046000
<i>Smilax glabra</i>	Chinese smilax rhizome	12119019003
<i>Stellaria dichotoma</i>	Starwort root	12119042004
<i>Typhonium giganteum</i>	Typhonium rhizome, Pai Fu P'ien Hsiao Hy Fu P'ien	12119032006
<i>Typhonium giganteum</i>	Typhonium rhizome, P'ei Fu P'ien	12119033005
<i>Typhonium giganteum</i>	Typhonium rhizome, Sheng Tien Hsiung	12119031007
Various species	Other aromatic plants, dried	12119092209
Various species	Other aromatic plants, fresh	12119092101
Various species	Other insecticidal or fungicidal plants dried	12119093208
Various species	Other insecticidal or fungicidal plants, fresh	12119093100
Various species	Other medicinal plants, dried	12119091923
Various species	Other medicinal plants, fresh	12119091914
<i>Zanthoxylum</i> spp.	Sichuan pepper fruit	12119091308
<i>Ziziphus jujuba</i> var. <i>spinosa</i>	Jujube seed	12119064007

Source: Author's elaboration based on Tariff Database Search System, Chinese Taipei, Ministry of Finance, Directorate General of Customs

3. CNCA organic certification categories for Chinese MAPs

Aside from the various tariff schedule chapters within which MAPs are classified for trade analysis purposes, other classification systems could cause an item to be included in (or excluded from) the study. For example, the National Certification and Accreditation Administration of the People's Republic of China (CNCA) publishes a list of the categories of articles that authorized inspection and certification bodies are to use for classifying organic certifiable crops, whether cultivated crops or so-called wild crops.

It is relevant for this study to consider the current scope of organic certification of MAPs in China. This is because producer groups already participating in ecological sustainability standards and certification schemes such as organic may be the most likely enterprises to consider additional value-adding with other international sustainability standards and certification schemes (e.g. FLO fairtrade for cultivated MAP crops and FWF FairWild for wild MAP crops). While the organic wild-crop harvesting practice standards require certified operations to maintain a list of any rare, threatened or endangered plants or animals that occur in the harvest area and monitoring, the requirements and indicators for demonstrating compliance are not nearly as comprehensive and specific as the biodiversity conservation requirements of certain other sustainability standards.

Table 3 provides the CNCA list (in Chinese characters) with English translations (inserted by the author of this study) for selected categories of most relevance to the scope of this study. Categories that are irrelevant for this study have been deleted from the CNCA table.

Table 3 CNCA list of organic certification categories for Chinese MAPs

序号 No.	产品种类 Product categories	产品 Examples of products in category
生产: Production		
植物类(含野生植物采集): Plants (including the collection of wild plants)		
谷物: Grain		
22	食用菌类 EDIBLE MUSHROOMS	菇类; 木耳; 银耳; 块菌类; 北虫草 MUSHROOMS AND FUNGUS, e.g. <i>Cordyceps militaris</i>
水果与坚果 – FRUITS AND NUTS		
32	枣	枣 - DA ZAO (<i>Jujubae Fructus</i>)
34	其它水果 – OTHER FRUITS	梅; 杨梅; 草莓; 黑豆果; 橄榄; 樱桃; 李子; 猕猴桃; 香蕉; 椰子; 菠萝; 芒果; 番石榴; 荔枝; 龙眼; 杨桃; 波萝蜜; 火龙果; 红毛丹; 西番莲; 莲雾; 面包果; 榴莲; 山竹; 海枣; 柿; 枇杷; 石榴; 桑椹; 酸浆; 沙棘; 山楂; 无花果; 蓝莓; 黑莓; 树莓; 高钙果; 越橘; 黑加仑; 雪莲果; 诺尼果 e.g. SANG SHEN (<i>Mori Fructus</i>), SHAN ZHA (<i>Crataegi Fructus</i>), SHA JI (<i>Hippophae Fructus</i>), ZHONG HUA MI HOU TAO (<i>Actinidiae Chinensis Fructus</i>)
豆类与其他油料作物 – BEANS AND OTHER OILSEEDS		
39	其他油料作物 OTHER OILSEED CROPS	油菜籽; 芝麻; 花生; 茶籽; 苜蓿籽; 紫苏籽; 葵花籽; 红花籽; 油棕果; 亚麻籽; 南瓜籽; 月见草籽; 大麻籽; 玫瑰果; 琉璃苣籽; 翅果油树; 青刺果; 线麻 e.g. HUO MA REN (<i>Fructus Cannabis</i>), NAN GUA ZI (<i>Semen Cucurbitae</i>), YA MA ZI (<i>Semen Lini</i>)
香辛料作物产品 – SPICE CROPS		
41	香辛料作物产品 SPICE CROPS	花椒; 青花椒; 胡椒; 月桂; 肉桂; 丁香; 众香子; 香荚兰豆; 肉豆蔻; 陈皮; 迷迭香; 八角茴香; 球茎茴香; 孜然; 小茴香; 甘草; 百里香; 薄荷; 姜黄; 红椒; 藏红花; 芝麻菜; 山葵; 辣根; 草果; 甘菊; 神香草; 猫薄荷 e.g. BA JIAO HUI XIANG (<i>Fructus Anisi Stellati</i>), CAO GUO (<i>Fructus Tsaoko</i>), DING XIANG (<i>Flos Caryophylli</i>), GAN CAO (<i>Radix et Rhizoma Glycyrrhizae</i>), HU JIAO (<i>Fructus Piperis</i>), ROU DOU KOU (<i>Semen Myristicae</i>), ROU GUI (<i>Cortex Cinnamomi</i>), XI HONG HUA (<i>Stigma Croci</i>), ZI RAN (<i>Fructus Cumini</i>)

序号 No.	产品种类 Product categories	产品 Examples of products in category
其他类植物 – OTHER PLANTS		
45	调香的植物 - AROMATIC PLANTS	香水莲；薰衣草；迷迭香；柠檬香茅；柠檬马鞭草；藿香；鼠尾草；小地榆；天竺葵；紫丁香；艾草；佛手柑 e.g. MI DIE XIANG (Folium Rosmarini), SA ER WEI YA (Folium Salviae Officinalis), XIANG MAO (Folium Cymbopogonis Citrati), XUN YI CAO (Flos Lavandulae)
46	野生采集的植物 WILD COLLECTED PLANTS	蕨菜；刺嫩芽；山芹；山核桃；松子等；沙棘；蓝莓等；羊肚菌；松茸；牛肝菌；鸡油菌等；板蓝根；月见草；蒲公英；红花；贝母；灰树花；当归；葛根；石耳等；榛蘑；草蘑；松蘑；栗蘑；红蘑；小麦草；塔花；水飞蓟；益母草；茯苓；高蓂姜；接骨木；蒺藜；天门冬；积雪草；蔓荆子；独活；葫芦巴；苦橙；缬草；车前草；远志；山葡萄；红树莓；雪菊；罗布麻；橡籽；刺五加；华西银腊梅 e.g. BAN LAN GEN (Isatidis Radix), BEI MU (Fritillariae Bulbus), CI WU JIA (Acanthopanax Senticosi Radix et Rhizoma seu Caulis), DA CHI SHAN QIN (Osterici Grosseserrati Radix), DANG GUI (Angelicae Sinensis Radix), DOU KOU (Amomi Rotundus Fructus), DU HUO (Angelicae Pubescentis Radix), FU LING (Poria), GE GEN (Puerariae Lobatae Radix), JI LI (Tribuli Fructus), JI XUE CAO (Centellae Herba), LUO BU MAYE (Apocyni Veneti Folium), MAN JING ZI (Viticis Fructus), PU GONG YING (Taraxaci Herba et Radix), SHA JI (Hippophae Fructus), SONG RONG (Tricholoma Matsutake), YANG DU JUN (Morchellae Esculentae Fructificatio), YI MU CAO (Herba Leonuri), YUAN ZHI (Radix Polygalae)
47	茶 – TEA	茶 – TEA
植物类中药 – TRADITIONAL CHINESE MEDICINAL PLANTS		
49	植物类中药 - TCM PLANTS	三七；大黄；婆罗门参；人参；西洋参；土贝母；黄连；板蓝根；黄芩；菟丝子；牛蒡根；地黄；桔梗；槲寄生；钩藤；通草；土荆皮；白鲜皮；肉桂；杜仲；牡丹皮；刺五加皮；银杏叶；石韦；石南叶；枇杷叶；苦丁茶；柿叶子；罗布麻；狗骨叶；合欢花；红花；辛夷；鸡冠花；洋金花；藏红花；金银花；大草寇；山楂；女贞子；山茱萸；五味子；巴豆；牛蒡子；红豆蔻；川楝子；沙棘；大蓟；广藿香；小蓟；马鞭草；龙葵；长春花；仙鹤草；白英；补骨脂；羊栖菜；海蒿子；冬虫夏草；茯苓；灵芝；石斛；除虫菊；甘草；罗汉果；巴戟天；黄荆；何首乌；川穹；天麻；厚朴；柴胡；莞香；苈蓉；锁阳；蝉花；玛咖；玉竹；连翘；金线莲；绞股蓝；当归；丹参；党参；黄芪；扯根菜 e.g. BAI XIAN PI (Dictamni Cortex), BAN LAN GEN (Isatidis Radix), CHAI HU (Bupleuri Radix), DA HUANG (Radix et Rhizoma Rhei), DANG GUI (Radix Angelicae Sinensis), DAN SHEN (Salviae Miltiorrhizae Radix et Rhizoma), DANG SHEN (Codonopsis Radix), DI HUANG (Radix Rehmanniae), DONG CHONG XIA CAO (Cordyceps), DU ZHONG (Cortex Eucommiae), GAN CAO (Radix et Rhizoma Glycyrrhizae), HAI ZAO (Sargassum), HE SHOU WU (Polygoni Multiflori Radix), HOU PO (Magnoliae Officinalis Cortex), HUANG LIAN (Rhizoma Coptidis), HUANG QI (Astragali Radix), HUANG QIN (Radix Scutellariae), HU JI SHENG (Visci Herba), JIN YIN HUA (Lonicerae Japonicae Flos), LING ZHI (Ganoderma), LIAN QIAO (Forsythiae Fructus), LUO HAN GUO (Siraitiae Fructus), MU DAN PI (Cortex Moutan), PI PA YE (Eriobotryae Folium), ROU GUI (Cinnamomi Cortex), SHA JI (Hippophae Fructus), SHAN ZHA YE (Crataegi Folium), SHI DI (Kaki Calyx), SHI HU (Dendrobii Caulis), SHI WEI (Pyrrosiae Folium), TIAN MA (Gastrodiae Rhizoma), TU JING PI (Pseudolaricis Cortex), TU SI ZI (Cuscutae Semen), WU JIA PI (Acanthopanax Cortex), WU WEI ZI (Schisandrae Fructus), YIN XING YE (Ginkgo Folium)
水生植物 – AQUATIC PLANTS		

序号 No.	产品种类 Product categories	产品 Examples of products in category
76	海藻和海草类 SEAWEEEDS	海带；紫菜；裙带菜；麒麟菜；江蓠；羊栖菜；海苔；螺旋藻 e.g. HAI ZAO (Sargassum), KUN BU (Laminariae Thallus; Eckloniae Thallus)
不另分类的食品 – Food not elsewhere classified		
113	茶 – TEA	红茶；黑茶；绿茶；花茶；乌龙茶；白茶；黄茶；速溶茶；茶粉 e.g. CHA (Folium Camelliae Sinensis; Folia Camelliae Sinensis Fermentata)
114	代用茶 - TEA SUBSTITUTES	苦丁茶；杜仲茶；柿叶茶；桑叶茶；银杏叶茶；野菊花茶；野藤茶；菊花茶；薄荷；大麦茶；其他代用茶（仅限以本目录“生产-植物类（1-49）”为原料加工） e.g. DA YE SHE PU TAO (Caulis Ampelopsis Megalophyllae), JU HUA CHA (Flos Chrysanthemi), KU DING CHA (Folium Ilicis), SHI DI CHA (Kaki Calyx), YIN XING CHA (Folium Ginkgo)
118	植物类中草药加工制品（仅限于经切碎、烘干等物理工艺加工的产品） CHINESE HERBAL MEDICINE PROCESSING PLANT PRODUCTS (only after cutting, drying and other physical processing)	三七；大黄；人参；西洋参；菟丝子；牛蒡根；地黄；桔梗；槲寄生；肉桂；杜仲；牡丹皮；五加皮；银杏叶；苦丁茶；罗布麻；红花；藏红花；金银花；山楂；女贞子；山茱萸；五味子；牛蒡子；沙棘；大蓟；广藿香；小蓟；补骨脂；冬虫夏草；茯苓；灵芝；松花粉 e.g. the same TCM plants listed in Category 49 but in a processed form.

Source: Author's elaboration based on CNCA document: 有机产品认证目录（保留修改痕迹）-版本：2014/8/27

4. 'Fair' standards included in this study

A determination of the current market situation for MAPs with 'fair' certifications globally is also relevant for assessing the potential market for Chinese wild-collected MAPs (if commercially available with sustainability certifications beyond organic).

For that part of the analysis, MAP ingredients produced in compliance with any of the below-listed international standards (as evidenced by independent third-party certification) were considered for inclusion in this study. All of the listed international standards are broadly considered to be 'fair trade' standards, although some also include ecological sustainability criteria in addition to the economic and social sustainability criteria of fair trade. Other standards that were considered but excluded from the analysis follow this list.

MAP ingredients certified in compliance with any of these standards were included:

- Control Union (CU) Fair Choice Social and Fair Trade Standard
- EcoCert ESR (Equitable, Solidaire, Responsible) Standard
- Fairtrade International (FLO) Fairtrade Standard for Herbs and Herbal Teas for Hired Labour
- Fairtrade International (FLO) Fairtrade Standard for Tea for Hired Labour
- Fairtrade International (FLO) Fairtrade Standard for Tea for Small Producer Organizations
- Fairtrade International (FLO) Fairtrade Standard for Herbs, Herbal Teas & Spices for Small Producer Organizations (SPOs)
- Fair Trade Sustainability Alliance (FairTSA) Consolidated standards for the production of agricultural products, processed foods, wild collected plants, handicrafts and personal-care products

- Fair Trade USA (FTUSA) Farm Workers Standard (FWS)
- Fair Trade USA (FTUSA) Independent Smallholder (ISS) Standard
- FairWild Foundation (FWF) FairWild Standard (FWS)
- Institute for Marketecology (IMO) Fair for Life (FFL) Social & Fairtrade Standard
- Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial Standard

It is important to note, however, that most of these standards have certain limitations in their scope of application. For example, the FLO fairtrade standards have (a) geographic limitations (e.g. only applicable in countries with low and medium development status) and (b) limitations on the types of enterprises that may participate (e.g. certain MAPs can only be FLO fairtrade certified if the enterprise is a small producer organization or cooperative). Furthermore, most of the listed standards were designed mainly for implementation by small farming operations and do not expressly include wild-collection. Thus, their application is mostly relevant for cultivated MAPs, with some exceptions. Another example is the FairWild Standard, which is limited in scope to wild-collected plants, plant products (e.g. exudates), fungi and lichens. Cultivated plants are excluded from the FairWild Standard, as well as animals and animal products such as certain waxes and honey. Chapter 4 provides a summary statement about each of the listed 'fair' standards.

The section in this study titled 'Information on the databases used' offers more information on the sources that were used to gather data on 'fair' certified operations and the natural ingredients that each operator produces and markets with certification.

MAP ingredients certified in compliance with any of these standards were excluded:

- Rainforest Alliance Certified™/Sustainable Agriculture Network (SAN) Sustainable Agriculture Standard (SAN)
- UTZ Certified

While these two standards are sometimes considered as fair trade standards, critics and the standards-setting organizations themselves have clarified that they are not fair-trade standards.

In 2012, the German magazine Ökotest published an article 'Fairer Handel. Unfaire Geschäfte' (Fair Trade: Unfair Businesses), determining which standards/labels should be considered 'fair' and which 'unfair'. Because the article was somewhat critical of both 'Rainforest Alliance Certified/SAN' and 'UTZ Certified', the organizations published a joint response that included the following clarifying statement: 'Finally, the 4C Association, the Rainforest Alliance/SAN and UTZ Certified would like to state that they do NOT consider their standards to be fair trade, neither do they claim to be fair trade.'⁵

The Fair World Project™ has also summarized why Rainforest Alliance Certified™ is not a fair trade label: 'It is lacking several key components of fair-trade programmes including trade standards. There are no requirements for buyers to pay minimum or fairly negotiated prices, develop long-term relationships, or offer financing. Participating farmers are not organized democratically and are not offered a fair-trade premium for community development projects. It is a programme focused solely on management of on-farm environmental resources with some social standards for workers on farms.'⁶

⁵ UTZ Certified (2012), Joint response to Ökotest, 8 July 2012. Available from <https://www.utzcertified.org/en/newsroom/utz-in-the-news/26582670-2012-08-07-15-30-40>. Accessed 12 June 2014.

⁶ Fair World Project™ (2013). Rainforest Alliance Is Not Fair Trade, 16 March 2013. Available from <http://fairworldproject.org/blogs/rainforest-alliance-is-not-fair-trade/>. Accessed 10 June 2014.

Chapter 2 Export trade data

This section quantifies total global export volumes (kg) and values (US\$) for selected MAPs, plant products, algae and fungi, including extracts and oils obtained from the plants, compared with total volumes and values from China (mainland China). The totals provided in this report have been obtained from governmental and international governmental trade databases.

It is important to note that the trade databases do not differentiate or segregate the portions traded that originate from wild-collection vs. cultivation. And, indeed, many Chinese MAPs come to market from both cultivated and wild-collected sources. China Trade Data includes only one tariff code that suggests the materials included would be wild-collected. For example, CCCCS HS 33013090 is defined as 'other resinoids including other resinoids of plants of endangered or threatened species'. It is not entirely clear whether this HS code includes other resinoids of only wild-collected endangered or threatened species, or whether it would also include such species even if produced under cultivation.

Some limitations: At this time of this study, export trade data for a few countries were not yet reported or available for calendar year 2013 including, for example, the Bolivarian Republic of Venezuela, Nigeria, the Islamic Republic of Iran, Iraq, Viet Nam, Kuwait, Qatar and United Arab Emirates. Thus, the reported world totals lack data from these countries.

Using export trade data from an earlier year does not fill the gap, because historically, not all countries report their data. UN Comtrade explains this limitation as follows:

Countries (or areas) do not necessarily report their trade statistics for each and every year. This means that aggregations of data into groups of countries may involve countries with no reported data for a specific year. UN Comtrade does not contain estimates for missing data. Therefore, trade of a country group could be understated due to unavailability of some country data.

Additionally, some countries disclosed only a total customs value for certain items, and not the corresponding quantities exported. This was the case for a few goods exported, for example, by Sri Lanka, Greece, Malaysia, Finland and Israel. Thus, while the export trade data presented here includes most 2013 exports from most countries, it cannot capture all global export trade for the selected categories due to non-reporting by certain countries and/or for certain items.

Totals for specific items or categories in the databases used – UN Comtrade and China Trade Data – do not always match. This is because of differences in specificity. For instance, an article with a species-specific HS code assigned in the China Trade Data database may be absent in the UN Comtrade database and lumped together in a general grouping that may not match all of the articles defined in the national trade statistics.

Finally, while re-exports of herbal raw materials were excluded from the analysis to avoid duplication, exports of value-added ingredients (e.g. extracts) that are made from imported raw materials cannot be separated out. For example, China extract manufacturers could conceivably import certain herbal raw materials from neighbouring Bhutan, Nepal or Myanmar, then manufacture standardized herbal extracts in China for export to Japan. These extracts would count as Chinese exports, even though the initial materials of herbal origin would also be exports of their country of origin.

Table 4 provides total global export value and volume (from UN Comtrade data) for selected MAP ingredients, the portion of each line item and the total represented by China. Tables 5 and 6 offer more specificity on China's 2013 exports of MAP ingredients using the China Trade Data database.

For the selected MAP articles, according to UN Comtrade data, in 2013:

- China exported about 1,302,441,347 kg with a reported customs value of US\$ 5,094,223,058. Note: In an earlier study carried out using comparable inclusion criteria, in 2010, China exported about 1,244,347,034 kg with a reported customs value of US\$ 3,753,822,663 (Brinckmann, 2011). The 2013 export volume is 4.7% greater than the 2010 volume, while the 2013 value is 35.7% greater than the 2010 value.

- China's 2013 MAP export value of US\$ 5,094,223,058 amounted to about 15.6% of the total global export value of US\$ 32,630,922,221 for the selected articles. Note: In the 2010 study, the total global export value was shown to be nearly the same, at US\$ 32,702,904,493, with China's share amounting to about 11.5%.

However, using the more specific China Trade Data database for the included MAP articles, in 2013:

- China exported about 1,342,456,258 kg with a reported customs value of US \$5,404,640,028.

Points to consider:

- Because certain countries reported only the customs values (US\$) of their exports without revealing the corresponding quantities (kg), it is only useful to calculate China's percentage of the total world MAP exports in terms of the reported customs value.
- Concerning subsector analysis for following how and where MAP articles are used in finished products, many MAPs have commercial uses in all sectors (beverage, cosmetic, dietary supplement, food and medicine.) This makes it difficult to determine what proportion of the exports ultimately go to which sector. In many cases, the importer/distributor in the destination market will resell the MAP item to various customers in several different sectors, which makes it impossible to quantify use by sector. A single MAP article is often used in all of the sectors, but only differentiated by the end-product labelling. For example, in the European Union, wild liquorice root (and extracts made from it) is used in alcoholic and non-alcoholic beverages, cosmetics, foods, food supplements, as an active ingredient of registered medicinal products, and as a component of tobacco products.

China's main trade partners

In general, China's main trade partners for its top exported MAP articles (under HS code chapters 0902, 1302, 0910, 1211 and 121299) are a few Asian countries or regions (e.g. Japan, Hong Kong, Malaysia, Bangladesh, India, Republic of Korea and Viet Nam) and a few western countries (e.g. Germany, the Netherlands, United Kingdom and United States).

It is important to note that some mainland China exports to Hong Kong SAR are later exported by Hong Kong companies. However, in terms of reported value, more than half of Hong Kong's imports of medicinal plants (classified in HS1211) come from just five countries, much of this presumably for re-export into mainland China. Hong Kong's top five suppliers of HS1211 in terms of value are Canada, mainland China, United States, Republic of Korea and 'Other Asia' not elsewhere specified (nes). In terms of volume, more than 93% of Hong Kong's HS1211 imports come from just two countries – mainland China and Canada. The Hong Kong SAR Census and Statistics Division does not make detailed export trade data available publicly. On a case-by-case basis, individuals may submit request forms for access to certain trade data and then wait for a response. Furthermore, in the UN Comtrade database, Hong Kong SAR does not disclose export trade quantities for all product categories, although reported customs values are available. To get a general idea of where Hong Kong's MAP exports are mainly destined, more than 95% of Hong Kong's reported 2013 export value of MAPs classified within general tariff code HS1211 went to just 10 regions or countries, namely: (1) 'Other Asia' not elsewhere specified (nes), (2) Singapore, (3) United States, (4) mainland China, (5) Canada, (6) Macau SAR of China, (7) Viet Nam, (8) Japan, (9) Malaysia and (10) Australia.

The top five destinations for mainland China's top five (general) MAP export categories are:

- **HS 0902** (e.g. cultivated tea leaf): Hong Kong SAR, United States, Japan, Republic of Korea and Germany;
- **HS 1302** (e.g. herbal extracts made from both cultivated and wild-collected plants): United States, Japan, Republic of Korea, Germany and India;
- **HS 0910** (e.g. Chinese cassia bark, Chinese star anise fruit, ginger rhizome, wild turmeric rhizome): the Netherlands, Japan, United States, Malaysia and Bangladesh;

- **HS 1211** (e.g. most medicinal plants; cultivated and wild-collected): Hong Kong SAR, Japan, Republic of Korea, Viet Nam and Malaysia;
- **HS 121299** (e.g. wild bitter apricot kernel, sacred lotus seed, pumpkin seed): Germany, United States, the Netherlands, Hong Kong SAR and United Kingdom.

Of these top five MAP export categories, the most relevant in consideration of wild-collected materials are HS 1211 and, correspondingly, HS 1302. Extracts made from wild MAP articles become classified under HS 1302 after the raw materials are processed and value-added into extracts. However, some wild-collected MAP articles are also included in the above referenced HS code chapters 0910 and 121299.

The annual volume of China's MAP exports coded under HS 1211 has been about the same for the past five years, though the annual trade value has steadily increased during same period (Source: UN Comtrade). It has been widely reported in the trade press that market prices of Chinese MAPs have climbed significantly in recent years, and these data appear to show that trend:

2009 China exports of HS 1211: **200,017,685 kg** / US\$ 476,773,476

2010 China exports of HS 1211: **227,037,715 kg** / US\$ 625,130,308

2011 China exports of HS 1211: **199,140,378 kg** / US\$ 736,896,225

2012 China exports of HS 1211: **200,313,170 kg** / US\$ 844,755,609

2013 China exports of HS 1211: **201,788,236 kg** / US\$ 1,196,641,210

Export quantities listed under HS 1302 represent a much larger amount of harvested raw material than quantities exported under HS 1211. For example, if an extract made from wild-collected roots of dang gui (*Angelica sinensis*) has a concentration-ratio (also known as drug-to-extract ratio or DER) of 7 to 1 (7:1 w/w), this means that 7 kg of dried dang gui root were needed to manufacture 1 kg of extract.

The situation is similar for MAP articles that will be used for the manufacture of essential oils classified in HS 3301 because a significant amount of starting material is needed to distill a very small quantity of oil. For example, Chinese cassia (*Cinnamomum aromaticum*) bark contains about 1.5% essential oil, a difference of about 67 times between the weight of the starting material (the inner bark) and the weight of processed ingredient (the essential oil).

1. China and World: 2013 total MAP export values and volumes

Table 4 shows that in 2013, mainland China exported about 1,302,441,347 kg of the selected MAP articles with a reported customs value of US\$ 5,094,223,058, or about 15.6% of the total global export value of US\$ 32,630,922,221.

Particularly noteworthy is the fact that China has an approximately 41.7% share of global HS 1211 exports in terms of reported value. Although it is not possible to quantify the proportion that is obtained from wild collection vs. cultivation, it is known that hundreds of Chinese MAP species are wild-collected either entirely or partially. Most species do not have a unique tariff code identifier and thus are lumped together in the export trade data. Another confounding factor is the fact that Hong Kong SAR is among the leading destinations for mainland China MAP exports. While the total quantities being exported from mainland China are known, it is difficult to determine the ultimate final destinations for each MAP that first travels through Hong Kong SAR.

Table 4. 2013 Exports of Medicinal and Aromatic Plants, Extracts, Gums, Resins and Oils; China and World Total / Volume (kg) / Value (US\$)

HS Code	Description	China Volume (kg)	World Volume (kg)	China Value (US\$)	World Value (US\$)
	Total	1,302,441,347	12,970,192,886	5,094,223,058	32,630,922,221
0902	Tea leaf	325,806,269	1,413,449,007	1,246,307,778	5,609,792,376
1211	Medicinal plants (e.g. astragalus, cordyceps, danggui, ginkgo, ginseng, liquorice, rhubarb schisandra)	201,788,236	641,643,489	1,196,641,210	2,893,204,158
0903 through 0910	Aromatic plants (e.g. ajowan, amomum, capsicum, cinnamon, fennel, fenugreek, ginger, pepper, star anise, turmeric)	530,065,807	3,982,032,176	782,369,755	6,574,782,944
130219	All 'other' herbal extracts, nes	16,616,006	159,871,193	613,888,928	1,870,887,910
121299	Other HS 1212 (e.g. apricot kernel, kokum flower, pumpkin seed, sacred lotus seed)	122,101,491	277,258,891	445,367,246	627,416,330
3301	Essential oils, concretes, absolutes, resinoids, extracted oleoresins, concentrates of essential oils	23,899,418	439,244,381	336,233,626	3,789,348,759
210120	Extracts, essences and concentrates, of tea leaf or maté leaf	9,611,894	349,943,841	94,315,960	1,301,233,516
121221	Edible or medicinal seaweeds and other algae (e.g. kelp, laver, sargassum, spirulina)	14,185,080	245,177,417	70,794,064	399,466,164
130231	Agar	4,487,652	11,078,211	69,064,912	221,489,882
120770	Watermelon seed	16,104,178	18,745,379	53,626,947	167,555,052
130212	Liquorice root extract	6,653,314	19,522,663	45,226,186	173,376,749
140490	Vegetable materials NESOI – 'other' (e.g. amla, annatto, henna, luffa, quebracho, quillaja, sandalwood, soapberry seed, wattle bark)	9,498,617	1,035,409,816	30,291,757	394,111,470
130232	Guar gum and/or locust (carob) bean gum	2,204,918	750,070,982	25,131,137	3,305,751,429
130190	Other natural gums, resins (e.g. asafoetida, benzoin, copal, dammar, dragon's blood, frankincense, tragacanth, karaya, mastic, myrrh, turpentine)	1,063,513	150,137,378	13,359,967	370,582,110
1204	Flaxseed (linseed)	3,717,622	1,304,934,084	6,102,776	908,575,331
3201	Tanning extracts of botanical origin (e.g. gambier twig extract, quebracho wood extract, wattle bark extract)	648,581	179,832,310	4,018,939	341,442,197
151519	Flaxseed oil – other	983,951	67,221,255	3,933,884	107,636,666
210130	Roasted chicory root (and other roasted coffee substitutes)	2,283,667	42,683,441	2,396,434	132,912,699
130213	Hop strobile extract	34,029	39,173,839	500,006	321,973,446
1210	Hop strobile	29,270	36,807,876	148,550	327,945,364

HS Code	Description	China Volume (kg)	World Volume (kg)	China Value (US\$)	World Value (US\$)
130120	Acacia tree gum	22,079	51,254,356	108,217	192,354,956
151530	Castor seed oil	37,730	696,463,756	102,875	886,217,188
120750	Mustard seed	33,244	257,791,275	79,564	248,919,925
120730	Castor seed	3,616	11,977,635	49,120	10,505,225
080280	Betelnut palm seed	5,020	291,058,012	29,343	232,083,607
400130	Balata, gutta-percha, guayule, chicle and similar natural gums	160	2,785,942	3,685	13,868,786
121292	Locust (carob) bean	0	28,983,289	0	15,327,196
121294	Unroasted chicory root	0	3,448,076	0	3,730,527

Source: United Nations Commodity Trade Statistics Database (UN Comtrade)

2. China Trade Data: 2013 Chinese MAP export values and volumes by item

Using the China Trade Data (CTD) database, table 6 shows that China's top 10 MAP exports in 2013 amounted to a reported customs value of US\$ 3,635,626,917. That is about 67.3% of the total exported value of US\$ 5,404,622,875 for the selected articles included in this analysis.

While most of the top 10 items listed in table 6 originate from cultivation (e.g. Asian ginseng root, capsicum fruit, ginger rhizome and tea leaf), line items 2 (HS 13021990; 'other' herbal extracts) and 4 (HS 12119039; 'other' medicinal plants) each include a significant number of wild-collected MAPs not elsewhere specified or included (NESOI). It is not possible, however, to estimate the proportion of wild-collected vs. cultivated within those two general tariff codes. These two 'other' categories, 'other herbal extracts' and 'other medicinal plants', together comprise a reported customs value of US\$ 933,965,663, or about 17.3% of China's total value for exported MAPs in 2013. Some wild-collected MAPs are included within the general 'other' categories.



Capsicum fruit, a South American species, is one of the major medicinal and aromatic plant exports of China (© Flickr / Harvey Barrison)

In which general tariff codes are wild-collected MAPs found?

A significant number of wild-collected Chinese MAP materials lack species-specific tariff codes, so quantification of export trade is not possible. This includes, for example certain TCM wild medicinal fruits (e.g. seabuckthorn berry) coded in HS 0813, TCM seaweeds (e.g. sargassum) in HS 1212, TCM natural gums and resins (e.g. dragon's blood) in HS 1301, TCM plant parts that are also used as natural colorants (e.g. emblic leafflower fruit) in HS 1404, essential oils (e.g. litsea [mountain spicy fruit] oil) in HS 3301 and 'other resinoids including other resinoids of plants of endangered or threatened species' in HS 33013090.

While the CTD is indeed more specific than the UN Comtrade database, i.e. it provides species-specific export trade data for many of China's important and/or highest value MAP species, the rest are still lumped into general or 'other' HS codes:

- **HS 08134090:** other dried fruit NESOI (including fruits used in TCM)
- **HS 09109900:** other spices NESOI (including spices used medicinally)
- **HS 12119039:** other medicinal (pharmacy) plants NESOI
- **HS 12119050:** other aromatic (perfumery) plants NESOI
- **HS 12119099:** other insecticidal plants NESOI
- **HS 13019090:** other natural gums, resins, gum-resins, oleoresins, balsams NESOI
- **HS 13021990:** other herbal extracts NESOI
- **HS 13023919:** other mucilages and thickeners derived from seaweeds and other algae NESOI
- **HS 13023990:** other mucilages and thickeners obtained from plants NESOI
- **HS 14049010/90:** other raw plant materials of a kind used primarily in dyeing or tanning NESOI
- **HS 15159090:** other fixed oils of plant origin NESOI
- **HS 32019010:** other tanning (dyeing) extracts of plant origin NESOI
- **HS 33012999:** other essential oils NESOI
- **HS 33013090:** other resinoids including other resinoids of plants of endangered or threatened species
- **HS 33019090:** other aromatic oils, extractives and resins NESOI

Medicinally and economically important wild-collected Chinese MAPs (and/or extracts, oils or resinoids obtained from them) without species-specific HS codes, and therefore counted within one of the above-listed general or 'other' categories include the following, among others:

- Bunge corydalis herb (*Corydalis bungeana*) – KU DI DING
- Chinese cardamom fruit (*Amomum kravanh*) – DOU KOU
- Chinese clematis root (*Clematis chinensis*, *C. hexapetala* and/or *C. manshurica*) – WEI LING XIAN
- Chinese dandelion herb and root (*Taraxacum sinicum*) – PU GONG YING
- Chinese greenbrier rhizome (*Smilax china*) – BA QIA
- Chinese motherwort herb (*Leonurus japonicus*) – YI MU CAO
- Chinese mugwort leaf (*Artemisia argyi*) – AI YE
- Dogbane leaf (*Apocynum venetum*) – LUO BU MAYE
- Drynaria rhizome (*Drynaria fortunei*) – GU SUI BU
- Eleuthero root and rhizome (*Eleutherococcus senticosus*) – CI WU JIA
- Glabrous sarcandra herb (*Sarcandra glabra*) – ZHONG JIE FENG
- Gotu kola herb (*Centella asiatica*) JI XUE CAO

- Isatis root (*Isatis indigotica*) - BAN LAN GEN
- Japanese climbing fern spore (*Lygodium japonicum*) – HAI JIN SHA
- Japanese honeysuckle flower bud (*Lonicera japonica*) – JIN YIN HUA
- Knotweed herb (*Polygonum aviculare*) – BIAN XU
- Kudzu root (*Pueraria montana*) – GE GEN
- Mongolian dandelion herb and root (*Taraxacum mongolicum*) – PU GONG YING
- Notopterygium root & rhizome (*Notopterygium incisum*) – QIANG HUO
- Ostericum root (*Ostericum grosseserratum*) - DA CHI SHAN QIN
- Polygonatum rhizome (*Polygonatum cyrtoneura*) – HUANG JING
- Pubescent angelica root (*Angelica pubescens*) - DU HUO
- Pyrrosia leaf (*Pyrrosia lingua*, *P. petiolosa* and/or *P. shearerii*) – SHI WEI
- Schisandra fruit, northern (*Schisandra chinensis*) – BEI WU WEI ZI
- Schisandra fruit, southern (*Schisandra sphenanthera*) – NAN WU WEI ZI
- Simple-leaf chaste tree fruit (*Vitex trifolia*) – MAN JING ZI
- Spatholobus stem (*Spatholobus suberectus*) – JI XUE TENG
- Thin-leaf polygala root (*Polygala tenuifolia*) – YUAN ZHI
- Tribulus fruit (*Tribulus terrestris*) - JI LI
- Yin-chen wormwood herb (*Artemisia capillaris* and/or *A. scoparia*) – YIN CHEN

Estimated quantity and value of wild-collected Chinese MAPs

Precise quantification of China's export volume and value of wild-collected MAPs is not possible due to lack of differentiation and specificity in the tariff codes used for analysis (especially general codes that may hold hundreds of species). However, determinations were made in table 6 (see column 6) as to whether the listed MAP is primarily wild-collected (W), cultivated (C), cultivated and also some wild collection (C/W), wild-collected and also some cultivation (W/C), or not known (?).

These classifications were made, in part, based on the MAP production and trade knowledge of the author of this report, as well as internal project data provided by TRAFFIC and, in part, based on additional desk research in current literature concerning the occurrence, production and trade of each species in the listed country. Additional information was obtained from websites of producers and/or their distributors. Using these classifications, table 5 provides a brief summary of what can be extrapolated from the 2013 export trade data of table 6 for a rough estimate:

Table 5. Data excerpt: summary of wild-collection status

	kg	US(\$)
C	1,086,138,364	3,409,355,209
W/C	171,777,258	1,453,192,877
C/W	54,299,824	314,006,933
?	21,805,367	142,335,767
W	8,435,445	85,749,242
Total:	1,342,456,258	5,404,640,028

Source: Author's elaboration based on data presented in table 6

It is not possible to assign a percentage of wild-collected volume or (kg) value (US\$) within the respective W/C and C/W categories. Each species, out of hundreds of species that may be included in the general 'other' tariff codes, would have its own proportion of W to C and thus not generalizable to the total exported quantity.

Table 6 2013 China Exports of Medicinal and Aromatic Plants and Extracts / HS Code / Commodity Description / Botanical Name(s) / Volume (kg) of China exports / Value (US\$) of China exports / Wild collected (W) or Cultivated (C)

HS Code	Description	Botanical Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
	Total		1,342,456,258	5,404,640,028	
0902	Tea leaf	<i>Camellia sinensis</i>	325,806,269	1,246,307,778	C
13021990	Other herbal extracts	Various species	16,328,367	589,562,095	W/C
09101100 09101200	Ginger rhizome	<i>Zingiber officinale</i>	379,918,253	399,614,981	C
12119039	Other medicinal (pharmacy) plants NESOI	Various species	75,412,194	344,403,568	W/C
12129993	Pumpkin seed	<i>Cucurbita pepo</i>	93,797,545	304,430,947	C
09042100 09042200	Capsicum fruit and/or Allspice fruit	<i>Capsicum annuum</i> and/or <i>Pimenta dioica</i>	96,535,184	249,493,277	C
13023912	Algin (alginic acid)	<i>Laminaria japonica</i>	24,732,669	183,578,565	C
12112099	Asian ginseng root, dried	<i>Panax ginseng</i>	1,884,854	120,753,809	C
33012960	Eucalyptus leaf essential oil	<i>Eucalyptus globulus</i>	9,784,768	102,378,120	C
13023911	Carrageenan	<i>Betaphycus gelatinus</i> (syn.: <i>Eucheuma gelatinae</i>)	11,364,764	95,103,777	W/C
21012000	Extracts, essences and concentrates of tea leaf	<i>Camellia sinensis</i>	9,611,734	94,315,795	C
12119031	Barbary wolfberry fruit (goji)	<i>Lycium barbarum</i>	9,304,774	80,442,367	W/C
12119026	Rehmannia root tuber	<i>Rehmannia glutinosa</i>	17,713,118	78,400,121	C
12119012	Tienchi ginseng root (sanqi)	<i>Panax pseudoginseng</i>	5,582,007	73,857,677	C
13023100	Agar alga (mucilage extract of)	<i>Gelidium amansii</i> , <i>G. elegans</i> , and other related red algae	4,487,514	69,064,756	W/C
09061900 09062000	Chinese cinnamon bark	<i>Cinnamomum cassia</i>	37,903,617	64,574,320	C
12119025	Bai-zhu atractylodes rhizome	<i>Atractylodes macrocephala</i>	16,511,858	64,171,244	C
13023990	Other mucilages and thickeners obtained from plants	Various species	4,643,064	56,873,668	?
12119029	Poria sclerotium	<i>Poria cocos</i>	13,525,888	56,452,325	W/C
12119013	Codonopsis root	<i>Codonopsis pilosula</i> , <i>C. pilosula</i> var. <i>modesta</i> , and/or <i>C. tangshen</i>	5,671,299	53,247,097	C/W

HS Code	Description	Botanical Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
12119015	Chrysanthemum flower and/or Wild chrysanthemum flower	<i>Chrysanthemum morifolium</i> and/or <i>C. indicum</i>	7,667,341	49,823,378	C/W
12119028	Eucommia stem bark	<i>Eucommia ulmoides</i>	9,257,506	47,283,242	C
33012999	Other essential oils NESOI	Various species	2,285,921	46,674,370	C/W
13021200	Chinese liquorice root extract	<i>Glycyrrhiza inflata</i> , <i>G. uralensis</i> and/or <i>G. glabra</i>	6,653,261	45,226,139	W/C
33011300	Lemon peel essential oil	<i>Citrus x limon</i>	3,340,774	45,022,354	C
12119018	Chinese lovage rhizome	<i>Ligusticum jeholense</i> and/or <i>L. sinense</i>	9,661,622	37,210,467	W/C
33013090	Other resinoids including other resinoids of plants of endangered or threatened species	Various species	3,679,278	36,999,439	W
12119021	Chinese peony root	<i>Paeonia lactiflora</i>	8,027,082	34,706,594	C
12122141 12122142 12122149	Laver thallus (nori)	<i>Porphyra haitanensis</i> and/or <i>P. yezoensis</i>	2,081,194	34,181,429	C
12129994	Sacred lotus seed	<i>Nelumbo nucifera</i>	4,012,703	30,615,086	C
13022000	Pectic substances, pectinates	<i>Citrus</i> and/or <i>Malus</i> species	3,009,972	27,412,958	C
13023200	Guar seed mucilage (guar gum)	<i>Cyamopsis tetragonoloba</i>	2,204,832	25,131,041	C
12119036	Chinese liquorice root	<i>Glycyrrhiza uralensis</i> , <i>G. inflata</i> and/or <i>G. glabra</i>	3,344,929	25,029,191	W/C
08134030	Chinese red jujube date	<i>Ziziphus jujuba</i>	7,783,486	24,637,414	C/W
33012500	Other mint herb essential oil	<i>Mentha crispata</i> , <i>M. haplocalyx</i> , <i>M. spicata</i>	966,189	23,912,396	C
13021940	Ginkgo leaf extract	<i>Ginkgo biloba</i>	275,959	23,276,821	C/W
12119011	Chinese angelica root (danggui)	<i>Angelica sinensis</i>	2,630,720	22,585,165	W/C
12077092	Red watermelon seed	<i>Citrullus lanatus</i>	9,803,953	22,394,789	C
12119019	Pinellia rhizome	<i>Pinellia ternata</i>	1,221,132	22,269,897	W/C
12119023	Astragalus root	<i>Astragalus membranaceus</i> and/or <i>A. membranaceus</i> var. <i>mongholicus</i>	3,939,973	21,365,744	C/W
13023919	Other mucilages and thickeners derived from seaweeds and other algae	Various species	3,656,283	20,991,914	W/C
09109900	'Other' spices NESOI	Various species	2,675,638	20,283,901	C/W
12122110	Kelp or Tangle	<i>Ecklonia kurome</i> and/or <i>Laminaria japonica</i>	5,743,149	19,433,618	C/W
33012940	Chinese cinnamon branch and leaf essential oil	<i>Cinnamomum cassia</i>	462,701	19,402,155	C
33012920	Citronella aerial parts essential oil	<i>Cymbopogon nardus</i> and/or <i>C. winterianus</i>	983,526	16,572,650	C
09096110 09096210	Chinese star anise fruit	<i>Illicium verum</i>	4,703,412	15,898,445	C/W
12077091	Black watermelon seed	<i>Citrullus lanatus</i>	6,035,112	15,315,996	C
09041100 09041200	Pepper fruit	<i>Piper nigrum</i>	1,605,159	15,178,577	C
12129911	Apricot kernel, bitter	<i>Prunus armeniaca</i>	2,227,143	14,883,642	W
12112010	American ginseng root (Chinese-grown)	<i>Panax quinquefolius</i>	466,990	13,703,595	C
33012930	Chinese star anise fruit essential oil	<i>Illicium verum</i>	839,977	12,370,372	C/W
15159030	Tung seed oil	<i>Vernicia fordii</i> (syn.: <i>Aleurites fordii</i>)	6,151,632	12,273,912	C/W
12119016	Cordyceps fungus	<i>Cordyceps sinensis</i>	405	10,488,879	W

HS Code	Description	Botanical Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
33012991	Geranium leaf essential oil	<i>Pelargonium graveolens</i>	68,293	8,472,923	C
12119050	Other aromatic (perfumery) plants NESOI	Various species	3,597,426	7,822,639	W/C
33019010	Extracted oleoresins	Various species	376,938	7,715,026	C
12119024	Chinese rhubarb root & rhizome	<i>Rheum officinale</i> , <i>R. palmatum</i> , and/or <i>R. tanguticum</i>	1,777,431	7,698,808	W/C
33011200	Sweet orange peel essential oil	<i>Citrus sinensis</i>	471,424	6,823,560	C
33012950	Litsea fruit essential oil	<i>Litsea cubeba</i>	336,763	6,331,830	W/C
12040000	Flax seed (linseed)	<i>Linum usitatissimum</i>	3,749,263	6,142,967	C
09096190 09096290	Fennel fruit and/or anise fruit and/or caraway fruit	<i>Foeniculum vulgare</i> and/or <i>Pimpinella anisum</i> and/or <i>Carum carvi</i>	2,633,252	5,632,189	C
12119037	Chinese skullcap root	<i>Scutellaria baicalensis</i>	902,889	4,845,207	W/C
08029020	Ginkgo nut (seed)	<i>Ginkgo biloba</i>	4,895,466	4,393,173	C/W
12129919	Apricot kernel, other	<i>Prunus armeniaca</i>	207,781	4,391,348	W
12119014	Coptis rhizome	<i>Coptis chinensis</i> , <i>C. deltoidea</i> , <i>C. teeta</i> , <i>C. teetoides</i>	313,466	4,378,664	C/W
12119099	Other insecticidal plants NESOI	Various species	1,399,703	3,763,002	?
12122171 12122179 12122190 12122900	Gracilaria thallus and/or Sargassum alga	<i>Gracilaria asiatica</i> , <i>G. lemaneiformis</i> , and/or <i>G. tenuistipitata</i> ; <i>Sargassum fusiforme</i> and/or <i>S. pallidum</i>	1,763,405	3,669,648	W/C
12119027	Japanese sophora flower bud	<i>Sophora japonica</i>	443,215	3,585,458	C
32019090	Other – Other tanning extracts of plant origin + other derivatives	Various species	191,975	3,141,859	?
12129912	Apricot kernel, sweet	<i>Prunus armeniaca</i>	940,143	2,892,477	?
12119017	Zhejiang fritillaria bulb	<i>Fritillaria thunbergii</i>	121,410	2,857,947	W
12119034	Adenophora root	<i>Adenophora axilliflora</i> (syn.: <i>A. stricta</i> subsp. <i>stricta</i>)	1,117,639	2,693,798	W
33019090	Other aromatic oils, extractives and resins	Various species	222,277	2,481,546	?
21013000	Chicory root, roasted	<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	2,283,654	2,396,419	C
09061100	Ceylon cinnamon bark	<i>Cinnamomum verum</i>	1,472,960	2,125,983	C
09109100	Spice mixtures	Various species	593,793	1,994,663	C/W
13021910	Chinese lacquer tree resin	<i>Toxicodendron vernicifluum</i>	36,174	1,695,077	C/W
09093100 09093200	Cumin seed	<i>Cuminum cyminum</i>	522,523	1,688,142	C
09081100 09081200	Nutmeg kernel	<i>Myristica fragrans</i>	25,113	1,077,326	C
09102000	Saffron style and stigma	<i>Crocus sativus</i>	35,414	1,068,910	C
09092100 09092200	Coriander fruit	<i>Coriandrum sativum</i>	473,028	943,499	C
33011990	Other Citrus fruit essential oil	<i>Citrus species</i>	26,649	652,847	C
13021300	Hop strobile extract	<i>Humulus lupulus</i>	34,003	499,982	C
32011000	Quebracho wood extract	<i>Aspidosperma quebracho-blanco</i>	266,644	477,479	
12119038	European linden flower and leaf	<i>Tilia europaea</i>	73,705	394,274	C
09071000 09072000	Clove flower bud	<i>Syzygium aromaticum</i>	31,146	289,604	C

HS Code	Description	Botanical Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
12119091	Derris roots and pyrethrum, used for insecticides	<i>Derris elliptica</i> , <i>D. trifoliata</i> , <i>Anacyclus pyrethrum</i> , <i>Chrysanthemum cinerariaefolium</i>	93,001	276,558	C
12112091	Asian ginseng root, fresh	<i>Panax ginseng</i>	12,745	253,981	C
32019010	Other tanning extracts of plant origin	Various species	102,911	238,064	?
33019020	Terpenic by-products of the terpenation of essential oils of citrus fruit	Various species	41,152	186,128	C
33012400	Peppermint herb essential oil	<i>Mentha x piperita</i>	4,754	180,874	C
32012000	Wattle bark extract	<i>Acacia mearnsii</i>	86,995	161,476	?
13019020	Dragon's blood, Olibanum, and/or Myrrh	<i>Daemonorops draco</i> , <i>Boswellia bhawdajiana</i> , <i>B. carteri</i> , or <i>Commiphora spp.</i>	31,015	159,027	W
12101000 12102000	Hop strobile	<i>Humulus lupulus</i>	29,267	148,545	C
13012000	Acacia gum	<i>Acacia spp.</i>	22,071	108,206	
15153000	Castor seed oil and fractions	<i>Ricinus communis</i>	37,721	102,867	C
12119032	Bantaro seed	<i>Sterculia lychnophora</i>	18,846	72,526	W
12073010	Castor seed	<i>Ricinus communis</i>	2,023	47,369	C
12075010	Chinese mustard seed and/or White mustard seed	<i>Brassica juncea</i> and/or <i>Sinapis alba</i>	8,587	35,941	C
33012910	Camphor branch and stem essential oil	<i>Cinnamomum camphora</i>	3,959	34,099	C
33013010	Balsam of irises	<i>Iris tectorum</i> and/or other <i>Iris</i> species	3,900	27,270	C/W
09030000	Maté leaf	<i>Ilex paraguariensis</i>	318	20,866	C
12079910	Cannabis fruit for TCM use	<i>Cannabis sativa</i>	14,025	17,153	C
33011910	Lime fruit or peel essential oil	<i>Citrus x aurantifolia</i>	359	16,220	C
12122161 12122169	Eucheuma seaweed	<i>Eucheuma cottonii</i> and/or <i>E. denticulatum</i>	3,299	11,880	C/W
40013000	Balata, gutta-percha, guayule, chicle and similar natural gums	Various species	159	3,684	W
13019040	Chinese red pine resin	<i>Pinus massoniana</i>	684	1,948	W/C
13021920	Azadirachtin (from neem seeds)	<i>Azadirachta indica</i>	0	0	C
12122120	Black moss	<i>Nostoc flagelliforme</i>	0	0	W
09083100 09083200	Cardamom seed and/or Chinese amomum fruit	<i>Elettaria cardamomum</i> and/or <i>Amomum villosum</i> or <i>A. longiligulare</i>	0	0	C
12129400	Chicory root, unroasted	<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	0	0	C
12119033	Chinese agarwood (aloes wood)	<i>Aquilaria sinensis</i>	0	0	W
13019030	Chinese Asafoetida oleo-gum-resin	<i>Ferula fukanensis</i> and/or <i>F. sinkiangensis</i>	0	0	W
13019010	Gum tragacanth	<i>Astragalus gummifer</i> or other Asiatic <i>Astragalus spp.</i>	0	0	?
09082100 09082200	Mace aril	<i>Myristica fragrans</i>	0	0	C
13021100	Opium exudate	<i>Papaver somniferum</i>	0	0	C
13021930	Pyrethrum or the roots of plants containing rotenone	Various species	0	0	?
09051000	Vanilla fruit	<i>Vanilla planifolia</i> and/or <i>V.</i>	0	0	C

HS Code	Description	Botanical Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
09052000		<i>tahitensis</i>			
12112020	Wild Asian ginseng root	<i>Panax ginseng</i>	0	0	W

Sources: (1) China Trade Data and (2) United Nations Statistics Division Comtrade Database

Exported TCM finished products containing wild-collected MAPs

Chinese medicinal products in measured doses and/or packaged for retail sale (finished consumer products) are excluded from table 6. Finished products are indeed a category where significant amounts of wild-collected MAPs may be present but not-necessarily quantifiable (or even listed).

Certain famous TCM products are marketed and exported without disclosure of the ingredients. For example, the ingredients of 'Baiyao', manufactured and marketed by state-owned Yunnan Baiyao Group Co. Ltd., are protected as a national-level secret recipe. In recent years, some of the ingredients of Baiyao have leaked out and can be found on various websites. Exports of Baiyao products in 2013 are



Artemisia annua produces anti-malaria prescription drug artemisinin
(© Flickr / Jesse Christopherson)

included in table 7, with a list of ingredients that may be part of various Baiyao formulations, including certain wild-collected plants such as Chinese hellebore (*Veratrum taliense*) root and rhizome, 'da hua xuan shuo ju tai' (*Boea clarkeana*) whole plant, ground-cedar (*Lycopodium complanatum*) rhizome and paris (*Paris polyphylla*) rhizome, among possibly other wild-collected herbal materials.

Table 7 shows China's 2013 export value and volume of finished products listed in the HS code chapter 3004. HS 3004 includes, for example, the anti-malaria prescription drug artemisinin that is extracted from the Chinese medicinal plant *Artemisia annua*, and 'essential balm' topical application herbal products (e.g. Tiger Balm) as well as Chinese patent medicines that contain powders or extracts of medicinal plants but may also contain some animal products (secretions) or animal parts and minerals.

Table 7. 2013 China exports of TCM finished products in measured doses or packed for retail sale

HS Code	Description	Botanical and Zoological Name(s)	China 2013 Volume (kg)	China 2013 Value (US\$)	W/C
	Total		15,811,449	349,417,604	
30049059	Other TCM products	<i>Various species</i>	7,673,244	179,741,207	W/C
30049060	Artemisinin (anti-malaria) drugs	<i>Artemisia annua</i>	1,579,757	79,601,924	C/W
30049052	Pien Tze Huang	<i>Panax notoginseng</i> (root), <i>Moschus</i> spp. (secretion of the musk sac), <i>Bos taurus domesticus</i> (gallstone), snake's gall	3,098	40,798,218	W/C
30049054	Essential Balm	<i>Menthol</i> , <i>Camphor</i> , <i>Mint essential oil</i> , <i>eucalyptus essential oil</i> , <i>clove flower bud essential oil</i> , <i>Chinese cinnamon essential oil</i> ,	5,884,660	34,806,642	C/W
30049055	An Gong Nui Huang Wan	<i>Bos taurus domesticus</i> (gallstone), <i>Bubalus bubalis</i> (horn), <i>Moschus</i> spp. (secretion of the musk sac), <i>Pteria martensii</i> or <i>Cristaria plicata</i> (pearl), <i>cinnabar</i> , <i>realgar</i> , <i>coptis rhizome</i> , <i>Chinese skullcap root</i> , <i>gardenia fruit</i> , <i>curcuma root</i> , <i>borneol</i>	5,976	7,464,768	W/C
30049053	Baiyao	<i>Panax notoginseng</i> (root), <i>Dryobalanops aromatica</i> (crystal), <i>Boea clarkeana</i> (whole plant), <i>Inula cappa</i> (root), <i>Lycopodium complanatum</i> (rhizome), <i>Dioscorea opposita</i> (rhizome), <i>Alpinia officinarum</i> (rhizome), <i>Erodium stephanianum</i> (aerial parts), <i>Cinnamomum camphora</i> (crystal extractive), <i>Mentha haplocalyx</i> (leaf)	54,932	4,262,889	W/C
30049051	TCM medicated wines	<i>Various species</i>	609,782	2,741,956	W/C

Source: China Trade Data (CTD) TradeSTAT Database

While China remains the leading global exporter of MAPs, exported quantities of MAPs grouped in certain tariff codes such as HS 1211 have remained fairly consistent over the past five years. HS 1211 exports in 2009 were about 200 million kg, rising to about 201.7 million kg in 2013.

To be expected, the leading importers of China's medicinal plants (including wild-collected medicinal plants) are mainly Asian countries or regions that use the same species in their systems of medicine, namely Hong Kong SAR, Japan, Republic of Korea, Viet Nam and Malaysia. Although it would be difficult to quantify – due to the large number of herbal medicinal product manufacturing and trading companies operating in these countries – and given the fact that significant numbers of finished herbal medicinal products (containing Chinese herbs) indeed have marketing authorization for sale in these countries, it is reasonable to suggest that most MAP imports are being used in-country rather than being re-exported.

Additionally, some of the main import partners for Chinese MAPs that are used in beverages, dietary supplements or food products include mainly European and American countries, namely Germany, the Netherlands, the United Kingdom and the United States.



Herbarium samples of Houpu Magnolia (*Magnolia officinalis*) bark at a TCM manufacturing company (© A. Timoshyna / TRAFFIC)

Chapter 3 Standards developed for the management of MAP wild collection

1 Background

The previous chapter has shown that while precise quantification of exported quantities of wild-collected MAPs is not possible through the available import-export trade databases, it is possible to identify and describe many of the important wild-collected MAP exports that are classified either under their own unique tariff code, within a general 'other' tariff code or as a component of a TCM finished product that has a unique tariff code.

Chapter 3 will explore the applicability of certain regulatory (governmental) and private voluntary sustainability standards (VSS) that were developed in consideration of managing wild-collection, specifically the FWF FairWild Standard, SFDA Good Agricultural Practice (GAP) for Chinese Crude Drugs, UEBT Ethical BioTrade Standard and USDA Organic Wild-crop Harvesting Practice Standard. Other standards that were developed primarily in consideration of cultivated crops, even if they are occasionally applied to wild crops, are discussed in chapter 4.

The USDA Organic Wild-crop standard is included in this section (as opposed to discussing organic standards of the European Union or Japan) only to provide a useful example. There is no need to discuss other national organic standards mainly because, for example, the USDA National Organic Program (NOP) has an equivalency agreement with the Canada Organic Regime (COR), the European Union organic standards and the Japanese Agricultural Standard (JAS). Furthermore, the USDA has elaborated more specific guidance for management and certification of organic wild-crops than the other national authorities. Finally, the United States is the world's top market for certified organic goods.

Two of the standards discussed in this chapter are governmental (SFDA and USDA regulations) and two are private (FWF and UEBT). According to United Nations Forum on Sustainability Standards (UNFSS), VSS specify requirements that producers, traders, manufacturers, retailers or service providers may be asked to meet, relating to a wide range of sustainability metrics, including respect for basic human rights, worker health and safety, the environmental impacts of production, community relations, land use planning and others.

2 Voluntary Sustainability Standards

VSS not only fill in the gaps in regulations such as in the SFDA GAPs and USDA organic wild regulations, but also provide producers with value-addition opportunities that can give them a competitive edge in the global market, lead to long-term reliable trade relationships with international ethical and fair trade buyers, and strengthen their economic viability.

In this regard, some of the key findings of a 2014 report that was developed within the framework of the 'EU-China EGP-MAPs project' were:⁷

- Combinations of legal frameworks, quality/safety management systems, and voluntary sustainability standards form a strong approach to enhancing company sustainability and long-term competitiveness.
- Opportunities exist for increasing consumer recognition of sustainable TCM practices through the use of credible standards and labels.
- International standards or internationally recognized Chinese standards covering the cultivation of TCM or MAPs-related ingredients do not offer as much coverage as standards directly focused on wild-collected plants such as FairWild.'

⁷ Xusheng W., Wickerham J. A Review and Comparison of Relevant Medicinal Plant-Related Standards and Policies in China and Internationally. Project Consultancy Report. 31 March 2014.

2.1 Governmental Standards: GACP and Organic Wild

China has developed its own national Good Agriculture Practice (GAP) standards specifically for the cultivation or wild collection of Chinese medicinal plants, also referred to as Chinese crude drugs. Because China's GAPs specifically discuss wild collection within their scope, the title of the standard should really be 'Good Agriculture and Collection Practice' (GACP). China also permits the implementation of certain international organic standards including the USDA NOP Wild-crop Harvesting Practice Standard and comparable or equivalent organic standards of other countries. The NOP has an equivalency agreement with COR, the European Union organic standards and JAS. China's own national organic regulation is relevant only for the domestic market. Exports must be certified according to a standard recognized in the destination country. There are no equivalency agreements with the Chinese organic standard.

Implementation of GACPs or organic wild-crop standards, however, does not necessarily assure effective resource management, biodiversity conservation, sustainable harvest, equitable trade and use of wild species. While China's GACPs require that collection of wild and semi-wild medicinal plants should conform to the principle of 'maximum sustainable yield', they do not provide a MAP collection operation with specific guidance or procedures on how exactly to meet this sustainability requirement.

The organic wild-crop standards require that a wild crop must be harvested in a manner that ensures that such harvesting or gathering will not harm the environment and will sustain the growth and production of the wild crop. However, this is again a mandate with very little guidance provided for the wild harvesting operation on how exactly to demonstrate conformity with the regulation. The FairWild Standard was developed to fill in the gaps left by GACP and organic standards.

2.2 FairWild Foundation (FWF) FairWild Standard (FWS)

The Fair Wild Foundation (FWF) (<http://www.fairwild.org/>), a non-profit foundation based in Switzerland, promotes the sustainable use of wild-collected ingredients, with a fair deal for all those involved throughout the supply chain. The FWF promotes the FairWild Standard (FWS) and certification system for the sustainable management and collection of wild plants (FWF, 2010)

The FWS Version 2.0 is composed of 11 principles and 29 criteria addressing ecological, social and economic requirements for sustainable wild collection, which are outlined in table 8.

The FWF has an agreement with one inspection and certification control body, Institute for Marketecology (IMOSwiss AG, Weinfelden, Switzerland). Audits are also available however through Austria BioGarantie GmbH (Enzersfeld, Austria) under a Partner Control Body agreement with IMOSwiss AG. The agreement with IMOSwiss AG was enacted before EcoCert SA (France) acquired IMO Group AG; therefore, future audit services through the global network of EcoCert inspectors can be envisioned.



Source : <http://www.fairwild.org/labelling/>

Table 8. FairWild Standard principles and criteria for collection operations

Section I: Wild collection and conservation requirements
Principle 1. Maintaining wild plant resources: Wild collection of plant resources shall be conducted on a scale, at a rate and in a manner that maintains populations and species over the long term.
Principle 2. Preventing negative environmental impacts: Negative impacts caused by collection activities on other wild species, the collection area and neighbouring areas shall be prevented.
Section II: Legal and ethical requirements
Principle 3. Complying with laws, regulations and agreements: Collection and management activities shall be carried out under legitimate tenure arrangements and comply with relevant laws, regulations and agreements.
Principle 4. Respecting customary rights and benefit-sharing: Local communities' and indigenous peoples' customary rights to use and manage collection areas and wild-collected target resources shall be recognized, respected and protected.
Section III: Social and fair trade requirements
Principle 5. Promoting fair contractual relationships between operators and collectors: Collectors have the structures and access to information needed to represent their interests and participate in FairWild Premium decisions. There is no discrimination against particular groups as collectors.
Principle 6. Limiting participation of children in wild-collection activities: Collection and processing by collectors is done without substantial work by children.
Principle 7. Ensuring benefits for collectors and their communities: Trade intermediaries are minimized, collectors are ensured a fair price for the collected goods and community social development is supported through means of a FairWild Premium fund.
Principle 8. Ensuring fair working conditions for all workers of wild-collection operations: The collection operation ensures good working conditions for all workers of the wild-collection operation.
Section IV: Management and business requirements
Principle 9. Applying responsible management practices: Wild collection of target species shall be based on adaptive, practical, participatory and transparent management practices.
Principle 10. Applying responsible business practices: Collection of wild resources shall be undertaken to support quality, financial and traceability requirements of the market without sacrificing sustainability of the resource.
Principle 11. Promoting buyer commitment: The buyer of wild-collected products (e.g. importer) strives for mutually beneficial long-term trade relations with the wild-collection operation based on respect, transparency and support for the supplier in quality aspects.

Source: FairWild Standard V2.0 (2010)

2.3 Good Agricultural Practice (GAP) for traditional Chinese medicinal materials



Source: <http://www.cnca.gov.cn/>

China was one of the first countries to develop and implement national GAPs for medicinal plants. The General Committee of the State Administration of Pharmaceutical Supervision adopted the 'Good Agricultural Practice for Traditional Chinese Medicinal Materials (Trial Edition)' on 18 March 2002. Subsequently, the retitled 'Good Agricultural Practice for Chinese Crude Drugs (Interim)' came into force on 1 June 2002 under the authority of the State Drug Administration (SDA, 2002), since renamed the China Food and Drug Administration (CFDA).

Although the Chinese standard is titled Good Agricultural Practice (GAP), its scope also includes practices for sustainable wild harvesting and therefore should be titled Good Agricultural and Collection Practice (GACP). For example, Article 26 states: 'Collection of wild and semi-wild medicinal plants or animals should conform to the principle of "maximum sustainable yield". Their fostering, rotation and conservation should be planned and carried out to benefit their propagation and renewal of resources.'

Also related to wild collection and imbedded in this GAP is the traditional Chinese medicine (TCM) concept of 'geo-authenticity'. Geo-authentic (dao di) crude drugs refer to traditional Chinese crude drugs with specific germplasm or production sites, or with specific production techniques and processing methods. In this regard, Article 33 of the China GAP says: 'Geo-authentic (dao di) crude drugs should be processed according to traditional methods. Any change in methods should be based on sufficient experimental data, and should not affect the quality of the Chinese crude drugs.'

2.4 Union for Ethical BioTrade (UEBT) Ethical BioTrade Standard

The Union for Ethical BioTrade (UEBT) is a member-based non-profit association that promotes the 'sourcing with respect' of ingredients that come from biodiversity. Members adopt sourcing practices that advance sustainable business growth, local development and biodiversity conservation. UEBT was created in 2007 as a spinoff from the United Nations to promote business engagement in biotrade.

The Ethical BioTrade Standard builds on the BioTrade Principles and Criteria that were developed by the United National Conference on Trade and Development (UNCTAD) BioTrade Initiative. The first version of the Ethical BioTrade Standard was adopted in 2007 under the title Verification Framework for Native Natural Ingredients, and was revised in 2012.

The UEBT Ethical BioTrade Standard does not offer certification of operations, ingredients or products. It has verification requirements for its members to comply with its standard. Private and public companies, trade associations, non-governmental organizations (NGOs), community producers or collectors, national biotrade programs and any other organization active in the biotrade arena can apply for UEBT membership. There are two types of UEBT membership, trading member and affiliate member. Most of UEBT's members are in African, European and South American countries, though there are some in Asian countries, namely India and Viet Nam.



Source : <http://ethicalbiotrade.org/>

2.5 USDA National Organic Program (NOP) Wild-crop Harvesting Practice Standard



A full decade after the establishment of the Wild-crop Harvesting Practice Standard in 2001, as a component of the National Organic Program (NOP), the United States Department of Agriculture (USDA) published a four-page guidance document to clarify ways accredited certifying agents and certified operations could demonstrate compliance with NOP wild-crop regulation (USDA, 2011).

The USDA wild-crop guidance lists what a wild-crop harvesting Organic System Plan (OSP) should include, for example:

1. A full map of the area(s) to be harvested defining boundaries, borders, adequate buffer zones, point and non-point sources of contaminants and prohibited materials, and wild crops to be harvested.
2. Documentation that no prohibited materials have been applied to or contaminated the land or aquatic area within the last three years.
3. A description of the natural environment of the harvest area (e.g. scrub steppe, oak-chaparral woodland, deciduous hardwood forest).
4. A description of the proposed ecosystem management and harvesting practices, the impact of their proposed harvesting on the long-term viability of the wild species and on the area's ecosystem, and information on any equipment planned for use or being used to harvest and manage the wild-crop and ecosystem.

- This should include a description of the monitoring system that will be used to ensure the crop is harvested in a sustainable manner that does not damage the environment, including soil and water quality.
5. A list of any rare, threatened or endangered terrestrial or aquatic plants or animals that live in the harvest area.
 - The presence of rare, threatened, or endangered species in a wild harvest area does not automatically disqualify an operation from organic certification, but any potential or actual impacts need to be described and addressed.
 - If there are potential or actual negative impacts resulting from the wild-crop management and harvesting, actions that address and correct these impacts need to be described, implemented and monitored.
 6. The procedures used to prevent contamination from adjoining land use or other point or non-point sources contamination.
 7. The training provided and the procedures employed to ensure that all collectors harvest crops in accordance with the OSP and in a manner that does not damage the environment.
 8. The recordkeeping system that identifies all collectors, documents management and harvest practices, and provides the quantities and dates of wild crops harvested.

Chapter 4 Standards developed for certification of sustainably farmed MAPs

This study is focused on wild-collected MAPs. However, it is impossible to analyse the Chinese MAP export trade and potential global market for certified sustainably wild-collected MAP ingredients without including information about certification and trade of sustainably farmed MAPs. Sustainable agriculture and sustainable wild-collection are intertwined in the marketplace, and many operations produce and trade in both cultivated and wild MAPs, sometimes of the same species.

There is a growing market for MAPs with dual certification, i.e. organic + fair, that is not yet differentiated by method of production (farmed or wild-collected). While the FairWild Standard was developed specifically for sustainable wild-collection, it is also considered to be among the range of international 'fair' standards listed in the inclusion criteria of this study.

1 Ecological sustainability standards applicable to farmed MAPs

1.1 Demeter Biodynamic Farming Standard



Source : <http://www.demeter-usa.org/>

Demeter-International is a non-profit group whose member organizations work together in the spirit of an international confederation with democratic principles. Membership requires a functioning Demeter certification programme. Associations that support the objectives of Demeter-International can be elected as associated members. Demeter-International represents about 5,000 Demeter farms, with nearly 150,000 hectares in more than 45 countries (Beaumont, 2014).

The Demeter Biodynamic® Farm Standard is a comprehensive organic farming method that requires the creation and management of a closed system minimally dependent on imported materials, and instead meets its needs from the living dynamics of the farm itself.

The first Demeter Biodynamic® certification was issued to a farm in China in April 2014. The Beijing Geng-Du Biodynamic Co. Ltd. Phoenix Hills Commune is a 13.6-hectare farm that grows fruits, herbs and spices, and is situated 15 kilometres from Beijing.

1.2 USDA National Organic Program (NOP) Organic Agriculture Standards

The United States Department of Agriculture National Organic Program regulates all organic crops, livestock and agricultural products certified to USDA organic standards.

Organic certification agencies inspect and verify that organic farmers, ranchers, distributors, processors and traders are complying with USDA organic regulations. The USDA conducts audits and ensures that the more than 90 organic certification agencies operating around the world properly certify organic products. In addition, the USDA conducts investigations and enforcement activities to ensure all products labelled as organic meet its organic regulations. Operations must follow all of the specifications set out by the USDA organic regulation to sell, label or represent their products as organic.



Source : <http://www.ams.usda.gov/AMSV1.0/nop>

2 Economic and social sustainability standards applicable mainly to farmed crops

The sustainability standards discussed below were developed primarily for small farms that cultivate food crops, but in some cases are also applied to MAP crops. It was not envisaged in all cases during the standard development process that wild-collection operations might be interested in adapting some of

these standards to fit in the wild-collection setting. Most of these standards lack sufficient specificity for wild-collection operations, though some operations have been certified.

Some of the following standards may refer to the FairWild Standard, which remains the only voluntary sustainability standard specifically designed for wild-collection operations.

2.1 Control Union (CU) Fair Choice Social and Fair Trade Standard



Source: <http://www.controlunionfairchoice.com/>

Control Union (CU) Fair Choice is an inspection and certification system based in the International Human Rights Declarations and Labour Conventions that protect and assure the fair treatment of all those within the control and influence of the company that implement the system. It also includes requirements on health, safety and environmental protection. The first Fair Choice-certified MAPs were produced by certified operators in Peru. There are no certified operations in China.

2.2 EcoCert ESR Standard

The EcoCert ESR (Equitable, Solidaire, Responsable) Standard applies to food, cosmetics and textiles meeting both organic farming and fair-trade criteria, although some MAPs that are used in natural cosmetic, food supplement and medicinal products have ESR certification. Social, economic and environmental criteria are checked all along the value chain. The EcoCert Fair Trade label communicates transparency of products that are both organic and fair trade.



Source: <http://www.ecocert.com/en/fair-trade>

In France, EcoCert is associated with PFCE (French Platform for Fair Trade) as a member and administrator, and it engages in a task group of the CNCE (National Committee of Fair Trade). In Europe, EcoCert partners with the GeoFairTrade project. EcoCert has also initiated work on converging standards between European organic and fair-trade programmes.

2.3 Fairtrade International (FLO) Fairtrade Standards



Fairtrade International (FLO) coordinates Fairtrade labelling at an international level. FLO sets international Fairtrade standards, organizes support for producers around the world, develops global Fairtrade strategies and promotes trade justice internationally. Of relevance to the MAP sector, FLO has four sector-specific standards:

- Fairtrade International (FLO) Fairtrade Standard for Herbs and Herbal Teas for Hired Labour;
- Fairtrade International (FLO) Fairtrade Standard for Tea for Hired Labour;
- Fairtrade International (FLO) Fairtrade Standard for Tea for Small Producer Organizations (SPOs);
- Fairtrade International (FLO) Fairtrade Standard for Herbs, Herbal Teas & Spices for Small Producer Organizations (SPOs).

FLO has an agreement with one control body, FLOCERT, founded in 2003 to independently certify FLO fair-trade products. FLOCERT has about 80 employees, more than 100 auditors and over 3,000 customers across the world, ranging from small producers in developing countries to large global retailers. FLOCERT operates in 115 countries.

2.4 Fair Trade Sustainability Alliance (FairTSA) Fair Trade Standards



The Fair Trade Sustainability Alliance (FairTSA) is a non-profit organization focusing mainly on fair trade and the development standards for social responsibility. FairTSA works towards ethical supply-chain management and the development of liveable and economically viable community. Though mainly concentrating on farmed food crops, wild-collected plants fall within the scope of FairTSA's 'Consolidated standards for the production of agricultural products, processed foods, wild collected plants, handicrafts and personal care products' (Version 3.20; 28 August 2014).

FairTSA has accreditation agreements with nine inspection and certification-control bodies operating in four continents: Agreco GmbH, BCS Ökogarantie, Bioagricert, Biocert India Ltd, California Certified Organic Farmers (CCOF), Ceres GmbH, Control Union, QC&I GmbH, NASAA Ltd. FairTSA is also working on an equivalency project with the EcoSocial standard of the Instituto Biodinamico (IBD) of Brazil.

2.5 Fair Trade USA (FTUSA) Fair Trade Standards

Fair Trade USA (FTUSA), a 501 (c) (3) non-profit organization, is the leading third-party certifier of Fair Trade products in the United States. FTUSA promotes sustainable development and community empowerment by cultivating a more equitable global trade model that benefits farmers, workers, consumers, industry and the Earth. FTUSA has developed two standards that can be relevant to the MAP sector:

- Fair Trade USA Farm Workers Standard (FWS);
- Fair Trade USA Independent Smallholder (ISS) Standard.



Additionally, FTUSA has adopted the Fairtrade International (FLO) Small Producer Organization (SPO) Standard and also recognizes any MAP ingredients or products that are already certified according to any of the FLO standards. FTUSA has an agreement with one control body, Scientific Certification Systems Inc. (SCS Global Services), whose role in the FTUSA certification program is to provide auditing services and issue certification decisions.

Source : <http://fairtradeusa.org/resources>

2.6 Institute for Marketecology (IMO) Fair for Life (FFL) Social & Fair Trade Standard



The aim of the Institute for Marketecology (IMO) Fair for Life Social & Fair Trade Programme is to ensure fair and positive relations between producers and their cooperatives or contracting companies, between workers and their employers, and between sellers and buyers on the world market, while at the same time ensuring performance of standards. Social Responsibility Certification confirms that workers enjoy good working conditions and that producer groups have well-working, accountable internal structures. The FFL programme builds on widely acknowledged baseline standards such as the conventions of ILO, SA 8000 and the social criteria of the International Federation of Organic Agriculture Movements (IFOAM).

Source : <http://www.fairforlife.org/>

It is important to note that the Fair for Life standard includes a module for wild-collection operations that incorporates basic principles and specific control points that are excerpted from the FairWild Standard.

The Fair for Life Social & Fair Trade Certification Programme was co-developed by the Swiss Bio-Foundation (Bio-Stiftung Schweiz) with IMO, the inspection and certification body. EcoCert SA has acquired IMO, which may lead to EcoCert carrying out FFL inspections, especially in countries where IMO and EcoCert offices are consolidated.

2.7 Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial Standard



Source : <http://ibd.com.br/en/ecosocialibd.aspx>

Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial is a fair-trade program created by IBD and applicable exclusively to products and processes certified as organic. EcoSocial certification applies to companies, properties and producer groups that envision the development of an internal process of human, social and environmental development stimulated by commercial relationships that are based on the principles of fair trade. While all certified operations and products are involving cultivated crops, the IBD EcoSocial Standard does not exclude the possibility of certifying wild crops.

IBD has an agreement with Quality Assurance International (QAI) to provide an EcoSocial plus organic auditing program. QAI is a wholly owned subsidiary of NSF International.

Chapter 5 Situation for Chinese MAP ingredients with sustainability certifications

Information for the Biofach China 2015 organic trade show indicates that Chinese organic exports (of all categories of natural ingredients and finished products including food and medicine) steadily increase 5% per year and already account for 5% of the international organic market. There is some overlap in calculations of organic food ingredients and organic MAP ingredients because some goods fall into both categories – for example wild liquorice root is both food and medicine. China is indisputably the world's leading producer, user and exporter of MAPs. As reported in tables 4, 5 and 6 of this study, China's 2013 exports of MAPs exceeded 1.3 billion kg, with a reported customs value of over US \$5 billion.

This chapter describes the global market for Chinese MAP ingredients with sustainability certifications (organic and fair), firstly by identifying the control bodies that are authorized to carry out inspections and issue certifications in China, listing the Chinese producers and traders of certified organic MAPs, and explaining the situation today for 'fair' certified MAPs in China. The situation for the FairWild Standard in China is also discussed, including scenarios where it has been implemented in various projects. Furthermore, chapter 5 quantifies the number of producers and exporters of 'fair' certified MAPs globally (by country and by botanical species) and estimates the portion of certified organic global MAP trade that is also 'fair' certified.

1 Chinese organic inspection and certification organizations

Based on listings in governmental databases, there are three main control bodies for certified organic MAPs being exported from China. They are BCS OEKO-GARANTIE China Co. Ltd, CERES Shanghai Certification Co. Ltd and Beijing ECOCERT Certification Center Co. Ltd. However, more than 25 organizations carry out inspections for organic production and products in China.

- In its 2014 directory, the International Movement of Organic Agriculture Movements (IFOAM) listed eight Chinese organic inspection and certification organizations (IFOAM, 2014a);
- The USDA's NOP lists 15 NOP-accredited organic inspection and certification bodies operating in China (USDA, 2014a)
- The China National Accreditation Service for Conformity Assessment (CNAS) lists 21 organic control bodies on its website at: <http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml>

Contact details and logos for these organizations are shown in Annex I in alphabetical order.

One main reason to list authorized organic certification organizations is that some of these organizations are affiliated with, or are divisions of, international organizations that include the inspection and certification of various social sustainability standards within the scope of their operations outside of China. These groups may be the most likely Chinese organizations to eventually take on additional standards, such as FLO Fairtrade Standards (for cultivated MAP crops) or FWF FairWild Standards (for wild-collected MAP crops), if the Chinese government were to grant authorization.

2 Situation for organic wild certification in China

2.1 History of organic certification in China

The organic movement in China began in 1989, when the Rural Ecology Division of Nanjing Institute of Environmental Sciences, SEPA, became the first IFOAM member in the country. The first certified organic tea (by the Dutch certifier SKAL) was exported to the European Union in 1990. National organic regulations and standards were enacted in the early 2000s, and more than 20 domestic organic certifiers were registered by CNCA in China in 2004. A year later, CNCA authorized five foreign organic certifiers to

operate in China. For a detailed history of organic production and certification in China, see the ITC Technical Paper 'Organic Food Products in China: Market Overview' (ITC, 2011).

2.2 Why certified organic operations are relevant to potential of 'fair' certified wild-collected MAPs

Understanding which Chinese operations are already inspected and certified according to international organic standards, whether for farmed or for wild-collected MAPs, is useful in that these enterprises may be interested to add value with another sustainability certification (e.g. fair trade or FairWild) to increase their competitiveness in the global market for sustainable MAP ingredients. This chapter also provides information on which inspection and certification organizations are the most active in China in terms of sustainable agriculture and/or sustainable wild-collection inspections relevant to MAP production and export.

2.3 Chinese certified organic MAP operations in USDA database

The United States is the largest organic market, so it is useful to refer to the database of organic certified operations of the USDA's NOP. Annex II provides information on the Chinese operations listed in the USDA NOP database of certified operations as well as information on the main botanical species and name of the inspection and certification organization. Please note that listings for the certifying agent 'IMO China' are followed parenthetically by (formerly). This is because the database was current as of 2013 and IMO China was closed in mid-2014. Thus at the time of this study, it is unclear to which alternative certifying agent these organic operators will transfer.

Annex II shows that of the 129 listed organic MAP operations, 56 had certificates issued by (former) IMO (now Ecocert), 44 had certificates issued by BCS, 18 had certificates issued by CERES, and 11 had certificates issued by Ecocert. Annex II also shows that 88 of the certified organic MAP operations have mainly cultivated (C) MAPs, 27 have mainly wild-collected (W) MAPs, 11 have wild-collected and some cultivated (W/C) MAPs, and 3 have cultivated and some wild-collected (C/W) MAPs.

Addresses of certified organic operations are not shown in Annex II. Referring to the NOP online database, identification of some wild-collection locations for certified organic Chinese MAPs is possible. Many, however, show addresses only for corporate offices, not necessarily in the same location as where the wild-collection occurs. The main organic wild-collection provinces or regions shown in the database are:

- Gansu Province
- Guangxi Zhuang Autonomous Region
- Inner Mongolia Autonomous Region
- Jilin Province
- Liaoning Province
- Ningxia Hui Autonomous Region
- Qinghai Province
- Shaanxi Province
- Sichuan Province
- Tibet Autonomous Region
- Zhejiang Province

2.4 Checklist of Chinese wild MAPs that appear on organic certificates

Annex III provides a checklist of MAPs that appear on organic certificates of Chinese operations that may originate, in part or entirely, from wild collection. While individual certificates, made available through some control bodies, were evaluated to prepare the information provided in annex III, it cannot be conclusively determined whether each listed article is entirely sourced from wild collection without surveying each individual operation. This is because several species are produced to some extent from both cultivation and wild collection, and in some cases the same operation may be engaged in both cultivation and wild collection of same species under an organic system plan. Furthermore, not all control bodies make the operator's certificates publically available. Therefore annex III is not an exhaustive list, but rather a representative cross-section of operations and certified organic wild species of China.

2.5 Organic Chinese MAPs certified by selected control bodies

Annex IV provides a sampling of quantified data for certified organic MAPs in China for 2013. Two of the 25 control bodies authorized to offer organic inspection and certification services in China were asked to provide a representative sampling of MAP quantities certified organic in 2013. The quantities in the table are combined totals of the two control bodies, to avoid disclosing confidential data.

Between these two control bodies, nearly 81 million kg of MAPs were certified organic in 2013 (equalling about 6% of China's total MAP export volume for that year, as shown in table 6). It is important to note, however, that not all certified organic material will necessarily be exported. If the seller does not have a buyer willing to pay the organic premium, the seller may decide to sell some portion of it without the organic certificate at conventional prices. Some quantities may also be sold to extraction houses in China that value-add the raw material and then export the concentrated extracts.

Annex IV also shows several completely or partially wild-collected species within the top 20 certified organic articles in terms of quantity certified including:

- Chinese red jujube date (*Ziziphus jujuba*)
- Barbary wolfberry fruit (*Lycium barbarum*)
- Chinese rhubarb root & rhizoma (*Rheum officinale*, *R. palmatum*, and/or *R. tanguticum*)
- Chinese liquorice root (*Glycyrrhiza uralensis*)
- Astragalus root (*Astragalus membranaceus* and/or *A. membranaceus* var. *mongholicus*)
- Schisandra fruit (*Schisandra chinensis* or *Schisandra sphenanthera*)
- Mongolian dandelion herb and root (*Taraxacum mongolicum*)
- Chinese angelica root (*Angelica sinensis*)
- Kudzu root (*Pueraria montana*)
- Japanese honeysuckle flower bud (*Lonicera japonica*); and
- Eleuthero root (*Eleutherococcus senticosus*).

3 Situation for fair trade certification in China

3.1 CNAS (China National Accreditation Service for Conformity Assessment)



Source : <http://www.cnas.org.cn/english/index.shtml>

China National Accreditation Service for Conformity Assessment (CNAS), the national accreditation body of China, is unitarily responsible for the accreditation of certification bodies, laboratories and inspection bodies. CNAS was established under the approval of the Certification and Accreditation Administration of China (CNCA) and authorized by CNCA in accordance with the regulations of China on certification and accreditation. CNAS provides programmes for the types of certification bodies listed below. The types of certification bodies most relevant to the MAP sector are shown in *italicized bold face type*.

- Accreditation of Quality Management System Certification Bodies
- Accreditation of Environmental Management System Certification Bodies
- Accreditation of Occupational Health & Safety Management System Certification Bodies
- Accreditation of Food Safety Management System Certification Bodies
- Accreditation of Product Certification Bodies
- *Accreditation of Organic Product Certification Bodies*
- *Accreditation of Good Agriculture Practice Certification Bodies*
- Accreditation of Software Process and Capability Maturity Assessment Bodies
- Accreditation of Personnel Certification Bodies
- *Accreditation of GMP Certification Bodies*
- Accreditation of HACCP Certification Bodies
- *Accreditation of FOREST Certification Bodies*
- Accreditation of CONSTRUCTION Certification Bodies
- Accreditation of PC Certification Bodies
- Accreditation of TL9000 Certification Bodies
- Accreditation of ISMS Certification Bodies.

3.2 CNCA (Certification and Accreditation Administration of the People's Republic of China)



Source : <http://www.cnca.gov.cn/>

On 20 November 2013, China's General Administration for Quality Supervision, Inspection and Quarantine (AQSIQ) announced its revised Administrative Measures for Organic Product Certification (USDA, 2014b).

Article 4 of the revised measures says CNCA shall be responsible for the unified management, supervision and coordination of organic certification activities at the national level.

Article 5 states that China shall pursue the unified organic certification system and implement a unified certification catalogue, unified standards and certification rules, and the unified certification label. CNCA shall be responsible for the formulation and adjustment of the organic product certification catalogue and certification rules, as well as their publication.

Article 7 says organic certification bodies shall be approved by CNCA before it can engage in organic certification activities.

As of December 2014, CNCA had appointed 21 centres as the inspection and certification bodies in China for organic processing and products. See annex I for listings with contact details.

3.2.1 Relevance of CNCA to FairWild certification in the future

Similarly for fair trade or FairWild certification, CNCA would need to grant authorization for any Chinese certification body to inspect and certify operations against any of the various 'fair' standards described in this study.

This is relevant to the future possibility of fair certification in China, because the organizations most likely to be interested in adding fair trade or FairWild standards to their catalogues of standards will be those already authorized as organic certification control bodies.

3.3 Fairtrade International (FLO) Fairtrade Standards in China



Source : <http://www.fairtrade.net/>

Fairtrade International (FLO) Fairtrade Standards are subject to a geographical scope policy and, as such, are limited to certain countries. Only producers in these countries can apply for fair trade certification.

FLO defines the countries where it certifies producers as those countries with low and medium development status. The definition is based on the OECD-DAC (Development Assistance Committee) list of recipient countries of Official Development Assistance. The list includes countries with low and middle per capita income as defined by the World Bank. FLO's geographical scope encompasses almost all countries in Africa, Latin America and the Caribbean, Oceania and the poorest countries in Asia. Countries and territories are divided into regions based on the UN classification of macro geographical regions.

Note: Producers in China can only be certified against FLO's Standard for Small Producer Organizations. Contract production and hired labour set-ups cannot be certified today as FLO Fairtrade in China. Traders in China can be certified for all Fairtrade products, except for seed cotton.

Nine FLO certified operations in China produce MAP articles. However, these mainly produce one article for the export market, fair trade green tea (*Camellia sinensis*) leaf. One of the operations also produces fair trade mint (*Mentha* species) leaf, and another offers fair trade ginger (*Zingiber officinale*) rhizome.

CNAS has not authorized any Chinese certification bodies to inspect or certify fair trade operations or products. A FLO Fairtrade marketing organization, the Fairtrade Hong Kong Foundation, is located in China at:

PO Box No. 6998, General Post Office

Hong Kong SAR, China

Email: info@fairtradehk.org

Web: <http://www.fairtradehk.org/>

3.4 Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial Standard

Brazil's Instituto Biodinâmico de Desenvolvimento Rural (IBD) has three clients in China. One, Dalian Huaen Co., Ltd / Dalian Rihua Organic Food Clean Co., Ltd (Dalianwan Town, Liaoning Province), has been inspected and certified for compliance against three standards:

- a. IBD non-GMO standards
- b. Organic standards (US and EU)
- c. IBD EcoSocial standards



Source : <http://ibd.com.br/en/ecosocialibd.aspx>

IBD's one EcoSocial, organic and non-GMO client in China has several cultivated MAPs listed in its certificate, including bigfruit evening primrose seed (*Oenothera macrocarpa*), capsicum fruit (*Capsicum annuum*), flax seed (*Linum usitatissimum*), flax seed oil, hemp seed (*Cannabis sativa*), hemp seed oil, perilla seed (*Perilla frutescens*), pine nut kernel (*Pinus* spp.), pumpkin seed (*Cucurbita pepo*) and pumpkin seed oil.

IBD EcoSocial certified operations also exist in some other Asian countries, notably Thailand and India.

4 Situation for FairWild Standard (FWS) in China

4.1 FWS implementation in China through government funded projects

While table 8 in chapter 3 summarizes the FairWild Standard (FWS) principles and criteria for collection operations, the FWS may also be used in other ways. For example, according to the FairWild Foundation:⁸

4.1.1 FairWild and international policy implementation

The FairWild Standard is instrumental for the implementation of regulatory frameworks – bridging the gap between broad conservation guidelines and management plans developed for specific local conditions. The standard is a useful tool for the parties of multilateral environmental agreements (MEAs), for instance the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Flora and Fauna (CITES), in meeting their commitments under international conventions.

4.1.2 FairWild informing national legislation

Governments can use the FairWild Standard as a model to develop national laws and other regulations governing fair-trade practices, the conservation of biodiversity and the management of plant collection from the wild. While the entire standard must be implemented to achieve FairWild Certification, it is possible to focus only on specific parts of the standard to help guide national or regional legislative and policy processes. For example, India's National Medicinal Plants Board (NMPB) has included FairWild's ecological principles in its Guidelines for Good Field Collection Practices of Medicinal Plants. FairWild has

⁸FairWild Foundation. The FairWild Standard in practice: certification and more. Available at: <http://www.fairwild.org/publication-downloads/fairwild-factsheets/FairWild-Standard-in-Practice.pdf>

also helped shape biodiversity and resource management legislation in Bosnia and Herzegovina, the development of the Biodiversity Management Plan for *Pelargonium sidoides* in South Africa and Lesotho, national level legislation, and the non-timber forest products (NTFPs) strategy of Kosovo.

4.1.3 FairWild and the Convention on Biological Diversity (CBD)

The FairWild Standard has clear links to the CBD's core aim of conservation of biological resources, including their sustainable use and fair sharing of benefits resulting from such use, in particular supporting the delivery against the Aichi Targets and the Targets of the Global Strategy for Plant Conservation.

4.1.4 FairWild and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Countries exporting plant and animal species listed in appendix II of CITES must demonstrate levels of export are not detrimental to the survival of the species concerned. This is achieved through the compilation and issuance of a non-detriment finding (NDF) by the CITES Scientific Authority of the country concerned. The ecological criteria of the FairWild Standard have informed technical discussions on the development of NDF procedures at international CITES expert meetings in Mexico and elsewhere. The FairWild Foundation also provides guidance on adaptive management schemes for wild-harvested resources – an important consideration for NDF evaluations.

TRAFFIC has field-tested the FairWild Standard as a means of guiding the development of an NDF for *Pelargonium sidoides* in Lesotho and South Africa, as part of the international project Saving Plants that Save Lives and Livelihoods, funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and coordinated by TRAFFIC and WWF Germany. *Pelargonium sidoides* is not listed in CITES, but populations are under severe pressure due to land conversion and harvesting. More recently, the FairWild experience was used to inform the development of the NDF Guidance for Perennial Plants and training modules.

4.1.5 EU-China Biodiversity Programme (ECBP)



Source: ECBP internal documents

The five-year (2007–2011) project Sustainable Management of Traditional Medicinal Plants in the High-Biodiversity Landscapes of Upper Yangtze Eco-region was one of 18 field projects within the EU-China Biodiversity Programme (ECBP). The projects were funded by the EU and implemented by the United Nations Development Programme (UNDP) in cooperation with China's Ministry of Environmental Protection. The project enabled collaboration between WWF China, TRAFFIC, the International Union for the Conservation of Nature (IUCN), the Ecology Committee of the Natural Resources of the Chinese Materia Medica, and several provincial forestry bureaus. The aim was to develop and implement a strategic model for biodiversity conservation and sustainable development in one of China's important Giant panda (*Ailuropoda melanoleuca*) habitat areas (Brinckmann and Morgan, 2012).

One outcome of the ECBP project was the establishment of the Pingwu Shuijing Traditional Chinese Medicine Materials Cooperative for the sustainable wild collection and trade of medicinal plants in 22 participating villages. With ECBP project support, the USDA NOP Wild-crop Harvesting Practice Standard was implemented, along with certain elements of the FairWild Standard, such as its guidelines for resource assessment, resource management plans and monitoring for harvesting of the target species.

4.1.6 EU-China Environmental Governance Programme Project on Harvesting of Wild Medicinal and Aromatic Plants (EGP MAPs)

The EU-China Environmental Governance Programme (EGP) is a EUR15 million EU-funded programme implemented with China's Ministry of Commerce and the Ministry of Environmental Protection. The Policy Research Center for Environment and Economy (PRCEE) carries out the programme, which runs from December 2010 until December 2015. The programme's objective is to enhance environmental governance in China based upon the principles of the Aarhus Convention.



Source : http://www.ecegp.com/index_en.asp

There are 15 grant-based Partnership Projects in which European entities work together with local governments in different parts of China to introduce and test new ideas on environmental governance. The European partners include NGOs, academic institutions and consulting companies. The Chinese partners include local municipalities and Environmental Protection Bureaus, academic institutions, national associations, NGOs and industrial entities (EGP, 2014).

One of the 15 projects, under the theme of “proactive engagement of the private sector in sustainable practices,” involves use of the FairWild Standard in a two-year (2013-2015) Partnership Project titled Engaging the Private Sector in sustainable management of medicinal plants – the multiplier effect.

In this project, TRAFFIC and partners are working to introduce the FairWild Standard principles in a non-certification scenario. The project aims to “green” the supply chains of wild and cultivated TCM plants for participating companies in Zhejiang and Hunan provinces.

4.1.7 “FairWild Standard” – a case study in Naban River Watershed National Nature Reserve, Yunnan/China

The diploma thesis of doctoral researcher Solveig Franziska Bucher (University of Hohenheim, Federal Republic of Germany) was titled “The Collection of Wild Medicinal Plants in Xishuangbanna, Yunnan, SW China – a Case Study on Its Sustainability in Consideration of the FairWild Standard” (Bucher et al., 2010). Bucher and her research team studied the current population of five selected plant species of commercial value (*Asparagus filicinus*, *Asparagus subscandens*, *Paris polyphylla*, *Tacca chantrieri* and *Stemona tuberosa*). With the help of strip transects conducted in forests, fallow land and at riversides, they also interviewed local people involved in the trade of the medicinal plant species about the harvest impact to answer the following questions:

- What is the current harvest situation like?
- What would sustainable use be like?
- Is it possible to apply the “FairWild Standard”?

Bucher *et al* concluded that:

- Annual harvest rates are high and local people report declining numbers of plants.
- Long-term studies and more data are needed to estimate sustainable harvest and the application of the “FairWild Standard”.
- The cultivation of the selected plant species should be enforced as it is already sometimes practiced to ensure further supply of the plants.

4.2 Interest in the FWS by Chinese inspection and certification organizations

Based on interviews with inspection and certification organizations, there appears to be a genuine interest to formally expand their repertoire of standards for certification of Chinese MAP operations and crops (cultivated and wild) to eventually include economic and social-sustainability standards where appropriate, for example Fair Trade for MAP farming cooperatives and FairWild for wild-collection cooperatives.

Interest in an eventual expansion of the range of sustainability certifications available to Chinese producers, for example from organic to organic + fair, is clearly in the context of export-marketing opportunities as opposed to certification for the domestic market.

The market for certified organic + fair MAP ingredients and products is growing particularly, in American and European countries. Chinese producers and exporters could enjoy a bigger role in this growing

subsector if Chinese inspection and certification bodies were authorized to carry out inspections and issue certificates to export-oriented sustainable MAP operations in China.

5 Producers and exporters of fair-certified MAPs by country and species

The previous sections indicated that China is participating in the global organic market, but has very limited participation in the global fair-trade market. This section analyses situation and trends in the global market and how China compares with other countries.

To prepare the tables in this chapter, the databases and/or lists of certified operators (producer companies or organizations) available from both standards-setting organizations (e.g. FairWild Foundation) and inspection and certification bodies (e.g. FLO-CERT) were utilized, as well as the websites of the identified producer groups. Determinations as to whether the certified MAP is primarily wild collected (W) or cultivated (C) were made, in part, based on the MAP production and trade knowledge of the author of this report, as well as internal project data provided by TRAFFIC, and, in part, based on additional desk research in current literature concerning the occurrence, production and trade of each species in the listed country. Additional information was obtained from websites of producers and/or their distributors. It is important to note, however, that what individual companies reported concerning whether certain MAPs in their own supply chains were obtained from cultivation or wild-collection is not generalizable to the national level. Multiple sources of information were considered necessary to make reasonable determinations.

Global number of 'fair' certified MAPs, number of countries, number of certified operations

This section compiles and analyses data that are presented in three separate annexes (due to size):

- Annex V: Producers of fair certified MAPs globally;
- Annex VI: Countries active in fair certified MAP trade sorted by number certified MAP articles;
- Annex VII: Countries active in fair certified MAP trade sorted by number of certified producers.

The following main points can be extrapolated from the data shown in the three annexes:

- 50 countries (out of 193 countries in the world or about 26% of all countries) have certified operations producing fair certified MAP ingredients for the export market.
- There are 232 distinct operations producing fair certified MAP ingredients.
- The top 10 countries (in terms of the number of certified operations) accounted for 149 operations or 64.2% of the total of 232 operations.
- The data identified 355 fair certified MAP articles. Note: An article is counted once per country regardless of how many operations produce the same article. However, if the article is produced in more than one country, it is counted once per country.
- At least 50 wild-collected MAP articles carry some form of 'fair' certification. A precise number is not possible because in some cases it was determined that while the article is most likely wild-collected, it could be cultivated. There are also some MAP species with some operations wild-collecting, while others are cultivating. Furthermore, in some cases, more than one plant part is certified as a separate MAP article.
- The top 10 countries (in terms of the number of articles produced) accounted for 244 articles or 68.7% of the total of 355 articles.
- India ranks as No. 1 in both categories, with 48 out of 232 producers (20.7% of total) and 35 out of 355 MAP articles (9.9% of total).

- Three countries ranked in the top five in both categories: India, Sri Lanka and Madagascar.

Applying the inclusion and exclusion criteria described in chapter 1, section 4 of this report ('fair' standards included in this study), annex V shows the producers and exporters of MAP ingredients with some type of fair certification in all countries. Companies only claiming to offer fair trade MAP ingredients but without independent third-party certification were also excluded.

The information in annex V is alphabetized by the English common name of each MAP species followed by the country where produced, the name of the producer company, which fair standard the material is certified against, and an indication of whether the material is wild-collected (W), cultivated (C), or both (W/C) or (C/W). The determinations of wild or cultivated status were made, in part, based on knowledge of the species and production region, on the type of certification and on information that could be gleaned from the company or control body. For example, any MAP articles with FairWild certification are classified as wild-collected (W).

Annex VI summarizes the number of certified operations actively involved in the production and trade of fair certified MAP ingredients. Only the actual producers are included. Non-producer registered traders and/or brandholder licensees are excluded.

Finally, annex VII summarizes the number of distinct MAP ingredients available from each country with some type of fair certification. If more than one plant part of a single species is certified (e.g. dandelion leaf and dandelion root) and/or more than one value-added processed form (e.g. dry extract, essential oil, fatty oil, and/or tincture) is certified, each is tallied as a distinct separate article of commerce.

6 Portion of organic MAP trade that is also fair certified

Dual certification (organic + fair) is the trend

A report by the market intelligence agency Mintel finds that the percentage of new products with 'ethical + environmental-friendly' claims labelling launched in the United States from 2009 to 2014 rose steadily: 2014 (6.6%), 2013 (5.8%), 2012 (2.3%), 2011 (2.4%), 2010 (2.1%), 2009 (2.6%). The same report also shows significant increases in new product launches with 'ethical + environmentally-friendly' packaging claim statements (Watson, 2014).

56% of FLO FairTrade certified MAPs globally are also certified organic

FLO's 2013-14 annual report estimates that 56% of FLO FairTrade-certified MAPs (under the subheading 'herbs, herbal teas and spices') are also certified organic. FLO's estimation was based on volume using estimated retail sales of fair trade certified products in consumer countries, based on data provided by National Fairtrade Organizations, and refers only to products sold under the FLO FairTrade mark (FLO, 2014).

100% of FLO FairTrade certified MAPs in the United States are also certified organic

In the United States, the largest market worldwide for certified organic products, Fair Trade USA reports that 100% of the fair trade-certified MAPs under the subheading 'herbs, herbal teas and spices' imported in 2013 were also certified organic. In 2013, 84% of fair trade-certified MAPs under the heading 'tea' were also certified organic. This data indicated that organic and fair trade go hand-in-hand in the United States, while this is apparently not yet the case in Europe and the rest of world, although trends suggest this is changing.

100% of FairWild certified MAPs globally are also certified organic

Quantitative data were not available from all of the organizations involved in the inspection, certification, trade and marketing of 'fair' certified materials and products. The scope of this study includes MAP producer organizations certified through several different international sustainable and fair initiatives, some of them with very different statistics than presented in FLO's annual report. For example, in one case, 100% of the FairWild certified operations also have organic wild certification. Therefore, the example of

FairWild certification is possibly more relevant to the special situation in China, where a significant number of MAP species are collected in the wild.

Without quantitative data from all information sources, there can be a number of ways to estimate the portion of overall organic MAP trade that is also fair certified. Some correlations can be made between overall certified organic production area (hectares), number of producers and/or producer organizations, and estimated retail trade value (euro) against certified fair production, number of operations and trade data.

6.1 Total organic land, producers and sales

According to reports by the Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM) (IFOAM, 2014b; Willer et al., 2014), the top five countries with the largest (a) certified organic land area, (b) number of organic producers and (c) organic retail sales are:

Top 5: Total certified organic agricultural land (millions of hectares):

- Australia (12.0)
- Argentina (3.6)
- United States (2.2)
- China (1.9)
- Spain (1.6)

Top 5: Number of organic producers:

- India (600,000)
- Uganda (189,610)
- Mexico (169,707)
- Tanzania (148,610)
- Ethiopia (134,626)

Top 5: Organic retail sales (Mio EUR):

- United States (22,590)
- Germany (7,040)
- France (4,004)
- Canada (2,136)
- United Kingdom (1,950)

Furthermore, and of most relevance to certified organic wild collection of MAPs, FiBL and IFOAM also report the certified organic non-agricultural areas where organic wild collection and beekeeping occur. In 2012, an estimated 30,359,009 hectares of non-agricultural land were under organic control worldwide. The top three countries in terms of non-agricultural areas under organic control were reportedly:

- Finland [7 million hectares; mainly for harvesting of wild berries including medicinal fruits such as bilberry (*Vaccinium myrtillus*) and seabuckthorn (*Hippophaë rhamnoides*), but also other medicinal

substances such as birch tree sap (*Betula* spp.), dandelion root (*Taraxacum officinale*) and stinging nettle leaf (*Urtica dioica*)

- Zambia (6.1 million hectares, mainly beekeeping for honey production)
- India (4.7 million hectares, certainly includes wild collection of MAPs)

Of particular relevance to this report are FiBL-IFOAM data concerning two of the world's biggest producers and exporters of MAPs, China and India. The data show that China ranks among the top five countries in terms of certified organic agricultural land. India is among the top five countries in terms of the number of certified organic producers, and is also among the top three countries in terms of wild-collection land areas under certified organic control.

The FiBL-IFOAM data also make it clear that the main markets for certified organic products are in North America (United States and Canada) and Europe (Germany, France and United Kingdom).

6.2 Organic MAP production: arable crops, permanent crops and wild crops

Willer and Lernoud (2014) report an estimated 37,544,909 hectares of certified organic agricultural land and about 31 million hectares of certified organic nonagricultural areas (where wild collection of MAPs occurs among other activities such as beekeeping) worldwide. For both certified organic agricultural land and non-agricultural land, they provide estimates of the areas that are used for cultivating as well as wild collecting. Table 9 shows their 2012 estimates of organic MAP production areas for both cultivation and wild collection.

Although the authors of the FiBL-IFOAM report have two quantified line items for MAPs, i.e. as arable crops or permanent crops, this report uses the broader definition of MAPs (see chapter 1 'Product description') that would include parts of other categories that they list as separate wild collection categories. For example, some portion of wild berries [e.g. bilberry (*Vaccinium myrtillus*)], wild fruits [e.g. tribulus fruit (*Tribulus terrestris*)], wild mushrooms [e.g. zhu ling sclerotium (*Polyporus umbellatus*)] and wild seaweeds [e.g. sargassum (*Sargassum* spp.)] are substances used in systems of traditional medicine and/or as natural health ingredients.

Table 9. Hectares worldwide of certified organic MAP production (farmed and wild collected)

Type of farming or wild-collection area	Certified organic hectares
Arable crops: Hop strobile (<i>Humulus lupulus</i>)	198
Arable crops: Medicinal and aromatic plants	71,183
Permanent crops: Medicinal and aromatic plants	39,821
Permanent crops: Tea leaf (<i>Camellia sinensis</i>) and Maté leaf (<i>Ilex paraguariensis</i>)	97,592
Wild berries (many wild berries are considered to be medicinal and/or nutritional)	7,007,624
Wild fruits (many wild fruits are considered to be medicinal and/or nutritional)	24,706
Wild medicinal and aromatic plants	3,126,711
Wild mushrooms (many wild mushrooms are considered to be medicinal and/or nutritional)	2,902
Seaweed (many wild seaweeds are considered to be medicinal and/or nutritional)	200,000
Wild collection, no details provided (likely includes some harvesting of MAPs; for example 4.7 million hectares of about 41% of this area are listed as India, where there is a significant amount of MAP wild collection, including organic wild MAPs)	11,441,497
Wild collection, other (may also include some harvesting of MAPs)	65,073

Source: Willer et al., 2014

6.3 Estimates of certified fair and organic MAPs

About 50% of all certified fair trade finished products (all categories) are also certified organic

In general, the top 'additional' sustainability certification claim statement that is made for certified fair trade products is certified organic. Within Canada and the United States, an estimated 38.8% of all certified fair trade products (all product categories) also make certified organic claims. The percentage is higher for the rest of the world, with an estimated 50.1% of all certified fair trade products making additional certified organic claims (Dimarcello et al., 2014).

100% of Fair Trade USA certified MAPs and 100% of FairWild certified MAPs in the United States are also certified organic

The percentages increase considerably, however, when breaking out the MAP subsector of fairly traded products. As already stated, 100% of the fair trade-certified MAPs (herbs, herbal teas and spices) reported through the Fair Trade USA system are also certified organic, and 100% of FairWild certified MAPs (all countries involved) are also certified organic. However, only 56% of the Fairtrade International (FLO) fair trade-certified MAPs are also certified organic (globally).

Trade volume of FLO fair trade-certified herbs, herbal teas and spices grew 182% in 2013

Growth trend data: FLO Fairtrade reported a 182% growth rate for the subcategory of 'herbs, herbal teas and spices' in 2013 compared with 2012 in terms of volume (MT). For the same category, Fair Trade USA reported a 23% growth rate in 2013 compared with the previous year. In both cases, there is a significant year-on-year increase in demand and sales for fair trade-certified herbs and spices. In the case of the United States, 100% of the fair trade sales of herbs and spices are also certified organic.

11.8% of 2014 total retail sales value of teas and herbal teas in United States were organic labelled and 4.8% was fair labelled

According to a tea market report by Keating, the estimated retail sales value of all teas (black tea, green tea, herbal beverage teas and herbal medicinal teas) sold in the United States was US\$ 1,814,632,064. Of this total, \$214,735,732 (11.8%) was organic, \$132,070,266 (7.3%) was non-GMO verified, \$87,404,933 was fair trade labelled⁹ (4.8%) and \$45,246,255 (2.5%) was labelled with triple certifications of organic + fair + non-GMO (Keating et al., 2015).

Estimating the organic percentage of fair certified products globally

Table 10 provides estimates of the total percentage of fair-certified MAPs that are also certified organic in the various different fair certification and labelling schemes.

Most of the fair trading systems shown in table 10 do not actually require organic certification (as a measure of compliance with their standard). It is generally strongly encouraged, however, and in many cases the fair-certified operation was already organic-certified before adding on fair certification. Most of the inspection and certification organizations provide joint organic + fair inspections to minimize costs and to avoid duplicative or redundant requirements for inspection.

⁹ All teas with a Fair Trade label claim are included, such as FLO FairTrade Fair Trade USA and FairWild certified.

Table 10. Estimated percentage organic of fair-certified products

Fair trading system	Products	2013 Total Fair Volume	% Organic
Control Union Fair Choice	Medicinal and aromatic plants (e.g. maca hypocotyl and stevia leaf), medicinal and nutritional fruits (e.g. camu camu fruit), essential oils (e.g. of eucalyptus leaf) and fatty oils (e.g. of sacha inchi seed)	Not available	100.00
Ecocert Fairtrade	Medicinal and aromatic plants (e.g. devil's claw root tuber and hibiscus flower), medicinal and nutritional fruits (e.g. açai and baobab), essential oils (e.g. of vetiver root) and fatty oils (e.g. of argan kernel)	Not available	100.00
FairWild	Wild-collected medicinal and aromatic plants (e.g. dandelion root, European elder flower, juniper berry, liquorice root, stinging nettle leaf) and plant products (e.g. frankincense oleo-gum-resin)	325 MT (estimate)	100.00
FLO Fairtrade	Herbs, Herbal Teas and Spices (e.g. chamomile flower, cinnamon bark, ginger rhizome, hibiscus flower, peppermint leaf, rooibos herb)	1,795 MT	56.00
	Tea leaf (<i>Camellia sinensis</i>)	11,375 MT	22.00
Fair Trade USA	Herbs, Herbal Teas and Spices (e.g. chamomile flower, cinnamon bark, ginger rhizome, guayusa leaf, rooibos herb, yerba maté)	431.6 MT	100.00
	Tea leaf (<i>Camellia sinensis</i>)	865.6 MT	84.00
	Vanilla fruit (<i>Vanilla</i> spp.)	45.9 MT	100.00
FairTSA	Medicinal and aromatic plants (e.g. anise fruit, caraway fruit, fennel fruit)	Not available	100.00
IBD EcoSocial	Medicinal and nutritional oil seeds (e.g. flaxseed, hemp seed, pumpkin seed) and their expressed fatty oils	Not available	100.00

Sources of 2013 fair certified volumes: (1) FairWild: Direct knowledge of author of this study; (2) FLO Fairtrade: Publicly reported data; (3) Fair Trade USA: internal documents provided to author of this study.

Canada and United States now have organic-specific tariff codes for tea and ginger

For tracking certified organic imports vs. conventional imports, Canada and the United States have begun to assign organic-specific HS codes. For example, the Harmonized Tariff Schedule of the United States (HTSUS) includes import HS codes for a few certified organic MAPs, as shown in table 11.

Table 11. Selected certified organic import HS codes for MAPs in the HTSUS

HS Code	Description
0902101015	Green tea (not fermented), certified organic, flavoured, in immediate packings of a content not exceeding 3 kg – kg
0902109015	Green tea (not fermented), certified organic, in immediate packings of a content not exceeding 3 kg, not flavoured – kg
0902209015	Green tea (not fermented), certified organic, not flavoured, not in immediate packings of a content not exceeding 3 kg – kg
0902300015	Black tea (fermented) and partly fermented tea, certified organic, in tea bags, in immediate packings of a content not exceeding 3kg – kg

HS Code	Description
0910110010	Certified organic ginger, not ground
1204000025	Certified organic flaxseed (linseed) for use as oil stock, whether or not broken

Source: Harmonized Tariff Schedule of the United States

Although tea (*Camellia sinensis*) leaf and ginger (*Zingiber officinale*) rhizome are both produced exclusively from cultivation, they can still serve as useful examples when estimating the future potential market for fair + organic certified wild-collected MAPs. The 2013 total quantities of tea leaf and ginger rhizome imported into the United States are known as well as the quantities imported that are certified organic as well as quantities that are certified fair trade + organic, respectively.

9.3% of tea leaf imported into the United States was organic, of which 16.8% was also fair trade

Table 12 shows United States total 2013 tea leaf imports as well as the portion that is certified organic and the portion that is certified fair trade (through Fair Trade USA system only). One limitation of this data is the fact that there may be fair trade tea leaf entering the United States outside of the Fair Trade USA trading system (which would increase the fair traded products percentage) – for example, tea leaf that is certified to comply with the IMO Fair for Life standard or the Ecocert ESR fair trade standard, or tea leaf that is used in products labelled through the international FLO fair trade system only. The data show that in 2013, 9.3% of the tea leaf imported into the United States was certified organic, of which 16.8% was certified fair trade through the Fair Trade USA trading system.

Table 12. United States 2013 Tea Leaf Imports, Total / Organic / Organic + Fair

HS Code	Description	Value (US\$)	Qty (kg)	% of Value	Main suppliers
	Total tea leaf	453,288,962	130,163,600	100%	
0902300050	Black tea leaf, F/BAG	56,055,924	4,979,400	12.4%	Canada, China
0902400000	Black tea leaf, fermented	208,664,885	93,827,700	46.0%	Argentina, India
0902300090	Black tea leaf, Other	41,970,201	6,477,000	9.3%	India, Sri Lanka
0902109050	Green tea leaf, <3 kg	27,458,867	2,209,200	6.0%	Japan, China
0902101050	Green tea leaf, FL < 3 kg	9,568,349	963,500	2.1%	China, Morocco
0902201000	Green tea leaf, flavoured NRT	3,119,705	299,900	0.7%	Morocco, China
0902209050	Green tea leaf, NF OT	64,341,415	17,048,000	14.2%	China, Japan
0902300015	Organic Black tea leaf, F/BAG	20,774,449	2,341,500	9.3%	India, Sri Lanka
0902109015	Organic Green tea leaf, < 3 kg	14,253,753	1,136,400		Japan, China
0902101015	Organic Green tea leaf FL<3 kg	964,928	58,000		China, Canada
0902209015	Organic Green tea leaf, NF OT	6,116,486	823,100		China, Japan
	Total Organic:	42,109,616	4,359,000		
0902300015 0902109015 0902101015 0902209015	Fairtrade Tea leaf	Not reported	865,641	Of the 4,359,000 kg of organic tea leaf imported in 2013, 730,206 kg (16.8%) was also Fair Trade USA fairtrade. Another 135,435 kg of fairtrade tea leaf was conventional (non-organic).	
0902300015 0902109015 0902101015 0902209015	Fairtrade + Organic Tea leaf	Not reported	730,206		

Sources: (1) Global Agricultural Trade System (GATS) online database; (2) Fair Trade USA

Table 13 shows similar data for United States ginger rhizome imports in 2013 and the portions that are certified organic as well as certified organic and fair trade. This data show that 13.2% of the ginger imported into the United States was certified organic, and that most ginger imports including organic ginger originated from China.

Table 13. United States 2013 ginger rhizome imports, total / organic / organic + fair

HS Code	Description	Value (US\$)	Qty (kg)	% of Value	Main suppliers
	TOTAL GINGER RHIZOME:	73,097,042	57,550,400	100%	
0902300050	Ginger rhizome, not ground	58,381,457	48,660,000	79.9%	China, Brazil
0910120000	Ginger rhizome, ground	5,069,355	1,942,800	6.9%	India China
0910110010	Organic ginger rhizome	9,646,230	6,947,600	13.2%	China, Peru
0910110010	Organic + fair trade ginger rhizome	Not reported	29,613 *		India, Sri Lanka

Sources: (1) Global Agricultural Trade System (GATS) online database; (2) Fair Trade USA

*The figure of only 29,613 kg of fair trade ginger imported into the United States in 2013 is based on data from only one fair trade organization and represents just 0.43% of the 6,947,600 kg of certified organic ginger imported. Based on import trade knowledge of the author of this report, considerably more fair trade ginger is being imported, but through other certification and labelling initiatives. Quantitative data for ginger from the other fair trade initiatives were not available. Therefore, this number does not appear to be representative of the overall fair trade ginger market.

Estimating China's potential market share for dual-certified MAPs

It appears reasonable to estimate that there may be a current market for between 5% and 15% of China's total MAP exports (about 65.1 million kg to 195.4 million kg) with organic certification, of which 5% to 10% (3.3 million kg to 19.5 million kg) may have additional market opportunities if further valued-added with dual certification of organic + fair. This estimate is based in consideration of the following indicative data reported in chapter 5:

China export trade data:

- China's organic exports (all categories) are steadily increasing 5% a year and already account for 5% of the international organic market;
- At least 6% of China's 2013 MAP export volume was certified organic;

United States import trade data, new product trend data and retail sales data:

- 9.3% of tea leaf imported into the United States in 2013 (from China, India and Japan) was certified organic, of which at least 16.8% was also fair trade certified;
- 11.8% of retail sales value of all teas and herbal teas sold in the United States in 2014 were certified organic labelled, and 4.8% of teas and herbal teas were fair trade or FairWild labelled;
- The percentage of new products with 'ethical + environmental-friendly' claims labelling (fair + organic) being launched in the United States market has been steadily increasing since 2009, and rose 6.6% in 2014.

Because at least 6% (and likely higher) of China's MAP export volume is already certified organic and as some of the main export destinations for Chinese MAP ingredients and products include North American countries such as the United States and European countries such as Germany and the Netherlands – both also major markets for organic ingredients and products – it is reasonable to predict greater demand for Chinese MAPs with sustainability certifications, while taking into consideration the growing trends for linking of organic with fair.

In certain major MAP export destinations where the demand for MAPs with sustainability certifications may not yet be developed or evident, for example Bangladesh, India and Viet Nam, the market potential for organic and fair certified Chinese MAPs will of course not come close to that of European and North American markets. But the market for organic and fair products is evident and growing in some Asian countries and regions, notably Hong Kong and Japan.

Chapter 6 Market and buyer requirements for organic and fair ingredients

Chapter 6 is focused mainly on requirements for exporters of bulk MAP ingredients that are certified organic or certified fair. This chapter provides useful information on labelling, marking, packaging and documentation. Compliance with Voluntary Sustainability Standards (VSS), as evidenced by third-party certification, can also help producers and exporters to comply with other buyer expectations and/or regulatory requirements, such as those related to quality and safety of Chinese MAPs.

1 Fair trade and FairWild labelling

Economic and social sustainability standards-setting organizations have their own rules for marking certified materials and for labelling finished products containing fair-certified ingredients. Table 14 provides web addresses for accessing further information on the labelling and marking requirements of the various fair trade labelling initiatives.

Table 14. Labelling and Marking Rules of Fair Certification and Labelling Initiatives

Control Union Fair Choice Social and Fair Trade Standard Labelling Requirements (Section 4.1)	http://www.controlunionfairchoice.com/documents/CU%20Fair%20Choice%20standard_version%202_August%202011_EN_2.pdf
Ecocert FAIRTRADE Certification Labelling and Communication Rules (Appendix I)	http://www.ecocert.com/sites/default/files/u3/Fair-Trade-standard-Version-3.pdf
Fairtrade International (FLO) Using the FAIRTRADE Marks	http://www.fairtrade.net/using-the-fairtrade-mark.html
Fair Trade Sustainability Alliance (FairTSA) Labelling Guide Information	http://fairtsa.org/licensee-information.html
Fair Trade USA (FTUSA) Label Use Guide	http://fairtradeusa.org/certification/label-usage
FairWild Foundation (FWF) FairWild Labelling Rules	http://www.fairwild.org/labelling-documents/
Institute for Marketecology (IMO) Fair for Life (FFL) Labelling Requirements	http://www.fairforlife.org/pmws/indexDOM.php?client_id=fairforlife&page_id=labelling&lang_iso639=en
Instituto Biodinâmico de Desenvolvimento Rural (IBD) Labelling as EcoSocial Certified (Section 1.6)	http://ibd.com.br/Media/arquivo_digital/879de1d6-ac6a-44e7-a8e8-bb37c7f2597b.pdf

Source: Author's elaboration based on survey

2 Exporting MAP ingredients to the United States

As of 2013, seven bilateral equivalence arrangements were in place for the trade of organic products between countries that regulate organic labelling. Because the United States is the largest national market for certified organic products, it is used here as just one example to consider. Providing the specific rules for export of MAP ingredients to each important trade partner of China is outside of the scope of this report.

Depending on the specific natural ingredient(s) being imported into the United States, one or more governmental agencies may become involved in the inspection of the imported goods, their packaging, labelling and related documentation. These include the Animal and Plant Health Inspection Service (APHIS), Drug Enforcement Agency (DEA), Food and Drug Administration (FDA), Food Safety Inspection Service (FSIS), United States Department of Agriculture (USDA) and the US Customs Service.

In addition to regulatory requirements for the packaging and labelling of imported ingredients, the buyers or importers are likely to have their own specific, additional packaging and labelling requirements, for

example, requirements that the seller's lot number is stencilled on each sack or drum as well as the buyer's item code number and the purchase order number. The buyer may also specify the packaging type (e.g. poly-lined 55-gallon fibre drum) and the pallet type and configuration. In general, natural ingredients should be packed in tightly sealed, lined containers that will protect against cross-contamination, spillage, moisture damage and insect infestation. Basic labelling requirements include:

- English standard common name of the ingredient
- English name of country of origin
- Name and address of the producer or exporting company
- Gross weight expressed in both metric (kilograms or litres) and United States Customary System (pounds or fluid ounces)
- Net and tare weights
- Vendor's lot number (must match lot number on packing list)
- Any other information requested by the buyer (e.g. buyer's item code)

3 Exporting certified organic MAP ingredients

Certain requirements for exporting certified organic MAP ingredients to the United States are provided below as a generalizable example of exports from China for two main reasons:

1. The USDA National Organic Program (NOP) has an equivalency agreement with the Canada Organic Regime, the European Union and Japan. As of 2013, seven bilateral equivalence arrangements were in place for the trade of organic products between countries that regulate organic labelling.
2. The United States is the largest national market for certified organic products.

There are specific labelling requirements for certified organic materials. If the imported natural ingredient is certified organic, the following USDA NOP regulations apply:

Labelling of nonretail containers used for only shipping or storage of raw or processed agricultural products labelled as '100% organic', 'organic' or 'made with organic (specified ingredients or food group(s))'.

- a) Nonretail containers used only to ship or store raw or processed agricultural product labelled as containing organic ingredients may display the following terms or marks:
 - The name and contact information of the certifying agent who certified the handler that assembled the final product;
 - Identification of the product as organic;
 - Special handling instructions needed to maintain the organic integrity of the product;
 - The USDA seal;
- b) The seal, logo or other identifying mark of the certifying agent that certified the organic production or handling operation that produced or handled the finished product. Nonretail containers used to ship or store raw or processed agricultural product labelled as containing organic ingredients must display the production lot number of the product if applicable.

For examples of labels and labelling of non-retail and retail organic containers, visit the USDA NOP Online Training at: <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5098489>

Chapter 7 Certified Chinese MAPs with export market potential

To elicit expert opinions concerning which Chinese MAPs may have the highest export market potential if they were commercially available with dual certification (organic + fair) methods, a written questionnaire with a follow-up meeting (either face-to-face or by Skype or telephone) were used. The interviewees were selected from trading companies that import and distribute Chinese MAPs, finished product companies that use Chinese MAPs in their products, voluntary sustainability standards-setting organizations, and inspection and certification control bodies. See annex IX for a list of interviewee organizations.

Based on a balance of available market data and questionnaire responses, table 15 provides an alphabetical (non-quantified) list of Chinese MAPs that may have the highest export market potential in Europe and/or North America if value-added with both organic and fair certifications. The MAPs shown in table 15 are for the most part TCM species that are not commercially available from other countries with some exceptions, for example andrographis herb (also available from India), Asian ginseng root (also available from Republic of Korea) and cordyceps fungus (also available from Nepal and Bhutan).

Some interviewees, however, said their customers were not asking for or demanding organic + fair certified Chinese MAPs at this time. One interviewee felt that only a small number of current customers would be ready to buy these and pay a premium price. The companies interviewed for this study would probably be among the initiators and would therefore take on the challenge and opportunity to market the organic + fair Chinese MAPs concept to their audience.



Goji berries on sale at the TCM Market, Chengdu, Sichuan (© Josef Brinckmann)

The opportunity is probably higher in North American countries than in European countries due to the difference in regulatory frameworks. One respondent pointed out that as herbal medicinal products (HMPs) in the European Union may not be labelled or marketed with fair certification logos, there is little incentive for companies to seek out certified ingredients for their products. There is no such restriction in the Canadian or United States markets. Furthermore, in the cases where a Chinese MAP can legally be used in a European food or food-supplement product (e.g. Barbary wolfberry fruit, Chinese cinnamon bark, Chinese jujube date, Chinese liquorice root, Chinese star anise fruit, Schisandra berry), the chances for organic + fair certified labelling in Europe would be higher. Herbal foods (e.g. packaged goji berries) or non-medicinal herbal, fruit or spice teas in Europe could be target product categories for Chinese MAPs with organic + fair certification because they do not face the same labelling restrictions that HMPs face.

Table 15. Chinese MAPs with highest export market potential if certified organic & fair / cultivated (C), wild-collected (W), wild-collected but also cultivated (W/C), cultivated but also wild-collected (C/W)

Botanical Name(s)	Common Name	Plant Part(s)	Cult or Wild	CCCCS HS Code
<i>Angelica sinensis</i>	Chinese angelica	Root	W/C	1211.9011
<i>Glycyrrhiza uralensis</i>	Chinese liquorice	Root and rhizome	W/C	1211.9036
<i>Hippophaë rhamnoides</i>	Seabuckthorn	Ripe fruit	W/C	0813.4090
<i>Lycium barbarum</i>	Barbary wolfberry (goji)	Ripe fruit	W/C	1211.9031
<i>Rheum palmatum</i> , <i>R. tanguticum</i> , and/or <i>R. officinale</i>	Chinese rhubarb	Root and rhizome	W/C	1211.9024
<i>Schisandra chinensis</i> or <i>S. sphenanthera</i>	Schisandra	Ripe fruit	W/C	1211.9039
<i>Scutellaria baicalensis</i>	Chinese skullcap	Root	W/C	1211.9037
<i>Cordyceps sinensis</i>	Chinese caterpillar	Fungus	W	1211.9016
<i>Eleutherococcus senticosus</i> (syn. <i>Acanthopanax senticosus</i>)	Eleuthero	Root, rhizome and stem	W	1211.9039
<i>Taraxacum mongolicum</i>	Mongolian dandelion	Herb and root	W	1211.9039
<i>Astragalus membranaceus</i> or <i>A. membranaceus</i> var. <i>mongolicus</i>	Astragalus	Root	C/W	1211.9023
<i>Illicium verum</i>	Chinese star anise	Ripe fruit	C/W	09096110 09096210
<i>Ziziphus jujuba</i>	Chinese jujube date	Ripe fruit	C/W	0813.4030
<i>Andrographis paniculata</i>	Andrographis	Aerial part	C	1211.9039
<i>Cinnamomum cassia</i> (syn.: <i>C. aromaticum</i>)	Chinese cinnamon	Stem bark	C	0906.1900 0906.2000
<i>Panax ginseng</i>	Asian ginseng	Root	C	1211.2091 1211.2099

Source: Author's elaboration based on survey

Notes: HS codes shown in the table are species-specific with the following *italicized* exceptions:

- **HS 1211.9039** (shown for Andrographis, Eleuthero, Mongolian dandelion and Schisandra) is a general code for all 'other' medicinal plants not elsewhere specified or indicated (NESOI).
- **HS 0813.4090** (shown for Seabuckthorn) is a general code for all 'other' dried fruit (including medicinal fruits such as Chinese hawthorn berries and seabuckthorn berries) NESOI

Chapter 8 Buyers and trade promotion

1 Processors, distributors, traders of MAPs with fair trade certifications

Table 16 provides the names of companies listed in the various international fair certified databases as registered processors, distributors or traders of MAPs as opposed to being certified producer operations. For the most part, the list includes companies that process and distribute MAP ingredients to finished product manufacturing companies. Companies that only claim to be 'fair trade' and are not certified or are members or supporters of fair trade organizations but do not actually market any fair certified ingredients or products are excluded from the tables.

The list is not exhaustive, and aims to select mainly those companies most closely associated with the MAP ingredients trade. Other companies listed in the databases that were intentionally excluded from this list were those primarily supplying food ingredients to industry, but only secondarily offering some fair trade flavour, spice or seasoning ingredients in their catalogues.

This listing of companies is relevant for assessing the future market potential of dual certified (organic + fair) wild-collected MAPs because it illustrates that there is already a significant number of distribution / trading companies around the world making a commitment to offer a range of fair certified MAP ingredients (whether cultivated or wild-collected). These would likely be the same companies that could be interested in expanding their catalogues to include FairWild certified MAP ingredients of any origin including China.

Table 16. Selected processors, distributors and traders of fair certified MAP ingredients

Country	Name of distributor / trader	Registered under:
Australia	H.J. Langdon & Companies	FLO Fairtrade
Burkina Faso	Agrifaso SARL	FLO Fairtrade
Burkina Faso	Burkinature SARL	FLO Fairtrade
Cayman Islands	McCormick Global Ingredients Ltd	FLO Fairtrade
Egypt	Delta Spice Land Co.	FLO Fairtrade
Egypt	Egy Group Co.	FLO Fairtrade
Egypt	Giza Seeds and Herbs	FLO Fairtrade
Egypt	Organic Green Co.	FLO Fairtrade
Egypt	Safe Herbs & Spices	FLO Fairtrade
Egypt	SEKEM Group Companies	FLO Fairtrade
Egypt	Spice Farm Company for Export & Import	FLO Fairtrade
Egypt	Wahba For Food Industries	FLO Fairtrade
France	Astier Demarest	EcoCert ESR
France	BASF Beauty Care Solutions	EcoCert ESR
France	Biolandes	EcoCert ESR
France	Herbissima	FLO Fairtrade
France	L'Herbier du Diois	FLO Fairtrade
France	McCormick SAS France	FLO Fairtrade
Germany	AgriMED Hessen w.V.	FairWild
Germany	Florapharm Pflanzliche Naturprodukte GmbH	FLO Fairtrade
Germany	Gebrüder Wollenhaupt GmbH	FLO Fairtrade
Germany	Grünfelder Bio-Logistik GmbH	IMO FFL
Germany	G.W.A Westphal-Tee GmbH	FLO Fairtrade
Germany	Hälssen & Lyon GmbH	FLO Fairtrade

Country	Name of distributor / trader	Registered under:
Germany	HerbaPack GmbH	FLO Fairtrade
Germany	Martin Bauer GmbH & Co. KG	FairWild, FLO Fairtrade
Germany	Merschbrock-Wiese Gewürz GmbH	FLO Fairtrade
Germany	Ph. Seyfried Gewürzmühle GmbH & Co. KG	FLO Fairtrade
Germany	Symrise AG	IMO FFL
Germany	Ulrich Walter GmbH	FLO Fairtrade
Germany	Worlée Naturprodukte GmbH	FLO Fairtrade, IMO FFL
India	AVT McCormick Ingredients Pvt. Ltd	FLO Fairtrade
India	Bergwerff Organic India Pvt. Ltd	FLO Fairtrade
India	Green Valley Organic Spices	FLO Fairtrade
India	Mudar India Exports	IMO FFL
India	Organic India Private Ltd	FLO Fairtrade
India	PDS Organic Spice	FLO Fairtrade
India	Phalada Agro Research Foundation Pvt. Ltd	FLO Fairtrade
India	Plantrich Agritech Pvt. Ltd	FLO Fairtrade
India	Suminter India Organics Pvt. Ltd	FLO Fairtrade
India	Umalaxmi Organics Pvt. Ltd	FLO Fairtrade
India	Vasundhara Sales Corp.	FLO Fairtrade
India	Wayanad Social Service Society (WSSS)	FLO Fairtrade
India	Western Ghats Agricultural Products Processing Pvt. Ltd	FLO Fairtrade
Netherlands	DO-IT Dutch Organic International Trade	IBD EcoSocial
Netherlands	Organic Flavour Co. BV (Euroherb bio)	FLO Fairtrade
Netherlands	Tradin Organic Agriculture B.V.	FLO Fairtrade
Sri Lanka	Bio Foods (Pvt.) Ltd	FLO Fairtrade
Sri Lanka	CBL Natural Foods (Pvt.) Ltd	FLO Fairtrade
Sri Lanka	EOAS Organics (Pvt.) Ltd	FLO Fairtrade
Sri Lanka	Greenfield Bio Plantations (Pvt.) Ltd	FLO Fairtrade
Switzerland	J. Carl Fridlin Gewürze Ltd	FLO Fairtrade
Switzerland	Pronatec AG	EcoCert ESR, FLO Fairtrade
Switzerland	Silvia & Peter Lendi Erboristi S.A.	FLO Fairtrade
UK	Earthoil Plantations Ltd	IMO FFL
UK	Finaly Tea Solutions Ltd	FLO Fairtrade
UK	Organic Herb Trading Co.	FairWild, FLO Fairtrade
UK	Wayfairer Ltd	FLO Fairtrade
USA	Carrubba Inc.	FTUSA
USA	Ciranda Inc.	FLO Fairtrade, IBD EcoSocial
USA	DMH Ingredients, Inc. / Herbal Teas International	FLO Fairtrade, FTUSA
USA	Dried Ingredients LLC	FLO Fairtrade, FTUSA
USA	Eco-Prima Tea Inc.	FTUSA
USA	Frontier Natural Foods Coop	FLO Fairtrade, FTUSA
USA	GloryBee Foods Inc.	FairTSA, FTUSA
USA	High Quality Organics Inc.	FLO Fairtrade

Country	Name of distributor / trader	Registered under:
USA	Improve USA (Pharmachem Laboratories)	IMO FFL
USA	Jedwards International Inc.	FTUSA
USA	Lemur International Inc.	IMO FFL
USA	Martin Bauer Inc.	FairWild, FLO Fairtrade, FTUSA
USA	Mountain Rose Herbs	FLO Fairtrade, IMO FFL
USA	Pure Ground Ingredients	FLO Fairtrade
USA	QTrade Teas and Herbs	FTUSA
USA	RFI Ingredients	IMO FFL
USA	Spicely Organic Spices Inc.	FTUSA
USA	Sun Garden Specialty Teas Inc	FLO Fairtrade, FTUSA
USA	Teawolf	FTUSA
USA	The Lebermuth Company	IMO FFL
Uzbekistan	Silk Road Organik Foods	FLO Fairtrade
Viet Nam	Vi Vang Company	FLO Fairtrade

Source: Author's elaboration based on survey

2 Consumer product brands with organic and fair labelled products

Table 17 provides the names of companies listed in the various fair certified databases as registered brandholders or licensees for fair labelled finished products that contain MAP ingredients. For the most part, the list includes finished product manufacturing and marketing companies that offer herbal dietary supplement products, herbal medicinal products and/or herbal natural food products. These would be some of the most likely brands to consider adding FairWild certified ingredients to their products.

The list is not exhaustive and aims to select mainly those companies most closely associated with the MAP trade. Other companies listed in the databases that were intentionally excluded from this list were those primarily marketing food products that only secondarily contain some fair trade MAP ingredients (e.g. organic and fair trade chocolate bars or smoothie drink products that contain herbs and spices).

Table 17. Selected herbal + natural product brands with products containing fair certified ingredients

Country	Company Name	Fair Labeling Initiatives
Australia	Amazonia	EcoCert ESR
Australia	Nerada Tea	FLO Fairtrade
Australia	Qi Teas	FLO Fairtrade
Brazil	Triunfo do Brasil Ind e Com Ltda	IMO FFL
Canada	Crofter's Food Ltd.	IBD EcoSocial
Canada	Flash Beauté Inc. (Kariderm)	EcoCert ESR
Canada	Sahana Ayurvedic Products Inc.	FLO Fairtrade
Canada	Traditional Medicinals Inc.	FairWild, FLO Fairtrade
Canada	Trans-Herbe Inc.	FLO Fairtrade
France	Arc En Sels	EcoCert ESR
France	Arcadie SA	EcoCert ESR
France	Argandia	EcoCert ESR
France	Arkopharma	EcoCert ESR

Country	Company Name	Fair Labeling Initiatives
France	Cap Cosmetics	EcoCert ESR
France	Euro-Nat	EcoCert ESR
France	Fleurance Nature	EcoCert ESR
France	Groupe Léa Nature	EcoCert ESR
France	Huilerie Emile Noël	EcoCert ESR
France	Karethic France	EcoCert ESR
France	Laboratoire Sicobel	EcoCert ESR
France	Laboratoires E.V. ROIG	EcoCert ESR
France	La Route des Comptoirs	FLO Fairtrade
France	Le Secret Naturel	EcoCert ESR
France	LHS-Naturland	EcoCert ESR
France	L'Occitane en Provence	EcoCert ESR
France	Nohèm Ethic Création	EcoCert ESR
France	Nomade Palize France	EcoCert ESR
France	René Furterer France	EcoCert ESR
France	Sens & Bio	EcoCert ESR
France	Solidarité avec l'Amérique Latine pour le Développement des Communautés (SALDAC)	IMO FFL
France	Société Européenne de Négoce et Fabrication d'Alimentation Saine (SENFAS)	EcoCert ESR
France	terre d'Oc	EcoCert ESR
Germany	Abtswinder Naturheilmittel GmbH & Co. KG	FLO Fairtrade
Germany	Fuchs Gewürze GmbH	FLO Fairtrade
Germany	Ostfriesische Tee Gesellschaft (Laurens Spethmann GmbH & Co.KG)	FLO Fairtrade
Germany	Saphir (Merschbrock-Wiese Gewürz GmbH)	FLO Fairtrade
Macedonia	Alkaloid AD Skopje	FairWild
Morocco	Zit Sidi Yassine SARL	EcoCert ESR
Peru	Bio Cunas	CU FairChoice
Sri Lanka	Baraka (Bio Extracts (Pvt.) Ltd	CU FairChoice
South Africa	Cape Herb and Spice Company (Pty) Ltd	FLO Fairtrade
South Africa	TopQualiTea South Africa (Pty) Ltd	FLO Fairtrade
UK	Clipper Teas	FLO Fairtrade
UK	Equal Exchange	FLO Fairtrade
UK	Hamstead Tea	FLO Fairtrade
UK	Neal's Yard Remedies	EcoCert ESR, FairWild, FLO Fairtrade, IMO FFL
UK	Pukka Herbs	FairWild, FLO Fairtrade
USA	Alaffia US, LLC dba Alaffia	IMO FFL
USA	Bhakti Chai	FTUSA
USA	Brandstorm Inc.	IMO FFL
USA	Chai Wallah	FTUSA
USA	Choice Organic Teas (Granum Inc.)	FTUSA

Country	Company Name	Fair Labeling Initiatives
USA	Davidson's Organics Teas	FTUSA
USA	David's Tea	FTUSA
USA	Dr. Bronner's Magic Soaps	IMO FFL
USA	Equal Exchange	FLO Fairtrade, IMO FFL
USA	Guayaki Sustainable Rainforest Products Inc.	IMO FFL
USA	Healthy Beverage Company	FTUSA
USA	Honest Tea	FTUSA
USA	J&R Port Trading Inc.	FTUSA
USA	Java City	FTUSA
USA	Light of Day Organic Teas	FTUSA
USA	Mate Revolution Inc. DBA EcoTeas	IMO FFL
USA	Neal's Yard Remedies (NYR) Organic US	EcoCert ESR, FairWild, FLO Fairtrade, IMO FFL
USA	Numi Organic Tea	FTUSA
USA	Octavia Tea	FTUSA
USA	Paromi Tea	FTUSA
USA	Rishi Tea	FTUSA
USA	Runa	FTUSA
USA	Sacha Vida	CU Fair Choice
USA	Sambazon USA	EcoCert ESR
USA	Spicely® Organics	FTUSA
USA	Starwest Botanicals	FTUSA
USA	Stash Tea	FTUSA
USA	Sterling Tea LLC	FTUSA
USA	The Republic of Tea	FTUSA
USA	Tibet Tea	FTUSA
USA	Traditional Medicinals Inc.	FairWild, FTUSA
USA	Zhena's Gypsy Tea	FTUSA

Source: Author's elaboration based on survey

3 Organic and fair trade MAP ingredients promotion

Relevant international trade events in Europe and North America for producers, processors and suppliers of sustainable (organic and fair) botanical ingredients include the following:

Canada

BÉNÉFIQ International Rendezvous on Health Ingredients Conference and Exhibition

<http://www.benefiq.ca/eng/>

Occurring every two years, Bénéfiq includes an exhibition with suppliers of natural ingredients used in natural health products, functional foods, medical foods and cosmeceuticals.

Europe

BIOFACH

<https://www.biofach.de/en/>

Although mainly a trade show for exhibitors of certified organic finished products, producers of certified organic botanical raw materials as well as producers and suppliers Fairtrade and FairWild medicinal and aromatic plants and extracts from all over the world attend and exhibit at the BioFach in Germany each February. This is one of the most important international trade shows for the entire sustainable botanical supply chain from field and forest to finished product.

HEALTH INGREDIENTS EUROPE AND NATURAL INGREDIENTS (Hi Europe & Ni)

<http://www.figlobal.com/en/hieurope/>

HiE & Ni is one of leading global events for ingredients used in dietary supplements, nutraceuticals, functional foods and healthy beverages.

VITAFOODS EUROPE – The Global Nutraceutical Event

<http://www.vitafoods.eu.com/>

Annual event each May in Geneva, Switzerland, featuring exhibitors who supply nutraceutical ingredients, raw materials and services for the following sectors: nutraceuticals, functional food, dietary supplements, nutricosmetics, pharmaceuticals, health food, natural and herbal, and functional beverages.

United States of America

ENGREDEA

<http://www.engredea.com/>

Engredea (occurs annually in Anaheim, California) brings together the community of leading suppliers and manufacturers to source new ingredients, packaging, technologies, equipment and services in the global nutrition industry. Engredea is co-located with Natural Products Expo West, the largest exhibition in the United States for finished natural products.

INGREDIENT MARKETPLACE

<http://marketplace.supplysideshow.com/>

Ingredient Marketplace features more than 350 global exhibitors offering more than 5,000 ingredients. The target audiences are professionals in the following industries: dietary supplement, food and beverage, cosmetics, personal care, animal nutrition, pharmaceutical and sports nutrition.

SUPPLYSIDE WEST

<http://west.supplysideshow.com/>

SupplySide® West (occurs annually in Las Vegas, Nevada) brings together the suppliers and buyers that drive the dietary supplement, food, beverage, personal care and cosmetics marketplace. Leaders from the executive management, research and development, quality assurance/quality control and marketing teams participate in this show each year.

4 Organic and fair finished products promotion

Relevant international trade events in Europe and North America for manufacturers and marketers of finished natural products with organic and fair certification to attend and/or exhibit at include the following:

Canada

CANADA HEALTH FOOD ASSOCIATION (CHFA): CHFA EAST / CHFA WEST / CHFA QUÉBEC

<https://www.chfa.ca/tradeshows/>

CHFA puts on three trade shows annually for marketers of natural and organic health products; there are also exhibitors of fair trade products. These shows are: CHFA East (Toronto, Ontario) with more than 800 exhibitors, CFHA West (Vancouver, British Columbia) with more than 650 exhibitors, and CFHA Québec (Montréal, Québec) with 100 exhibitors.

Europe

BIOFACH

<https://www.biofach.de/en/>

This is one of the most important international trade shows for the entire sustainable botanical supply chain from field and forest to finished product. There are exhibitors of organic and fair botanical raw materials, extracts and oils, and finished products packed for retail. The relevant standards-setting organizations and inspection and certification organizations also exhibit at the BioFach each February in Germany.

FAIR HANDELN international exhibition focusing on fair trade and globally responsible trade

<http://www.messe-stuttgart.de/en/fairhandeln/>

FAIR HANDELN is an exhibition for everyone who is actively committed to globally responsible and sustainable trade and activities. It acts as a marketplace for specialist and general retailers who sell fair trade products. Corporate social responsibility, sustainable finance, sustainable tourism and development cooperation are also key topics presented at FAIR HANDELN.

United States of America

GREEN FESTIVAL

<http://www.greenfestivals.org/>

Green Festival®, occurring five times a year in different cities of the United States (Los Angeles, California; New York City, New York; Portland, Oregon; San Francisco, California; and Washington, D.C.) is a vibrant, dynamic marketplace where companies and organizations showcase their green products and services, including certified organic and fair trade herbal and natural health products. Green Festival has joined forces with Messe Stuttgart, a leading international tradeshow organizer producing Europe's largest consumer show on sustainability, green products and fair trade. This dynamic partnership leverages extensive networks and tradeshow experience to expand the reach and impact of Green Festival.

NATURAL PRODUCTS EXPO EAST / NATURAL PRODUCTS EXPO WEST

<http://www.expoeast.com/> / <http://www.expowest.com/>

Natural Products Expo East, with more than 1,400 exhibitors and over 22,000 attendees, occurs annually in Baltimore, Maryland. Natural Products Expo West, with more than 3,000 exhibitors and over 60,000 attendees, occurs annually in Anaheim, California. Expo West is the biggest show in the United States for natural, organic, non-GMO and fair trade labelled products.

Chapter 9 Conclusions and recommendations

Market and trade data referred to in this report generally show that consumer demand for certified organic ingredients and products continues to increase year-on-year. The data also show that demand for ingredients and products with dual certification (organic + fair) is also growing. While the sustainable-products consumer was once satisfied with organic certification, this is no longer the case. The educated consumer is becoming more familiar with the concept that sustainability is built on three interrelated pillars: environmental protection, social equity and economic viability. In the case of herbal medicinal products, determining whether a product is sustainable can take into consideration the long-term survival of the people, plants and animals where the herbs are harvested (health of the whole ecosystem) and guarantees of equitable trade to incentivize local herb-harvesting communities to serve as good stewards of the ecosystem for sustainable trade and use of biodiversity products.

International standards are available that, if implemented, can serve not only as effective resource-management tools, but also as effective ways for local and rural communities to boost household income due to the increasing global demand for certified organic + fair products. For cultivated herb crops, implementing organic agriculture standards along with suitable fair trade standards is a possibility. For wild crops, implementing organic wild standards along with the FairWild standard is another possibility to consider. The FairWild Standard appears to be the only international standard that was developed and implemented specifically for the sustainable management, use and trade of wild MAPs. Other international standards that, in theory, can be applied to wild MAP crops for certification tend to borrow heavily with reference to the FairWild Standard.

Because a significant amount of Chinese MAP materials are products of biodiversity, traditionally wild harvested by local communities for household and village income, and because a significant number of these materials destined for the export market are already becoming organic certified, there appears to be an opportunity for Chinese MAP wild-collection enterprises to add value with FairWild certification. Dual certification of organic wild with FairWild could strengthen long-term buyer-seller trade relationships and increase earnings and community investment. There may also be an opportunity to link such products to the market for genuine origin or geographical indication products promoted with a specified authentic and 'wild' quality and support claims about quality, traceability and efficacy of TCM ingredients.

According to information for the Biofach China 2015 organic trade show, Chinese organic food exports are steadily increasing 5% per year and already account for 5% of the international organic food market. There is some overlap in calculations of organic food ingredients and organic MAP ingredients, because some articles fall into both categories. For example, wild liquorice root is both food and medicine. China is indisputably the world's leading producer, user and exporter of MAPs. As shown in table 6, China exported more than 1.3 billion kg of MAPs in 2013, with a reported customs value exceeding US\$ 5 billion.

In individual cases, species-specific and/or country-specific, China's share of organic may be higher than the current general average of 5%. Using examples of two MAPs imported by the United States, ginger rhizome and tea leaf, this study found that 9.3% of all imported tea leaf was certified organic and 13.2% of all imported ginger rhizome was certified organic. China is a major origin for both MAP articles.

Given the fact that 100% of fair trade certified herbs and spices in the United States are also certified organic, and 84% of fair trade certified tea leaf in the United States are also certified organic, and that there is a trend for dual- or multi-certification of herbal and natural products fair trade, organic and non-GMO labelling, it is reasonable to suggest that Chinese producers and exporters of certified organic MAPs have the opportunity to expand global market share by value-adding towards dual certification of organic + fair.

Based on data provided in chapter 5, it appears reasonable to suggest that there may be a current market for between 5% and 15% of China's total MAP exports with organic certification, of which about 5% to 10% may have additional market opportunities if value were further added with dual certification of organic + fair.

Conversely, if China does not begin to actively participate in the fair trade subsector for MAPs, it may begin to lose organic market share to other Asian countries that are actively involved in both the fair trade and

organic subsectors, most notably India, but also Sri Lanka and Viet Nam. Analysis of the remaining world market shows a linkage of fair to organic as a consumer expectation. Enabling wild-collection operations in China to implement additional sustainability standards (such as the FairWild Standard) and achieving certification for the export market would not only help to ensure the long-term survival and sustainability of important TCM MAP species, but would bring additional household income and community investment to rural communities engaged in wild-collection of MAPs.

Annex I Organic inspection and certification organizations in China

Chinese Organic Certifiers	Organization Logo
<p>BCS OEKO-GARANTIE China Co. Ltd Hunan Biological and Electromechanical Polytechnic Changsha, Donghu, Hunan Province 410127 China T: + 86 731 8463 7041 / F: + 86 731 8463 6932 http://www.bcs-oeko.com/en_contacts_asia.html</p>	
<p>Beijing Continental Hengtong Certification Co. Ltd Room 303 in F3, Mingliuweilai Mansion Majiapu West Road, Fengtai District 100068 Beijing China Tel: +86 10 631 806 81 / Fax: +86 10 63012535 http://www.bjchtc.com/en/</p>	
<p>Beijing Co-ops Integrity Certification Center Room 304,307,311,1# Building, No.15, Zuojiazhuang, Chaoyang District, Beijing 100028, China Tel: +86 010-56174893 / Fax: 010-88850617 http://www.co-ic.com/en/</p>	
<p>Beijing Ecocert Certification Center Co. Ltd No.10 Tianxiu Road, Administrative Building Beijing Construction University, Room 4015 100091 Haidian District, Beijing, China Tel: +86 106 2827070 / Fax: +86 106 2827958 http://www.ecocert.cn/</p>	
<p>Beijing Orient Jiahe Certification Co. Ltd Administration Office Building Room 5015, Tianxiu Road No.10, Xiaojiahe, Haidian District, Beijing 100193 China Tel: +86 010-62827900 / Fax: +86 010-62828872 http://www.jiahe.org.cn/</p>	
<p>Beijing Zhong An Zhi Hun Certification Center A 22th floor, Free Town, No.58, South Road, East 3rd Ring Road, Chaoyang District, Beijing 100020 China Tel: +86 010-58673399 / Fax: +86 010-58673519 http://www.zazh.com/</p>	
<p>CERES Shanghai Certification Co. Ltd Room No. 505, Floor 5, No. 1023 (Guoke Mansion) of Kongjiang Road, Yangpu District Shanghai 200093 China Tel: +86 (21) 61 48 36 60-0 / Fax: +86 (21) 61 48 36 63 http://www.ceres-osc.com/</p>	
<p>Certification Center of Northwest Agriculture and Forestry University (NWUAF) No.28, Xinong road, Yangling District, Shanxi Province 712100, China Tel: +86 029-87091495 / Fax: +86 029-87091495</p>	

Chinese Organic Certifiers	Organization Logo
<p>CHC (Beijing WuYue Hua Xia Management and Technique Center) Apartment 304, No. 1 Building Li Heng Ming Yuan No. 23 South Bin He Road, Guang an Men 100055 Xicheng District, Beijing China Tel: +86 10 6339 7958 / Fax: +86 10 6326 6276 http://www.bjchc.com.cn/</p>	
<p>China Environmental United (Beijing) Certification Center Co. Ltd Floor10, Tower A, No.1 Yuhui South Road, Chaoyang District, Beijing, 100029 China Tel: +86 010-59205948 / Fax: +86 010-59205946 http://www.sepacec.com/cecen/</p>	
<p>China Food Heng Xin (Beijing) Certification Center of Quality Building 7, Section 7, No.188, the South 4th Ring West Road, Fengtai District, Beijing 100070 China Tel: +86 010-58360169 / Fax: 010-58362107</p>	
<p>China Organic Food Certification Center No. 59, Xueyuan South Road 100081 Haidian District, Beijing, China Tel: +86 10 62132009 / Fax: +86 10 62131330 http://www.ofcc.org.cn</p>	
<p>China Quality Certification Center (CQC) Section 9, NansihuanXilu (the South Fourth Ring Road), West Road 100070 Beijing, China Tel: +86 108388 6581 / Fax: +86 108388 6823 http://www.cqc.com.cn/english/</p>	
<p>China Quality Mark Certification Group (CQM) No.33 Zengguang Road 100048 Haidian District, Beijing, China Tel: +86 1068477288 / Fax: +86 1068437171 http://www.cqm.com.cn/</p>	
<p>Control Union China Room 1301, Jintiandi International Building, 998 Renmin Road, Shanghai, China Tel : +86 21 63550933 / Fax : +86 21 63550922 http://www.controlunion.com/en</p>	
<p>Fangyuan Organic Food Certification Center Flat A, 11/F LiYang Commercial Building No.106 Huanghe South Street 110031 Huanggu District, Shenyang City, Liaoning Province, China Tel: +86 248 6808585 / Fax: +86 248 6806565 http://www.fofcc.org.cn/</p>	
<p>Guangdong Zhongjian Certification Co. Ltd 4F, Huajiang Building, 227 Guangzhou Dadaozhong, Guangzhou 510600, China Tel: +86 020-66390901 / Fax: +86 020-66390999 http://www.gzcc.org.cn/</p>	
<p>Hangzhou WIT Assessment Co. Ltd 17-18 Floor, Hengxin Mansion, No.588 Jiangnan Avenue, Binjing District, Hangzhou, 310052 China Tel: +86 0571-87901296 / Fax: +86 0571-87901360 http://www.wit-int.com/</p>	

Chinese Organic Certifiers	Organization Logo
<p>Heilongjiang Province Agricultural Product Quality Certification Center No.49, Xiangshun Street, Xiangfang District, Harbin, Heilongjiang Province 150036 China Tel: +86 0451-87979267 / Fax: +86 0451-87979267</p>	
<p>Liaoning Liaohuan Certification Center Room 405, 406, No.34, ChongShan East Road, HuangGu District, ShenYang, Liaoning Province 110031 China Tel: +86 024-31018840 / Fax: +86 024-31018836</p>	
<p>Organic Food Development and Certification Center of China 8 Jiang-Wang-Miao Street 210042 Nanjing, Jiangsu Province, China Tel: +86 25 85287236 Fax: +86 25 85419083 http://www.ofdc.org.cn/en/</p>	
<p>Organic Tea Research and Development Center (OTRDC), Tea Research Institute (TRI), Chinese Academy of Agricultural Sciences (CAAS) Yunqi Road 1, Hangzhou 310008, China Tel: +86 0571-86650591 / 86650449 / 86653152/53 Fax: +86 0571-86653151 http://www.organicteachina.com/</p>	
<p>Overseas Merchandise Inspection Co. Ltd Dalian OMIC Merchandise Inspection Co., Ltd. (Dalian OMIC) No.63, Yongfeng Street, Xigang District, Dalian 116011 China / Tel: (86) 411-8370-5507, 8368-9641 / Fax: (86) 411-8368-9646 https://www.omicnet.com/</p>	
<p>Tse-Xin Organic Certification Corporation (TOC) 7 FI, No. 75, Sec 4, Nanjing E Road, Taipei, 105 Chinese Taipei Tel: 886 2 2546-0654 ext 507 http://tw-toc.com/en/</p>	
<p>Xinjiang Production and Construction Corps Scientific Research Institute of Environmental Protection No.159, Hongshan Road, Urumqi, Xinjiang Uyghur Autonomous Region 830002 China Tel: +86 0991-2325271 / Fax: +86 0991-2819402</p>	
<p>Zhejiang Gainshine Assessment Co. Ltd 25th Floor, New Century Mansion, No.15 Miduqiao Road, Hangzhou, Zhejiang 310005 China Tel: +86 0571-85067941 / Fax: +86 0571-85067849 http://www.gac.org.cn/</p>	

Source: Author's elaboration based on survey

Annex II Chinese producers and traders of certified organic MAPs

Chinese producers and traders of certified organic MAPs / certifying agent / main certified MAPs / wild (W) or cultivated (C)

Operation name	Certifying agent	Main certified MAPs	W/C
Anqiu Jiaying Food Co. Ltd	CERES GmbH	Ginger rhizome	C
Aotou Village Wild Collection Project of Yongan Huachang Bamboo Industrial Co. Ltd	IMO China (formerly)	Bamboo	W
Baiyunshan State Forestry Tea Farm	IMO China (formerly)	Eucommia leaf, tea leaf	C
Beijing Aoge Organic Agriculture Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	C
Bioway (Xi'An) Organic Ingredients Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	W/C
Botanicalink Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	W/C
Chaling Mijiang Tea Industrial Development Co. Ltd	IMO China (formerly)	Jasmine flower, tea leaf	C
Changbai Mountain Royal Ginseng Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	C
Changsha County Jinjing Tea Factory	IMO China (formerly)	Tea leaf	C
Chengda Development Co. Ltd	BCS-Ökogarantie GmbH	Asian ginseng root	C
Chinaherb Pharmacognosy Technology Co. Ltd	CERES GmbH	Medicinal herbs and fungi	W
Conseco Seabuckthorn Co. Ltd	CERES GmbH	Sea buckthorn berry, seed and oils	W
Dandong Junao Foodstuff Co. Ltd	BCS-Ökogarantie GmbH	Mushrooms	W
Delingha City Qaidam Anti-Desertification LLC	CERES GmbH	Barbary wolfberry fruit (goji berry)	W
Dulan Rutian Wolfberry	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Enshi City Yiming Organic Tea Development Co. Ltd (Tianwan Tea Farm)	IMO China (formerly)	Tea leaf	C
Fuding City Green Source Tea Industry Co., Ltd. (Guoyang Tea Farm)	IMO China (formerly)	Tea leaf	C
Fujian Aton Green Garden Tea Industrial Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Fujian Blue Lake Foods Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Fujian Everest Imp. & Exp.Trad. Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Fujian Fuding Dongnan White Tea Imp. & Exp. Co. Ltd (Organic Tea Base)	IMO China (formerly)	Tea leaf	C
Fujian Fuding Hengchunyuan Tea Co. Ltd. (Tianhu Tea Farm)	IMO China (formerly)	Tea leaf	C
Fujian Greenleaf Tea Enterprises Development Co. Ltd (Tangling Tea Farm)	IMO China (formerly)	Tea leaf	C
Fujian Province Anxi County Xingxi Tea Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Fujian Province Tianhu Tea Co. Ltd	IMO China (formerly)	Tea leaf	C

Operation name	Certifying agent	Main certified MAPs	W/C
(Taimushan Lvxeuya Organic Tea Farm)			
Fujian Rifeng Ecology Tea Industrial Co. Ltd (Zhoudun Tea Base)	IMO China (formerly)	Tea leaf	C
Fujian Wuyishan National Nature Reserve Lapsang	BCS-Ökogarantie GmbH	Tea leaf	C
Fujian Yada Group (Organic Bamboo Shoot Base)	IMO China (formerly)	Bamboo	W
Fujian Yinlong Tea Science Technology Co. Ltd (Bailin Younai Cological Tea Garden)	IMO China (formerly)	Tea leaf	C
Gansu Cheezheng Tibetan Medicine Marketing Co. Ltd	CERES GmbH	Medicinal herbs and fungi	W
Gaofeng Tea Farm	IMO China (formerly)	Tea leaf	C
Golden Future Flavors & Fragrances Co. Ltd	BCS-Ökogarantie GmbH	Litsea cubeba seed oil	W
Golmud Yilin Gojiberry Tech Development Co. Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Green Fountain Yunan Tea Co. Ltd (Mang Bai Organic Plantation)	IMO China (formerly)	Black tea leaf, Chinese rose flower, green tea leaf	C
Guangxi Innov Ltd. (Wild Collection Project)	IMO China (formerly)	Chinese blackberry leaf, Chinese star anise fruit	W
Guanshan Organic Tea Farm	IMO China (formerly)	Ginkgo leaf, Sweet osmanthus flower, wintersweet flower (Chimonanthus)	C/W
Guyuan Shimao Lijing Agricultural Science And Technology Co. Ltd	Ecocert S.A.	Barbary wolfberry fruit (goji berry)	C
Hangzhou Linan Oriental Tea Applied Technology Research Institute (Longjingqiao Tea Farm)	IMO China (formerly)	Ginkgo leaf, tea leaf	C
Heng County Good Young Co. Ltd	BCS-Ökogarantie GmbH	Jasmine flower, tea leaf	C
Hetian Taohuashi Jujube Co. Ltd	Ecocert S.A.	Chinese red jujube date	C
Huangshan Biyun Tea Factory	BCS-Ökogarantie GmbH	Chinese rose flower, jasmine flower, sweet osmanthus flower, Tea leaf	C
Huangshan City Qiyunshan Natural Foodstuff Co. Ltd (Maoshan Tea Farm)	IMO China (formerly)	Tea leaf	C
Hubei Jiarun Tea Co. Ltd (Yangjiapo Tea Farm) (formerly Wuhan Jiarun Tea Co. Ltd)	IMO China (formerly)	Jasmine flower, rose flower, sweet osmanthus flower, tea leaf	C
Hunan Chenzhou Jietan Tea Co. Ltd (Qingshan Tea Farm)	IMO China (formerly)	Jasmine flower, tea leaf	C
Hunan Huitong Baotian Tea Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
iangle Juncao Ganoderma Biotechnology Co. Ltd	IMO China (formerly)	Reishi mushroom (Ganoderma)	C
Inner Mongolia Spring Mountain Beverage Products Co. Ltd	CERES GmbH	Sea buckthorn berry and leaf	W
Jiangsu Ruikang Organic Food Co. Ltd	Ecocert S.A.	Liquorice root and other medicinal and aromatic plants	W/C

Operation name	Certifying agent	Main certified MAPs	W/C
Jiangxi Wuyuan Dazhangshan Organic Food Co. Ltd	BCS-Ökogarantie GmbH	Ginkgo leaf, Japanese tea seed, rose flower, sweet osmanthus flower	C
Jiangxi Wuyuan Dazhangshan Organic Food Co. Ltd	BCS-Ökogarantie GmbH	Ginkgo leaf, Japanese tea seed, rose flower, sweet osmanthus flower	C
Jiangxi Wuyuan Dazhangshan Organic Food Co., Ltd.	BCS-Ökogarantie GmbH	Jasmine flower, magnolia flower	C
Jilin Tianzhu Food Co. Ltd	BCS-Ökogarantie GmbH	Pine nut	W
Juxiangzhai Organic Spices Co. Ltd Wenshan Yunnan (Qiubei Farm)	IMO China (formerly)	Cinnamon bark, ginger rhizome, Job's tears	C
Kaize Group Ltd	BCS-Ökogarantie GmbH	Basil leaf, garlic bulb, ginger rhizome, horseradish root, lavender flower, parsley leaf	C
Lan Cang 101 Tea Plantation Co. Ltd	IMO China (formerly)	Chinese mistletoe herb (W), tea leaf (C)	W/C
Lancang Ancient Tea Co. Ltd	IMO China (formerly)	Tea leaf	C
Liaoning Zhenlong Native Produce Holding Co. Ltd	BCS-Ökogarantie GmbH	Pine nut, wild apricot kernel	W
Lin'An Dayang Tea Industry Co. Ltd	BCS-Ökogarantie GmbH	Ginkgo leaf, peppermint leaf, tea leaf	C
Linzhi Snowland Recourse Science and Technology Co. Ltd (related to Cheezheng Group)	CERES GmbH	Medicinal herbs and fungi	W
Longyuan Tea Factory	IMO China (formerly)	Tea leaf	C
Mannong Organic Tea Farm	IMO China (formerly)	Tea leaf	C
Meihekou City Jinfeng Co. Ltd	CERES GmbH	Pine nut	W
Meihekou City Yufeng Lizhen Foods Co. Ltd	CERES GmbH	Mushrooms and nuts	W
Menglai And Mengjiao Chashan Tea Farm	IMO China (formerly)	Tea leaf	C
Minghuang Tea Farm	IMO China (formerly)	Tea leaf	C
Naturz Organics (Dalian) Co. Ltd	BCS-Ökogarantie GmbH	Medicinal herbs and extracts	C/W
Nikkei Tianhai Organic Ganoderma Lucidum Production Base Of Sichuan Tianhai Agriculture Co. Ltd	IMO China (formerly)	Reishi mushroom (Ganoderma)	C
Ningxia Easy Joy Corp. Sinopec	Ecocert S.A.	Medicinal and aromatic plants	C/W
Ningxia Love Goji Biotechnology Development	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Ningxia Qixiang Biologic Foodstuff Co. Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Ningxia Shengqile Biological And Food Engineering	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Ningxia Zaokang Gojiberry Inc.(Shangqu Organic Goji Base)	IMO China (formerly)	Barbary wolfberry fruit (goji berry)	C
Ningxia Zhengyuan Wuzhong Muslim Food Co. Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Orient Tea & Commodities Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Beijing Geng-Du Biodynamic Co. Ltd Phoenix Hills Commune	IMO China (formerly)	Herbs and spices	C

Operation name	Certifying agent	Main certified MAPs	W/C
Pingfu Organic Jasmine Flower Tea Garden	IMO China (formerly)	Jasmine flower, magnolia flower	C
Pingwu Shuijing Traditional Chinese Medicinal Materials Cooperative	CERES GmbH (previously IMO)	Southern schisandra berry	W
Puer City Yuansheng Tea Factory	IMO China (formerly)	Tea leaf	C
Qian Li International Co. Ltd (Shanghai)	CERES GmbH	Medicinal herbs and fungi	W
Qinghai Chaidamu Hi-Tech	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Qinghai General Health Bio-Science Co. Llc. (Organic Sea Buckthorn Collection Base)	IMO China (formerly)	Sea buckthorn berry, seed, juice	W
Qinghai Jiahe Bio-Engineering Co. Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Qinghai Saint-Peak Biotech Co. Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Qinghai Tsinghua Biotry Bio-Tech Co. Ltd	BCS-Ökogarantie GmbH	Sea buckthorn berry, seed, oils and extracts	W
Qinghai Wanlihong Green Ecological Development	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	C
Qingyuan Xinzhou Organic Edible Fungus Products Co. Ltd	IMO China (formerly)	Black hoof (<i>Phellinus linteus</i>), Chaga (<i>Inonotus obliquus</i>), Chanterelle (<i>Cantharellus cibarius</i>), Chinese truffle (<i>Tuber sinensis</i>), Cordyceps fungus (<i>Cordyceps militaris</i>), king bolete (<i>Boletus edulis</i>), red heart of pine (<i>Phellinus pini</i>), tinder conk (<i>Fomes fomentarius</i>), turkey tail mushroom (<i>Coriolus versicolor</i>), Zhu ling sclerotium (<i>Polyporus umbellatus</i>)	W
San Yuan Foodstuff Group Co. Ltd	BCS-Ökogarantie GmbH	Pine nut, shiitake mushroom, wood ear fungus	W
Shaanxi Jiahe Phytochem Co. Ltd	BCS-Ökogarantie GmbH	Medicinal herbs and fungi	W
Shaanxi Jiaxian County Nature Organic Food	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry)	W
Shanxi Bio-Herb Health Technology Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	W/C
Shanxi Qixian Qingshan Green Ecological	BCS-Ökogarantie GmbH	Chinese red jujube date, Chinese rose flower	C
Shanxi Techteam Jinong Humic Acid Product Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	W/C
Shaoxing County Shunjiang Tea Industry Co. Ltd (Xuxingshan Tea Farm)	IMO China (formerly)	Bamboo (W), tea leaf (C)	W/C
Shaoxing Royal Tea Village Co. Ltd (Organic Tea Base)	IMO China (formerly)	Mulberry leaf, tea leaf	C
Sichuan Onward International Trade Co. Ltd	Ecocert S.A.	Medicinal and aromatic plants	W/C
Sichuan Yanshan Traditional Chinese Medicine Co. Ltd	CERES GmbH	Medicinal herbs, fungi and mushrooms	W/C
Siping Long Time Green Foods Co. Ltd	CERES GmbH	Wild forest berries	W
Tampico Trading (Hong Kong) Ltd	BCS-Ökogarantie GmbH	Barbary wolfberry fruit (goji berry), flax seed, pumpkin kernel	C

Operation name	Certifying agent	Main certified MAPs	W/C
Tangli Tea Farm (Huangshan Tea Group Co. Ltd)	IMO China (formerly)	Tea leaf	C
Tangut (China) Corporation Ltd	BCS-Ökogarantie GmbH	Desert broomrape stem, sea buckthorn berry	W
Tea Farm of Guorun Huangshan Taohuayuan Organic Tea Co. Ltd	IMO China (formerly)	Tea leaf	C
Tibetan Indigenous Industry Co. Ltd	BCS-Ökogarantie GmbH	Black tiger paw (<i>Sarcodon aspratus</i>), chanterelle, Chinese truffle, cordyceps mushroom, fragrant orchid (<i>Gymnadenia conopsea</i>), king bolete mushroom, yellow morel, matsutake, musk orchid fruit (<i>Herminium monorchis</i>), rhodiola root, Sichuan fritillaria bulb	W
Tonghua Linyuan Ginseng Medicine Co. Ltd (Wild Collection Unit)	IMO China (formerly)	Akebia stem, chrysanthemum flower, fennel fruit, ginger rhizome, honey fungus (<i>Armillariella mellea</i>), honeysuckle flower, reishi mushroom (<i>Ganoderma</i>), rugose rose flower bud, Schisandra berry, wood ear fungus (<i>Auricularia auricular</i>)	W/C
Tunxi Shiyan Tea Farm Of Huangshan Sungta Industry Co. Ltd	IMO China (formerly)	Tea leaf	C
Weishe Organic Farm & Xingyi Chenshi Ginger Development Co. Ltd	IMO China (formerly)	Ginger rhizome	C
Wenshan Gaotian Panax Notoginseng Growing Industry Base Co. Ltd	CERES GmbH	Tienchi ginseng root	C
Wu Yi Star Tea Industrial Co. Ltd	IMO China (formerly)	Tea leaf	C
Wuhan Yude Tea Co. Ltd (Hong'an Huolianfan Organic Tea Base)	IMO China (formerly)	Jasmine flower, Tea leaf	C
Wuyishan Organic Bamboo Industries Co., Ltd.	IMO China (formerly)	Bamboo leaf, Bamboo stem	W
Wuyishan Zhongyuan Organic Tea Industry Co., Ltd.	BCS-Ökogarantie GmbH	Tea leaf	C
Wuyuan Z.G.S. Tea Industries Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Xinjiang Hongheyuan Organic Agriculture Co. Ltd	CERES GmbH	Chinese red jujube date	C
Xixia County Ruilong Industry Development Co. Ltd	CERES GmbH	Tea leaf	C
Yili Hcoean Lavender Hc Spice Bio-Tech Co. Ltd	CERES GmbH	Basil leaf, chamomile flower, fennel fruit, hyssop herb, lavender flower, lemon balm leaf	C
Yingfeng Foods Co. Ltd	BCS-Ökogarantie GmbH	Ginger rhizome	C
Yingfeng Foods Co. Ltd	BCS-Ökogarantie GmbH	Ginger rhizome	C
Yiyang Sanyi Zhufeng Tea Co. Ltd (Yanglinao Organic Tea Farm)	IMO China (formerly)	Tea leaf	C
Yunnan Landsun Tea Co. Ltd (Dacaodi Tea Farm)	IMO China (formerly)	Tea leaf	C
Yunnan Mengban Tea Farm Of Yunnan Yongde Ziyu Tea Co. Ltd	IMO China (formerly)	Tea leaf	C

Operation name	Certifying agent	Main certified MAPs	W/C
Zhe Jiang Sixian Tea Co. Ltd (Geyang Tea Farm)	IMO China (formerly)	Jasmine flower, tea leaf	C
Zhejiang Baixing Foods Co. Ltd	IMO China (formerly)	Abalone mushroom (<i>Pleurotus abalonus</i>), black fungus, bolete mushroom, button mushroom (<i>Agaricus bisporus</i>) Murrill mushroom (<i>Agaricus blazei</i>)	W/C
Zhejiang Caiyunjian Tea Industry Co. Ltd (Jinshan Tea Farm)	IMO China (formerly)	Tea leaf	C
Zhejiang Camel Transworld Fuliang Farm	IMO China (formerly)	Tea leaf	C
Zhejiang Chunan New Continent Tea Co. Ltd	BCS-Ökogarantie GmbH	Tea leaf	C
Zhejiang Fangge Pharmaceutical Industry Co. Ltd	IMO China (formerly)	Maitake mushroom, reishi mushroom (<i>Ganoderma</i>), shiitake mushroom	C
Zhejiang Gengxiang Organic Tea Development Co. Ltd (Organic Tea Farm)	IMO China (formerly)	Tea leaf	C
Zhejiang Skyherb Ingredients Co. Ltd	CERES GmbH	Tea leaf and extracts	C
Zhejiang Tianci Ecological Technology Co. Ltd	BCS-Ökogarantie GmbH	Sweet osmanthus flower, tea leaf	C
Zhenghe White Peony Tea Co. Ltd (Organic Tea Farm)	IMO China (formerly)	Tea leaf	C

Source: Author's elaboration based on information available in databases and websites of the selected control bodies

Annex III Checklist of certified organic wild Chinese MAPs

Checklist of certified organic and possibly wild-collected species of Chinese operations

Latin binomial and plant part	Common name(s)
<i>Achyranthes bidentata</i> , radix	Achyranthes root
<i>Acorus calamus</i> , radix	Calamus root, sweet flag root
<i>Acorus tatarinowii</i> , rhizoma	Grassleaf sweetflag rhizome
<i>Actinidia chinensis</i> , fructus	Kiwifruit, wild kiwi fruit
<i>Adenophora stricta</i> , radix	Adenophora root
<i>Agaricus subrufescens</i>	jisongrong or himematsutake
<i>Agastache rugosa</i> , herba	Wrinkled giant hyssop
<i>Agrimonia pilosa</i> , herba	Hairy agrimony, Hairyvein agrimony Herb
<i>Agrocybe aegerita</i>	Chaxingu
<i>Akebia</i> spp., caulis	Akebia stem
<i>Alisma orientale</i> , rhizoma	Oriental water plantain rhizome
<i>Allium macrostemon</i> , bulbus	Langstamen onion bulb
<i>Allium wallichii</i>	Duo xing jiu, Jimbur, Himalaya onion
<i>Alpinia galanga</i> , fructus	Galanga galangal fruit
<i>Alpinia katsumadai</i> , semen	Katsumadai galangal seed
<i>Amaranthus tricolor</i>	Joseph's coat
<i>Amomum verum</i> , fructus	Dou Kou, Ming Yi Bie Lu
<i>Amorphophallus konjac</i> , radix	Konjac root tuber
<i>Amygdalus davidiana</i> , semen	Peach kernels
<i>Angelica pubescens</i> Maxim. f. <i>biserrata</i> , radix	Pubescent angelica root
<i>Angelica sinensis</i> , radix	Dang gui root, Chinese angelica root
<i>Artemisia argyi</i> , folia	Argy wormwood leaf
<i>Artemisia scoparia</i> , herba	Yin-chen wormwood herb
<i>Asarum heterotropoides</i> var. <i>mandshuricum</i> , radix et rhizoma	Manchurian wildginger root
<i>Asarum sieboldii</i> , folium	Asarum, Chinese wild ginger, Manchurian wild ginger
<i>Asparagus cochinchinensis</i> , radix	Cochinchinese asparagus root
<i>Astragalus mongholicus</i> , radix	Astragalus root
<i>Astragalus sinicus</i> , flos	Chinese milkvetch flower / zi yun ying
<i>Aucklandia lappa</i> , radix (Syn.: <i>Saussurea costus</i>)	Costus root, common Aucklandia root
<i>Auricularia auricula</i>	Cloud ear fungus, wood ear fungus
<i>Auricularia judae</i>	Cloud ear fungus, wood ear fungus
<i>Auricularia polytricha</i>	Cloud ear fungus, hairy wood ear
<i>Bambusa vulgaris</i>	Bamboo shoots
<i>Belamcanda chinensis</i> , rhizoma	Belamcanda rhizome
<i>Betula platyphylla</i> , folia	Japanese white birch leaf
<i>Bupleurum chinense</i> , radix	Bupleurum root
<i>Cantharellus cibarius</i>	Yellow chanterelle, egg mushroom

Latin binomial and plant part	Common name(s)
<i>Capsella bursa-pastoris</i> , herba	Shepherd's purse herb
<i>Carya cathayensis</i> , fructus	Chinese walnut
<i>Castanea mollissima</i>	Chinese chestnut
<i>Celosia argentea</i> , semen	Feather cockscomb, Prince's feather
<i>Centella asiatica</i> , herba	Gotu kola herb
<i>Chaenomeles speciosa</i> , fructus	Flowering quince fruit, Japanese quince
<i>Chenopodium album</i>	Lamb's quarters
<i>Chimonanthus praecox</i> , folia	Wintersweet leaf
<i>Chrysanthemum indicum</i> , flos	Wild chrysanthemum flower
<i>Chrysanthemum lavandulifolium</i>	Gan ju
<i>Cinnamomum cassia</i> , ramulus	Cassia twig
<i>Codonopsis pilosula</i> , radix	Tangshen root
<i>Convallaria majalis</i> , folia	Lily of the valley leaf
<i>Coprinus comatus</i>	Shaggy mane mushroom
<i>Coptis chinensis</i> , radix	Chinese goldthread root
<i>Cordyceps sinensis</i>	Chinese caterpillar fungus
<i>Cornus officinalis</i> , fructus	Asiatic Cornelian cherry fruit
<i>Crataegus cuneata</i> , fructus	Chinese hawthorn fruit
<i>Cyanotis cristata</i> (Syn.: <i>Commelina cristata</i>)	Common dayflower herb
<i>Cyathula officinalis</i> , radix	Cyathula root
<i>Cyperus rotundus</i> , rhizoma	Nutgrass Galingale rhizome
<i>Dioscorea nipponica</i> , radix	Japanese yam rhizome
<i>Dioscorea</i> spp. radix	Wild yam root
<i>Diospyros kaki</i> , calyx	Persimmon calyx
<i>Diospyros kaki</i> , folia	Persimmon leaf
<i>Eleutherococcus senticosus</i> , cortex (Syn.: <i>Acanthopanax senticosus</i>)	Manyprickle acanthopanax root-bark
<i>Epimedium</i> spp., folia	Epimedium leaf
<i>Equisetum arvense</i> , herba	Field horsetail stem
<i>Forsythia suspensa</i> , fructus	Weeping forsythia fruit
<i>Fritillaria cirrhosa</i> , bulbus	Sichuan fritillary bulb
<i>Fritillaria</i> spp., bulbus	Fritillary bulb
<i>Ganoderma lucidum</i> , fructificatio	Reishi mushroom, glossy ganoderma
<i>Gastrodia elata</i> , rhizoma	Tall gastrodia tuber
<i>Gentiana</i> spp., radix	Gentian root
<i>Ginkgo biloba</i> , folia	Ginkgo leaf
<i>Ginkgo biloba</i> , semen	Ginkgo seed
<i>Glehnia littoralis</i> , radix	Coastal glehnia root
<i>Glycyrrhiza</i> spp., radix	Liquorice root
<i>Grifola frondosa</i>	Maitake mushroom
<i>Gymnadenia conopsea</i>	Fragrant orchid

Latin binomial and plant part	Common name(s)
<i>Gynostemma pentaphyllum</i> , herba	Gynostemma herb
<i>Hericium erinaceus</i>	Lion's mane
<i>Herminium monorchis</i>	'Ginseng' fruit, musk orchid
<i>Hippophaë rhamnoides</i> , fructus	Seabuckthorn fruit
<i>Houttuynia cordata</i> , herba	Heartleaf houttuynia herb
<i>Hypericum perforatum</i> , herba	St. John's wort herb
<i>Illicium verum</i> , fructus	Chinese star anise fruit
<i>Inonotus obliquus</i>	Chaga mushroom
<i>Isatis indigotica</i> , radix	Isatis root
<i>Jasminum humile</i>	Italian jasmine, yellow jasmine
<i>Juglans regia</i> , semen	English walnut seed, walnut kernel
<i>Kochia scoparia</i> , fructus	Belvedere fruit
<i>Laricifomes officinalis</i>	Agarikon mushroom
<i>Lentinus edodes</i>	Shiitake mushroom
<i>Leonurus japonicus</i> , herba	Motherwort herb
<i>Ligusticum sinense</i> , rhizoma et radix	Chinese lovage rhizome and root
<i>Ligustrum lucidum</i> , fructus	Glossy privet fruit
<i>Lilium brownii</i> var. <i>viridulum</i> , bulbus	Lily bulb
<i>Lilium lancifolium</i> , bulbus	Lily bulb
<i>Lilium</i> spp., bulbus	Lily bulb
<i>Lithospermum erythrorhizon</i> , radix	Gromwell root
<i>Litsea cubeba</i> , fructus	Mountain spicy fruit, litsea fruit
<i>Lonicera caerulea</i> var. <i>edulis</i> , fructus	Haskap fruit, edible honeysuckle fruit
<i>Lonicera japonica</i> , flos	Japanese honeysuckle flower
<i>Lonicera</i> spp., flos	Honeysuckle flower
<i>Lycium barbarum</i> , fructus	Barbary wolfberry fruit, lycium fruit
<i>Lycium barbarum</i> , radix (cortex)	Chinese wolfberry root bark
<i>Lycium chinense</i> , fructus	Chinese wolfberry fruit
<i>Lycopodium clavatum</i> , herba	Club moss
<i>Magnolia biondii</i> , flos	Biond magnolia flower
<i>Magnolia officinalis</i> , cortex	Magnolia bark
<i>Magnolia officinalis</i> , flos	Magnolia flower
<i>Mentha arvensis</i> , herba (Syn.: <i>Mentha haplocalyx</i> , herba)	Chinese mint
<i>Morchella esculenta</i> , fructificatio	White / yellow morel mushroom
<i>Morus alba</i> , folia	White mulberry leaf
<i>Morus alba</i> , fructus	White mulberry fruit
<i>Morus</i> spp., folia	Mulberry leaf
<i>Nostoc commune</i>	Star jelly, witch's butter, mare's eggs
<i>Paeonia suffruticosa</i> , cortex (radix)	Tree-peony root bark
<i>Phellinus igniarius</i>	Mesima mushroom, willow bracket, fire sponge

Latin binomial and plant part	Common name(s)
<i>Phyllostachys nigra</i> var. <i>henonis</i> , folia	Bamboo leaf
<i>Pinellia ternata</i> , rhizoma	Pinellia tuber
<i>Pinus koraiensis</i> , semen	Korean pine kernels
<i>Pinus resinosa</i>	Red pine nut
<i>Pinus</i> spp., semen	Pine nut kernel
<i>Pinus tabulaeformis</i> , fructus	Chinese red pine nut
<i>Piper longum</i> , fructus	Long pepper fruit
<i>Plantago asiatica</i> , folia	Asiatic plantain leaf
<i>Plantago asiatica</i> , semen	Asiatic plantain seed
<i>Platycodon grandiflorum</i> , radix	Chinese balloon flower root, platycodon root
<i>Pleurotus cystidiosus</i>	Abalone mushroom
<i>Pleurotus ostreatus</i>	Oyster mushroom
<i>Pleurotus</i> spp.	Pleurotaceae mushroom
<i>Polygala sibirica</i> , cortex (radix)	Thinleaf milkwort root bark
<i>Polygala</i> spp., radix	Milkwort root
<i>Polygala tenuifolia</i> , radix	Polygala root, thinleaf milkwort root
<i>Polygonatum odoratum</i> , rhizoma	Aromatic Solomon's seal rhizome
<i>Polygonatum sibiricum</i> , rhizoma	Siberian Solomon's seal rhizome
<i>Polygonum cuspidatum</i> , rhizoma et radix	Giant knotweed rhizome and root
<i>Polygonum multiflorum</i> , radix	Fleeceflower root, he shou wu
<i>Polyporus umbellatus</i>	Zhu ling sclerotium
<i>Portulaca oleracea</i> , herba	Purslane herb
<i>Prunella vulgaris</i> , spica	Selfheal fruit-spike
<i>Prunus armeniaca</i> , semen	Apricot kernel, dried, bitter apricot seed
<i>Prunus persica</i> , semen	Wild peach seed
<i>Prunus pseudocerasus</i> , fructus	Ying tao cherry, Chinese sour cherry
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	Wild brake
<i>Pueraria montana</i> var. <i>chinense</i> (Syn.: <i>Pueraria thomsonii</i>)	Thompson kudzu root
<i>Pueraria montana</i> , radix (Syn. <i>Pueraria lobata</i>)	Kudzu root
<i>Rheum</i> spp., radix et rhizoma	Rhubarb root and rhizome
<i>Rhodiola crenulata</i> , radix	Tibetan rhodiola root, bigflower rhodiola root
<i>Rhodiola rosea</i> , radix	Golden root, roseroot
<i>Ribes nigrum</i> , folia	Black currant leaf
<i>Rosa davurica</i> , flos	Davurica rose flower, Amur rose flower
<i>Rubus chingii</i> , folia	Palmleaf raspberry leaves
<i>Rubus idaeus</i> , fructus	Raspberry fruit, red raspberry
<i>Rubus suavissimus</i> , folium	Chinese blackberry leaf
<i>Russula</i> spp.	Red mushroom
<i>Salix alba</i> , cortex	White willow bark
<i>Salvia miltiorrhiza</i> , radix et rhizoma	Chinese salvia root

Latin binomial and plant part	Common name(s)
<i>Sambucus williamsii</i>	North China red elder
<i>Sanicula chinensis</i> , folia	Sanicula chinensis leaf bud
<i>Saposhnikovia divaricata</i> , radix	Divaricate saposhnikovia root
<i>Sarcodon aspratus</i>	Black tiger's paw mushroom
<i>Schisandra chinensis</i> , fructus	Northern schisandra fruit
<i>Schisandra sphenanthera</i> , fructus	Southern schisandra fruit
<i>Schizonepeta tenuifolia</i> , folia	Fineleaf schizonepeta Herb
<i>Schnabelia terniflora</i> , folia (Syn.: <i>Caryopteris terniflora</i> , folia)	San hua you leaf
<i>Scrophularia ningpoensis</i> , radix	Ningpo figwort root, Chinese figwort
<i>Scutellaria baicalensis</i> , radix	Baikal skullcap root
<i>Silene conoidea</i>	Miantiaocai, weed silene
<i>Smilax glabra</i> , rhizoma	Chinese smilax rhizome
<i>Sophora japonica</i> , flos/folia	Japanese pagoda tree bud/leaf
<i>Spatholobus suberectus</i> , caulis	Suberect spatholobus stem
<i>Stephania tetrandra</i> , radix	Fourstamen stephania root
<i>Taraxacum mongolicum</i> , folia et radix	Mongolian dandelion leaf and root
<i>Taraxacum sinicum</i> , folia	Chinese dandelion leaf
<i>Taraxacum sinicum</i> , radix	Chinese dandelion root
<i>Tilia miqueliana</i> , flos	Linden / lime tree flowers
<i>Tongoloa dunnii</i>	Yi chang dong e qin
<i>Toona sinensis</i>	Chinese Mahogany
<i>Trametes versicolor</i>	Turkey tail mushroom
<i>Tribulus terrestris</i> , fructus	Tribulus fruit, puncturevine caltrop fruit
<i>Tricholoma matsutake</i>	Matsutake mushroom
<i>Trichosanthes kirilowii</i> , radix	Mongolian snakegourd root
<i>Trichosanthes kirilowii</i> , semen	Mongolian snakegourd seed
<i>Tuber melanosporum</i>	Black tuber, black truffle
<i>Tuber sinense</i>	Chinese truffle / mushroom
<i>Tussilago farfara</i> , folia	Coltsfoot leaf
<i>Urtica fissa</i> , folia	Nettle leaf
<i>Urtica fissa</i> , radix	Nettle root
<i>Vaccinium vitis-idaea</i> , folia	Lingonberry leaf
<i>Vaccinium vitis-idaea</i> , fructus	Lingonberry fruit
<i>Valeriana jatamansi</i> , rhizoma et radix	Indian valerian rhizome and root
<i>Viscum articulatum</i> , herba	Mistletoe herb
<i>Vitex negundo</i> , fructus	Hemleaf Negundo chastetree fruit
<i>Vitis amurensis</i>	Amur grape
<i>Wolfiporia extensa</i>	Poria sclerotium, Hoelen, Tuckahoe
<i>Zanthoxylum</i> spp., pericarpium	Prickly ash fruit peel
<i>Zanthoxylum</i> spp., semen	Prickly ash seeds

Latin binomial and plant part	Common name(s)
<i>Ziziphus jujuba</i> var. <i>spinosa</i> , semen	Spine date seed, jujube seed
<i>Ziziphus jujuba</i> , semen	Chinese date seed, jujube seed

Source: Author's elaboration based on information provided on organic certificates of Chinese companies

Annex IV 2013 certified organic MAP quantities of two Chinese control bodies

Sampling of 2013 certified organic MAP quantities of two Chinese control bodies (combined)

Description	Botanical name(s)	W/C	China 2013 cert. organic volume (kg)
TOTAL:			80,731,004.5
亚麻子 ya ma zi - Flax seed (linseed)	<i>Linum usitatissimum</i>	C	24,022,967
姜 jiang - Ginger rhizome	<i>Zingiber officinale</i>	C	15,812,950
大枣 da zao - Chinese red jujube date	<i>Ziziphus jujuba</i>	C/W	8,752,220
茶 cha - Tea leaf	<i>Camellia sinensis</i>	C	7,328,628
辣椒 la jiao - Capsicum fruit	<i>Capsicum annum</i>	C	6,251,530
枸杞子 gou qi zi - Barbary wolfberry fruit	<i>Lycium barbarum</i>	W/C	4,538,225
紫菜 zi cai - Laver thallus	<i>Porphyra haitanensis</i> and/or <i>P. yezoensis</i>	C	4,353,000
亚麻籽油 ya ma zi you - Flaxseed oil	<i>Linum usitatissimum</i>	C	2,733,970
大黄 da huang - Chinese rhubarb root and rhizome	<i>Rheum officinale</i> , <i>R. palmatum</i> , and/or <i>R. tanguticum</i>	W/C	1,462,600
人参 ren shen - Asian ginseng root	<i>Panax ginseng</i>	C	1,043,000
天麻 tian ma - Gastrodia rhizome	<i>Gastrodia elata</i>	C	646,800
甘草 gan cao Chinese liquorice root	<i>Glycyrrhiza uralensis</i> , <i>G. inflata</i> and/or <i>G. glabra</i>	W/C	501,800
黄芪 huang qi - Astragalus root	<i>Astragalus membranaceus</i> and/or <i>A. membranaceus</i> var. <i>mongholicus</i>	C/W	259,590
五味子 wu wu zi – Schisandra fruit	<i>Schisandra</i> spp.	W	234,590
Mongolian dandelion 蒙古蒲公英 meng gu pu gong ying	<i>Taraxacum mongolicum</i>	W	149,200
当归 dang gui - Chinese angelica root	<i>Angelica sinensis</i>	W/C	143,450
葛根 ge gen - Kudzu root	<i>Pueraria montana</i>	W	139,880
金银花 jin hin hua – Japanese honeysuckle flower bud	<i>Lonicera japonica</i>	W	130,200
西洋参 xi yang shen - American ginseng root (Chinese-grown)	<i>Panax quinquefolius</i>	C	118,920
刺五加 ci wu jia – Eleuthero root	<i>Eleutherococcus senticosus</i>	W	112,990
菊花 ju hua Chrysanthemum flower or 野菊花 ye ju hua Wild chrysanthemum flower	<i>Chrysanthemum morifolium</i> and/or <i>C. indicum</i>	C/W	97,590
黄芩 huang qin - Chinese skullcap root	<i>Scutellaria baicalensis</i>	W/C	81,200
菊苣 ju ju - Chicory root (cultivated)	<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	C	77,000
薑黄 jiang huang - Turmeric rhizome or 鬱金 yu jin - root tuber	<i>Curcuma</i> spp.	C/W	67,920
三七 san qi - Tienchi ginseng root	<i>Panax pseudoginseng</i>	C	54,560
板藍根 ban lan gen – Isatis root	<i>Isatis indigotica</i>	W	54,026.5
小茴香 xiao hui xiang - Fennel fruit and/or 茴芹 hui qin -	<i>Foeniculum vulgare</i> and/or	C	49,920

Description	Botanical name(s)	W/C	China 2013 cert. organic volume (kg)
Anise fruit and/or 葛缕子 ge lü zi - Caraway fruit	<i>Pimpinella anisum</i> and/or <i>Carum carvi</i>		
杜仲 du zhong Eucommia stem bark	<i>Eucommia ulmoides</i>	C	46,330
白果 bai guo - Ginkgo nut (seed)	<i>Ginkgo biloba</i>	C/W	45,000
八角茴香 ba jiao hui xiang - Chinese star anise fruit	<i>Illicium verum</i>	C/W	40,000
半夏 ban xia - Pinellia rhizome	<i>Pinellia ternata</i>	W/C	38,880
Apricot kernel, other	<i>Prunus armeniaca</i>	?	36,000
Apricot kernel, sweet	<i>Prunus armeniaca</i>	?	36,000
苦杏仁 ku xing ren - Apricot kernel, bitter	<i>Prunus armeniaca</i>	W	32,000
厚樸 hou po - Magnolia bark	<i>Magnolia officinalis</i>		30,880
川芎 - Chuan xiong rhizome	<i>Ligusticum wallichii</i>		25,959
黨參 dang shen - Codonopsis root	<i>Codonopsis pilosula</i> , <i>C. pilosula</i> var. <i>modesta</i> , and/or <i>C. tangshen</i>	C/W	24,790
European linden flower and leaf	<i>Tilia europaea</i>	C	22,920
延胡索 yan hu suo – Corydalis rhizome	<i>Corydalis yanhusuo</i>	W	16,000
黃連 huang lian - Coptis rhizome	<i>Coptis chinensis</i> , <i>C. deltoidea</i> , <i>C. teeta</i> , <i>C. teetoides</i>	C/W	15,000
益母草 yi mu cao - Chinese motherwort	<i>Leonurus japonicus</i>	W	11,920
槐花 huai hua - Japanese sophora flower bud	<i>Sophora japonica</i>	C	8,000
錫蘭肉桂 xi lan rou gui - Ceylon cinnamon	<i>Cinnamomum verum</i>	C	7,880
積雪草 ji xue cao – Gotu kola herb	<i>Centella asiatica</i>	W	7,000
菊苣 ju ju - Chicory root, roasted (wild)	<i>Cichorium glandulosum</i> and/or <i>C. intybus</i>	W	5,080
胡椒 hu jiao - Pepper fruit	<i>Piper nigrum</i>	C	4,880
白芍 bai shao - Chinese peony root	<i>Paeonia lactiflora</i>	C	4,000
丁香 ding xiang - Clove flower bud	<i>Syzygium aromaticum</i>	C	3,959
肉桂 rou gui - Chinese cinnamon bark	<i>Cinnamomum cassia</i>	C	2,880
艾葉 ai ye – Chinese mugwort herb	<i>Artemisia argyi</i>	W	2,000
蓮子 lian zi - Sacred lotus seed	<i>Nelumbo nucifera</i>	C	1920
南沙參 nan sha shen - Adenophora root	<i>Adenophora axilliflora</i> (syn.: <i>A. stricta</i> subsp. <i>stricta</i>)	W	0
沈香 chen xiang - Chinese agarwood	<i>Aquilaria sinensis</i>	W	0
檳榔 bing lang - Betelnut palm seed	<i>Areca catechu</i>	C	0
白朮 bai zhu Bai-zhu atractylodes rhizome	<i>Atractylodes macrocephala</i>	C	0
角叉菜膠 - Carrageenan	<i>Betaphycus gelatinus</i> (syn.: <i>Eucheuma gelatinae</i>)	W/C	0
黃芥子 jie cai zi - Chinese mustard seed and/or White mustard seed	<i>Brassica juncea</i> and/or <i>Sinapis alba</i>	C	0
茶浸膏 cha jin gao - Extracts of tea leaf	<i>Camellia sinensis</i>	C	0
白樟油 - Camphor branch and stem essential oil	<i>Cinnamomum camphora</i>	C	0

Description	Botanical name(s)	W/C	China 2013 cert. organic volume (kg)
中國肉桂油 rou gui you - Chinese cinnamon branch and leaf essential oil	<i>Cinnamomum cassia</i>	C	0
西瓜子 xi gua zi - Red watermelon seed	<i>Citrullus lanatus</i>	C	0
西瓜子 xi gua zi - Black watermelon seed	<i>Citrullus lanatus</i>	C	0
冬虫夏草 dong chong xia cao - Cordyceps fungus	<i>Cordyceps sinensis</i>	W	0
西紅花 xi hong hua - Saffron style and stigma	<i>Crocus sativus</i>	C	0
西葫芦子 xi hu lu zi - Pumpkin seed	<i>Cucurbita pepo</i>	C	0
香茅油 - Citronella aerial parts essential oil	<i>Cymbopogon nardus</i> and/or <i>C. winterianus</i>	C	0
血竭 xie jie - Dragon's blood, 乳香 ru xiang - Olibanum, and/or 没药 mo yao - Myrrh	<i>Daemonorops draco</i> <i>Boswellia bhawdajiana</i> , <i>B. carteri</i> , and/or <i>Commiphora</i> spp.	W	0
昆布 kun bu - Kelp or Tangle	<i>Ecklonia kurome</i> and/or <i>Laminaria japonica</i>	C/W	0
Cardamom seed and/or 砂仁 sha ren - Chinese amomum fruit	<i>Elettaria cardamomum</i> and/or <i>Amomum villosum</i> or <i>A. longiligulare</i>		0
桉油 an you - Eucalyptus essential oil	<i>Eucalyptus globulus</i>	C	0
Eucheuma seaweed	<i>Eucheuma cottonii</i> and/or <i>E. denticulatum</i>	C/W	0
阜康阿魏 fu kang a wei - Chinese Asafoetida oleo-gum-resin	<i>Ferula fukanensis</i> and/or <i>F. sinkiangensis</i>	W	0
浙貝母 zhe bai mu - Zhejiang fritillaria bulb	<i>Fritillaria thunbergii</i>	W	0
石花菜 shi hua cai - Agar alga (mucilage extract of)	<i>Gelidium amansii</i> , <i>G. elegans</i> and other red algae	W/C	0
銀杏葉浸膏 yin xing ye jin gao - Ginkgo leaf extract	<i>Ginkgo biloba</i>	C/W	0
甘草浸膏 gan cao jin gao Chinese liquorice root extract	<i>Glycyrrhiza inflata</i> , <i>G. uralensis</i> and/or <i>G. glabra</i>	W/C	0
真江蓠 - Gracilaria thallus and/or 海藻 hai zao - Sargassum alga	<i>Gracilaria asiatica</i> , <i>G. lemaneiformis</i> , and/or <i>G. tenuistipitata</i> ; <i>Sargassum fusiforme</i> and/or <i>S. pallidum</i>	W/C	0
八角茴香油 ba jiao hui xiang you - Chinese star anise fruit essential oil	<i>Illicium verum</i>	C/W	0
藁本 gao ben - Chinese lovage rhizome	<i>Ligusticum jeholense</i> and/or <i>L. sinense</i>	W/C	0
山蒼籽油 - Litsea fruit essential oil	<i>Litsea cubeba</i>	W/C	0
椒樣薄荷油 - Peppermint herb essential oil	<i>Mentha x piperita</i>	C	0
肉豆蔻 rou dou kou - Nutmeg kernel	<i>Myristica fragrans</i>	C	0
髮菜 fat choy - Black moss	<i>Nostoc flagelliforme</i>	W	0
Wild Asian ginseng root	<i>Panax ginseng</i>	W	0
香葉油 - Geranium leaf essential oil	<i>Pelargonium graveolens</i>	C	0
Chinese red pine resin	<i>Pinus massoniana</i>	W/C	0
茯苓皮 fu ling - Poria sclerotium	<i>Poria cocos</i>	W/C	0
地黃 di huang - Rehmannia root tuber	<i>Rehmannia glutinosa</i>	C	0
蓖麻油 bi ma you - Castor seed oil and fractions	<i>Ricinus communis</i>	C	0

Description	Botanical name(s)	W/C	China 2013 cert. organic volume (kg)
蓖麻子 bi ma zi - Castor seed	<i>Ricinus communis</i>	C	0
菝葜 ba qia - Chinese greenbrier rhizome	<i>Smilax china</i>	W	0
Bantaro seed	<i>Sterculia lychnophora</i>	W	0
干漆 gan qi - Chinese lacquer tree resin	<i>Toxicodendron vernicifluum</i>	C/W	0
裙帶菜 hai jie cai - Pinnatifida thallus	<i>Undaria pinnatifida</i>	W/C	0
油桐子油 you tong zi you - Tung seed oil	<i>Vernicia fordii</i> (syn.: <i>Aleurites fordii</i>)	C/W	0

Source: Author's elaboration based on survey

Annex V Producers of fair certified MAP ingredients globally

Legend (abbreviations and acronyms used)

C	Cultivated
CU FairChoice	Control Union (CU) Fair Choice Standard (FCS)
EcoCert ESR	EcoCert Equitable, Solidaire, Responsible (ESR) Standard
EO	Essential oil
FLO Fairtrade	Fairtrade International (FLO) Fairtrade Standards for Herbs, Spices and Teas
IBD EcoSocial	Instituto Biodinâmico de Desenvolvimento Rural (IBD) EcoSocial Standard
IMO FFL	Institute for Marketecology (IMO) Fair for Life (FFL) Standard
FairTSA	Fair Trade Sustainability Alliance Fair Trade Standard
FTUSA FWS	Fair Trade USA (FTUSA) Farm Workers Standard (FWS)
FTUSA ISH	Fair Trade USA (FTUSA) Independent Smallholder (ISH) Standard
FairWild	Fair Wild Foundation (FWF) FairWild Standard (FWS)
W	Wild collected

Producers and exporters of fair certified MAP ingredients: species / country / producer / standard / W (wild) or C (cultivated)

Name of MAP	Country	Name of Producer	Standard	W/C
Açaí fruit (<i>Euterpe oleracea</i>)	Brazil	Cooperativa Agroextrativista da Veneza do Marajó (COPAVEM)	FLO Fairtrade	W
	Brazil	Cooperativa Agropecuaria y de Consumo los Pioneros Ltda	FLO Fairtrade	W
	Brazil	Sambazon Brazil	EcoCert ESR	W
Agave root (<i>Agave salmiana</i> or <i>A. tequilana</i>)	Mexico	Ejido Santiago	FLO Fairtrade	C
	Mexico	Integradora Otilio Montañó S.A. de C.V	FLO Fairtrade	C
	Mexico	Xamini SPR de CV	FLO Fairtrade	C
Allspice fruit EO (<i>Pimenta dioica</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Almond flower (<i>Prunus dulcis</i> var. <i>dulcis</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Aloe vera leaf (<i>Aloe vera</i>)	Honduras	Coordinadora de Mujeres Campesinas de La Paz	FLO Fairtrade	C
	Mexico	José Martínez Brohez	IMO FFL	C
	Mexico	RALOP S. de R.L. de C.V. - Smallholder Producers	IMO FFL	C
Aloe vera leaf juice (<i>Aloe vera</i>)	Mexico	RALOP S. de R.L. de C.V. - Smallholder Producers	IMO FFL	C

Name of MAP	Country	Name of Producer	Standard	W/C
Anise fruit (<i>Pimpinella anisum</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
Anise myrtle leaf (<i>Syzygium anisatum</i>)	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
Apricot kernel (<i>Prunus armeniaca</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Argan kernel oil (<i>Argania spinosa</i>)	Morocco	Argane Aouza	EcoCert ESR	W
	Morocco	Coopérative Ajddigu	EcoCert ESR FLO Fairtrade	W
	Morocco	Coopérative Taitmatine	FLO Fairtrade	W
	Morocco	Coopérative Tighanimine	FLO Fairtrade	W
	Morocco	Entreprise Féminine Rurale d'Economie Sociale (EFAS)	EcoCert ESR	W
	Morocco	Zit Sidi Yassine SARL	EcoCert ESR	W
Bacopa leaf (<i>Bacopa monnieri</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	W/ C
Baobab fruit (<i>Adansonia digitata</i>)	Mali	300 women producers in cooperation with Huilerie Emile Noël & Office of the Niger Higher Valley (OHVN)	EcoCert ESR	W
	Uganda	Fairtrade Support Network Zimbabwe	FLO Fairtrade	W
Basil leaf (<i>Ocimum basilicum</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	India	Tea Promoters India Pvt. Ltd	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Basil leaf EO (<i>Ocimum basilicum</i>)	India	Mudar India Exports	IMO FFL	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
Bigfruit evening primrose seed (<i>Oenothera macrocarpa</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Birch leaf (<i>Betula pendula</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Bitter orange flower and peel (<i>Citrus aurantium</i> spp. <i>aurantium</i>) and EO	Morocco	SA Plantes Aromatiques du Diois	EcoCert ESR	C

Name of MAP	Country	Name of Producer	Standard	W/C
Black cumin seed (<i>Nigella sativa</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
Black cumin seed oil (<i>Nigella sativa</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Black current leaf (<i>Ribes nigrum</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Black locust flower (<i>Robinia pseudoacacia</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Black mulberry leaf and fruit (<i>Morus nigra</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Black mustard seed (<i>Brassica nigra</i>)	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
Black pepper fruit (<i>Piper nigrum</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Malenadu Savayava Krishi Parivar	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	POABS Organic Estates	EcoCert ESR	C
	India	Prasanna Ganapathi Farmers Foundation	FLO Fairtrade	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	The Small & Marginal Tribal Farmers Mutually Aided Cooperative Society Limited	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Coopérative Fanohana	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Medadumbara Organic Minor Export Crop Producers' Society	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C
Sri Lanka	Sustainable Agri Farm Enterprises	FLO Fairtrade	C	

Name of MAP	Country	Name of Producer	Standard	W/C
		Network		
	Uganda	Amfri Farms Ltd	IMO FFL	C
Black pepper fruit EO (<i>Piper nigrum</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Blackberry leaf (<i>Rubus fruticosus</i>)	BiH	Boletus d.o.o.	FairWild	W
	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
Blue poppy seed (<i>Papaver somniferum</i>)	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
Calendula flower (<i>Calendula officinalis</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Camu-camu fruit (<i>Myrciaria dubia</i>)	Peru	Ecoandino SAC	CU FairChoice	W/C
Caper flower bud (<i>Capparis spinosa</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Capsicum fruit (<i>Capsicum annum</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Limited	IMO FFL	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Thailand	Passion Fruit Crop Group Community Enterprises of Baan Dok Daeng	FLO Fairtrade	C
	Thailand	Sisaket Fairtrade Farmer Group	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Caraway fruit (<i>Carum carvi</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	?
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	?

Name of MAP	Country	Name of Producer	Standard	W/C
	Uzbekistan	Turob Bobo	FLO Fairtrade	?
Cardamom seed (<i>Elettaria cardamomum</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Company Ltd	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	POABS Organic Estates	EcoCert ESR	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Sri Lanka	Sustainable Agri Farm Enterprises Network	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Cardamom seed EO (<i>Elettaria cardamomum</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Castor seed fatty oil (<i>Ricinus communis</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Celery fruit (<i>Apium graveolens</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	?
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	?
	Uzbekistan	Turob Bobo	FLO Fairtrade	?
Celery leaf (<i>Apium graveolens</i>)	Uzbekistan	Turkiston Gulba	FLO Fairtrade	?
	Uzbekistan	Turob Bobo	FLO Fairtrade	?
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	?
Ceylon citronella leaf (<i>Cymbopogon nardus</i>)	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C
Ceylon citronella leaf EO (<i>Cymbopogon nardus</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Chamomile flower (<i>Matricaria recutita</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Sekem for land reclamation	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Greenfield Bio Plantations (Pvt.) Ltd	FLO Fairtrade	C
	Tanzania	Luponde Estates	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Chia seed (<i>Salvia hispanica</i>)	Brazil	Biorgânica Comércio de Produtos Orgânicos Ltda	IBD EcoSocial	C
	Mexico	Cañeros Organicos Asociados	FLO Fairtrade	C
Chinese chive leaf (<i>Allium tuberosum</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Thailand	Sisaket Fairtrade Farmer Group	FLO Fairtrade	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Chinese mint leaf EO (<i>Mentha arvensis</i>)	India	Mudar India Exports	IMO FFL	C
	India	Serendimenthe India Pvt. Ltd	IMO FFL	C
Chive leaf (<i>Allium schoenoprasum</i>)	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Cilantro leaf (<i>Coriandrum sativum</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Cinnamon bark (<i>Cinnamomum verum</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Coopérative Fanohana	FLO Fairtrade	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Sri Lanka	Sustainable Agri Farm Enterprises Network	FLO Fairtrade	C
Cinnamon bark Chinese or Vietnamese (<i>Cinnamomum cassia</i> or <i>C. loureirii</i>)	Viet Nam	Van Chan Bio Farmers Club	FLO Fairtrade	W/C
Cinnamon bark EO (<i>Cinnamomum verum</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Cinnamon leaf EO (<i>Cinnamomum verum</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Cleavers herb (<i>Galium aparine</i>)	Hungary	Schmidt und Co. Kft.	FairWild	W
Clove flower bud (<i>Syzygium aromaticum</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Indonesia	Aliet Green	IMO FFL	C
	Madagascar	Association des Planteurs de Mananara	FLO Fairtrade	C
	Madagascar	Coopérative Fanohana	FLO Fairtrade	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C
	Sri Lanka	Sustainable Agri Farm Enterprises Network	FLO Fairtrade	C
Clove flower bud EO (<i>Syzygium aromaticum</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Coriander fruit (<i>Coriandrum sativum</i>)	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Cornflower (<i>Centaurea cyanus</i>)	Uganda	Amfri Farms Ltd	IMO FFL	C
Cumin fruit (<i>Cuminum cyminum</i>)	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.,	FairTSA	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Curry leaf (<i>Murraya koenigii</i>)	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C/W
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C/W
Damask rose flower (<i>Rosa damascena</i>)	Ethiopia	Terra PLC	IMO FFL	C
	I.R. Iran	Nomade Palize Iran	EcoCert ESR	C
Damask rose flower EO (<i>Rosa damascena</i>)	Ethiopia	Terra PLC	IMO FFL	C
Dandelion leaf (<i>Taraxacum officinale</i>)	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
	Hungary	Schmidt und Co. Kft.	FairWild	W
	Poland	Runo Spółka z.o.o.	FairWild	W
Dandelion root (<i>Taraxacum officinale</i>)	BiH	Boletus d.o.o.	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
	Hungary	Schmidt und Co. Kft.	FairWild	W
	Poland	Runo Spółka z.o.o.	FairWild	W
Devil's claw secondary root tuber (<i>Harpagophytum procumbens</i>)	Namibia	Herbs I.S.	EcoCert ESR	W
Dill herb (<i>Anethum graveolens</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
East Indian sarsaparilla root (<i>Hemidesmus indicus</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	W
Eucalyptus leaf EO (<i>Eucalyptus globulus</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
European dewberry leaf (<i>Rubus caesius</i>)	Hungary	Schmidt und Co. Kft.	FairWild	W
European elder flower	BiH	Boletus d.o.o.	FairWild	W

Name of MAP	Country	Name of Producer	Standard	W/C
<i>(Sambucus nigra)</i>	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Hungary	Nagy Mihály Medicinal Plant Ltd.	FairWild	W
	Hungary	Schmidt und Co. Kft.	FairWild	W
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
European elder fruit (<i>Sambucus nigra</i>)	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
Fennel fruit (<i>Foeniculum vulgare</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
Fenugreek seed (<i>Trigonella foenum-graecum</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
Flax seed (<i>Linum usitatissimum</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Flax seed oil (<i>Linum usitatissimum</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Frankincense gum EO (<i>Boswellia neglecta</i>)	Kenya	Arid Land Resources	FairWild	W
Galangal rhizome (<i>Alpinia galanga</i> , <i>A. officinarum</i> , or <i>Kaempferia galanga</i>)	Thailand	Sisaket Fairtrade Farmer Group	FLO Fairtrade	C
Geranium aerial part EO (<i>Pelargonium x asperum</i>)	D.R. Congo	Avituri Farm	IMO FFL	C
Geranium aerial part floral water (<i>Pelargonium x asperum</i>)	D.R. Congo	Avituri Farm	IMO FFL	C
Geranium leaf (<i>Pelargonium asperum</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
Geranium leaf EO (<i>Pelargonium asperum</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
Geranium leaf EO (<i>Pelargonium graveolens</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Ginger rhizome (<i>Zingiber officinale</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C

Name of MAP	Country	Name of Producer	Standard	W/C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Indonesia	Aliet Green	IMO FFL	C
	Madagascar	Cooperative Mitsinjo	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Nicaragua	Cooperativa de Servicios Agropecuarios Tierra Nueva	FLO Fairtrade	C
	China	Nanjing County Yifeng Fruits and Vegetables Specialized Cooperative Society	FLO Fairtrade	C
	Peru	La Grama	IMO FFL	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Medadumbara Organic Minor Export Crop Producers' Society	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
	Uganda	Biofresh Ltd	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
	Viet Nam	Van Chan Bio Farmers Club	FLO Fairtrade	C
Ginger rhizome EO (<i>Zingiber officinale</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Goldenberry (<i>Physalis peruviana</i>)	Colombia	Asociación Biofruit Napoli	FLO Fairtrade	C
	Colombia	Asociación de Fruticultores de Boyaca	FLO Fairtrade	C
	Colombia	Asociación de Productores de Ciénega	FLO Fairtrade	C
	Colombia	Asociación de Productores Sembrando Futuro	FLO Fairtrade	C
	Colombia	C.I. Frutas Comerciales S.A.	IMO FFL	C
	Uganda	Fruits of the Nile Growers Association	FLO Fairtrade	C
Gotu kola herb (<i>Centella asiatica</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C/W
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C/W
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C/W
Grape leaf (<i>Vitis vinifera</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
Grape leaf (<i>Vitis vinifera</i>)	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
Grape leaf (<i>Vitis vinifera</i>)	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Greater galangal rhizome (<i>Alpinia galanga</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C/W
Green pepper fruit (<i>Piper nigrum</i>)	India	POABS Organic Estates	EcoCert ESR	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
Guayusa leaf (<i>Ilex guayusa</i>)	Ecuador	Runapartuna Exportadora	FTUSA ISH	C
Hawthorn fruit (<i>Crataegus monogyna</i>)	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
Hawthorn leaf + flower (<i>Crataegus monogyna</i>)	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
Hawthorn leaf + flower (<i>Crataegus</i> spp.)	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
Hemp seed (<i>Cannabis sativa</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Hemp seed oil (<i>Cannabis sativa</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Hibiscus flower (<i>Hibiscus sabdariffa</i>)	Burkina Faso	Union des Producteurs de Mangues Biologiques des Hauts Bassins	FLO Fairtrade	C
	Burkina Faso	COO. PRO. LEF (Zoutou de Kourinion)	FLO Fairtrade	C
	Burkina Faso	Union Provinciale des Producteurs de Fruits et Légumes	FLO Fairtrade	C
	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and Its Affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Sekem for land reclamation	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Senegal	Fédération Yakaar Niani Wulli	FLO Fairtrade	C
	Zimbabwe	Fairtrade Support Network Zimbabwe	FLO Fairtrade	C
Holy basil leaf (<i>Ocimum tenuiflorum</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
Honeybush herb (<i>Cyclopia</i> spp.)	South Africa	Cape Herb and Spice Company (Pty) Ltd	FLO Fairtrade	C/W
Horseradish tree leaf (<i>Moringa oleifera</i>)	Uganda	Amfri Farms Ltd	IMO FFL	C
Horsetail stem (<i>Equisetum arvense</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Immortelle blossom EO (<i>Helichrysum bracteiferum</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	W
Jasmine flower (<i>Jasminum polyanthum</i>)	India	Organic India Farmers Producer Company Ltd.	FLO Fairtrade	C
Jjoba seed oil (<i>Simmondsia chinensis</i>)	Palestine	Canaan Fair Trade Smallholder Project	IMO FFL	C
Juniper cone berry (<i>Juniperus</i>)	Bulgaria	Producer for Organic Herb Trading	FairWild	W

Name of MAP	Country	Name of Producer	Standard	W/C
<i>communis</i>)		Company (UK)		
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Kokum rind (<i>Garcinia indica</i>)	India	Bergwerff Organic India Pvt. Ltd	FLO Fairtrade	W/ C
Lavender flower (<i>Lavandula</i> spp.)	Bolivia	Unión de Productores Agropecuarios (UPROAGRO)	FLO Fairtrade	C
Lemon balm leaf (<i>Melissa officinalis</i>)	Bolivia	Unión de Productores Agropecuarios (UPROAGRO)	FLO Fairtrade	C
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
	Uganda	Amfri Farms Ltd	IMO FFL	C
Lemon eucalyptus leaf EO (<i>Eucalyptus citriodora</i>)	D.R. Congo	Avituri Farm	IMO FFL	C
Lemon myrtle leaf (<i>Backhousia citriodora</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
Lemon petitgrain leaf (<i>Citrus limon</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Lemon petitgrain leaf EO (<i>Citrus limon</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Lemon verbena leaf (<i>Aloysia citriodora</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
Lemongrass leaf (<i>Cymbopogon citratus</i> and <i>C. flexuosus</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
Lemongrass leaf (<i>Cymbopogon citratus</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
Lemongrass leaf (<i>Cymbopogon</i> spp.)	Bolivia	Unión de Productores Agropecuarios (UPROAGRO)	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Thailand	Sisaket Fairtrade Farmer Group	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Uganda	Biofresh Ltd	IMO FFL	C
Lemongrass leaf EO (<i>Cymbopogon</i> spp.)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Liquorice root (<i>Glycyrrhiza glabra</i>)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and Its Affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Spain	Producer for Organic Herb Trading Company (UK)	FairWild	W
Liquorice root (<i>Glycyrrhiza uralensis</i>), Ural	Kazakhstan	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
Linden flower (<i>Tilia cordata</i>)	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
Linden flower (<i>Tilia cordata</i> , <i>T. platyphyllos</i>)	Hungary	Schmidt und Co. Kft.	FairWild	W
Linden flower (<i>Tilia platyphyllos</i>)	BiH	Boletus d.o.o.	FairWild	W
Linden flower, large-leaf (<i>Tilia platyphyllos</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Linden flower, small-leaf (<i>Tilia cordata</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Long pepper fruit (<i>Piper longum</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	W/C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	W/C
Maca hypocotyl (<i>Lepidium meyenii</i>)	Peru	Ecoandino SAC	CU FairChoice	C
	Peru	Nuestra Cooperativa	CU FairChoice	C
	Peru	Promotora Agroindustrial de Cultivos Andinos Promaca EIRL	IMO FFL	C
Mace aril (<i>Myristica fragrans</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Sri Lanka	Sustainable Agri Farm Enterprises Network	FLO Fairtrade	C
Mangosteen fruit (<i>Garcinia mangostana</i>)	Indonesia	Aliet Green	IMO FFL	C

Name of MAP	Country	Name of Producer	Standard	W/C
Maqui berry (<i>Aristotelia chilensis</i>)	Chile	Geco Comercial SPA	IMO FL	W
Maté leaf (<i>Ilex paraguariensis</i>)	Argentina	Guayaki Latin America S.A. - Reserva Agroecológica Iguazú	IMO FFL	C
	Argentina	Kraus S.A. Farm	IMO FFL	C
	Brazil	Grupo de Produtores Turvo	IMO FFL	C
	Brazil	Guayaki SRP - IT Marrecas	IMO FFL	W
	Brazil	Triunfo do Brasil Indústria e Comércio Limitada	FTUSA FWS, IMO FFL	C
	Paraguay	Guayaki - Comunidad Aché Koe Tuvy	IMO FFL	C
Maté leaf extract (<i>Ilex paraguariensis</i>)	Brazil	Grupo Centroflora	IMO FFL	C
Mint leaf (<i>Mentha</i> spp.)	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	China	Shaoxing Shangyu Graham Tea Farmers Association	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Myrrh gum EO (<i>Commiphora confusa</i>)	Kenya	Arid Land Resources	FairWild	W
Myrtle leaf (<i>Myrtus communis</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Nutmeg kernel (<i>Myristica fragrans</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Sri Lanka	Sustainable Agri Farm Enterprises Network	FLO Fairtrade	C
Nutmeg kernel EO (<i>Myristica fragrans</i>)	Sri Lanka	Bio Extracts (Pvt.) Ltd	CU FairChoice	C
Oregano leaf (<i>Origanum</i>)	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
<i>vulgare</i>)	Turkey	Işık Tarım Ürünleri San. ve Tic. A.Ş.	FairTSA	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Palmarosa leaf (<i>Cymbopogon martinii</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
Palmarosa leaf EO (<i>Cymbopogon martinii</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
Parsley leaf (<i>Petroselinum crispum</i>)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
Patchouli herb EO (<i>Pogostemon cablin</i>)	Uzbekistan	Turob Bobo	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
Peppermint leaf (<i>Mentha x piperita</i>)	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Sekem for land reclamation	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Sri Lanka	Greenfield Bio Plantations (Pvt.) Ltd	FLO Fairtrade	C
	Tanzania	Luponde Estates	FLO Fairtrade	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
Peppermint leaf EO (<i>Mentha x piperita</i>)	Uzbekistan	Turob Bobo	FLO Fairtrade	C
	India	Serendimenthe India Pvt. Ltd	IMO FFL	C
Perilla seed (<i>Perilla frutescens</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Persian walnut leaf (<i>Juglans regia</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Pine nut kernel (<i>Pinus spp.</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	W
Pink pepper fruit (<i>Schinus terebinthifolius</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Pink pepper fruit EO (<i>Schinus terebinthifolius</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Pomegranate blossom (<i>Punica granatum</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	?
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	?
	Uzbekistan	Turob Bobo	FLO Fairtrade	?
Prickly pear seed oil (<i>Opuntia ficus-indica</i>)	Morocco	Opuntia Trade Morocco	EcoCert ESR	C
Pumpkin seed (<i>Cucurbita pepo</i>)	Uganda	Amfri Farms Ltd	IMO FFL	C

Name of MAP	Country	Name of Producer	Standard	W/C
	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Pumpkin seed oil (<i>Cucurbita pepo</i>)	China	Dalian Huaen Co. Ltd	IBD EcoSocial	C
Raspberry leaf (<i>Rubus idaeus</i>)	BiH	Boletus d.o.o.	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Ravintsara leaf EO (<i>Cinnamomum camphora cineoliferum</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	W
Rooibos herb (<i>Aspalathus linearis</i>)	South Africa	Bergendal Boerdery	FLO Fairtrade	C/ W
	South Africa	Driefontein Small Farmers Primary Cooperative	FLO Fairtrade	C/ W
	South Africa	Heiveld Co-operative Ltd	FLO Fairtrade	C/ W
	South Africa	Mouton Citrus Ltd	FLO Fairtrade	C/ W
	South Africa	Wiedouw Estate	FLO Fairtrade	C/ W
	South Africa	Wupperthal Original Rooibos Cooperative	FLO Fairtrade	C/ W
Rose flower (<i>Rosa</i> spp.)	Morocco	Les Arômes du Maroc	EcoCert ESR	C
Rose hip (<i>Rosa canina</i>), Dog	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Company (UK)	FairWild	W
	Hungary	Schmidt und Co. Kft.	FairWild	W
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Rose hip (<i>Rosa</i> spp.)	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	?
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Rosemary leaf (<i>Rosmarinus officinalis</i>)	Bolivia	Unión de Productores Agropecuarios – UPROAGRO	FLO Fairtrade	C
	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Sacha inchi seed oil (<i>Plukenetia volubilis</i>)	Peru	Shanantina SAC	CU FairChoice	C
Saffron style & stigma (<i>Crocus</i>	I.R. Iran	Arghavan Dasht e Paezan	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
<i>sativus</i>)	India	Srinagar Kessar Farmers Cooperative Ltd	FLO Fairtrade	C
Sage leaf (<i>Salvia officinalis</i>)	Bolivia	Unión de Productores Agropecuarios – UPROAGRO	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Savory herb (<i>Satureja hortensis</i> or <i>S. montana</i>)	Bolivia	Unión de Productores Agropecuarios – UPROAGRO	FLO Fairtrade	C
Senegal senna leaf (<i>Senna italica</i>); a.k.a. 'neutral henna'	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C/W
Shea leaf (<i>Vitellaria paradoxa</i>)	Togo	Alaffia Shea Butter Coop	IMO FFL	W
Shea nut (<i>Vitellaria paradoxa</i>)	Ghana	StarShea Ltd	IMO FFL	W
	Togo	Alaffia Shea Butter Coop	IMO FFL	W
Shea nut butter (<i>Vitellaria paradoxa</i>)	Benin	Kerethic Benin	EcoCert ESR	W
	Benin	Union des Coopératives de Producteurs de Cultures Biologiques	FLO Fairtrade	W
	Burkina Faso	Club Bio	EcoCert ESR	W
	Burkina Faso	La Fédération Nununa	EcoCert ESR, FLO Fairtrade	W
	Burkina Faso	Société Toussiana Karité Comestibles & Cosmétiques (SOTOKACC)	EcoCert ESR	W
	Burkina Faso	Union des Productrices de Karité (UPROKA)	EcoCert ESR	W
	Burkina Faso	Union Générale des Productrices des Produits du Karité (UGPPK)	EcoCert ESR	W
	Ghana	Akoma Cooperative Multipurpose Society	FLO Fairtrade	W
	Ghana	StarShea Ltd	IMO FFL	W
	Mali	300 women producers in cooperation with Huilerie Emile Noël & OHVN	EcoCert ESR	W
	Mali	Mobiom	FLO Fairtrade	W
	Mali	Projet Karité Mali	EcoCert ESR	W
	Togo	Alaffia Shea Butter Cooperative	IMO FFL	W
	Silverleaf lime flower (<i>Tilia tomentosa</i>)	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild
Bulgaria		Producer for Organic Herb Trading Company (UK)	FairWild	W
Sour cherry stem (<i>Prunus cerasus</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Spearmint leaf (<i>Mentha spicata</i>)	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Sekem for land reclamation	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Tanzania	Luponde Estates	FLO Fairtrade	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	C
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	C
	Uzbekistan	Turob Bobo	FLO Fairtrade	C
Spearmint leaf EO (<i>Mentha spicata</i>)	India	Mudar India Exports	IMO FFL	C
St. John's wort herb (<i>Hypericum perforatum</i>)	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Stevia leaf (<i>Stevia rebaudiana</i>)	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	Bolivia	Unión de Productores Agropecuarios - UPROAGRO	FLO Fairtrade	C
	Peru	Ecoandino SAC	CU FairChoice	C
Stinging nettle leaf (<i>Urtica dioica</i>)	BiH	Boletus d.o.o.	FairWild	W
	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
	Bulgaria	Producer for Organic Herb Trading Co. (UK)	FairWild	W
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
	Hungary	Schmidt und Co. Kft.	FairWild	W
	Macedonia	Alkaloid A.D. Skopje	FairWild	W
Stinging nettle root (<i>Urtica dioica</i>)	Poland	Runo Spólka z.o.o.	FairWild	W
	BiH	Boletus d.o.o.	FairWild	W
	Hungary	Nagy Mihály Medicinal Plant Ltd	FairWild	W
Sweet marjoram herb (<i>Origanum majorana</i>)	Poland	Runo Spólka z.o.o.	FairWild	W
	Bolivia	Unión de Productores Agropecuarios - UPROAGRO	FLO Fairtrade	C
	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Royal Ottoman Co. and its affiliate Organic Nature Co.	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
Tarragon herb (<i>Artemisia dracunculus</i>)	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
Tea leaf (<i>Camellia sinensis</i>)	India	Ambootia Group (I, II and III)	FLO Fairtrade	C
	India	Apeejay Tea Ltd	FLO Fairtrade	C
	India	Avongrove Tea Estate	FLO Fairtrade	C
	India	Burnside Tea Estate	FLO Fairtrade	C
	India	Chamong Tee Exports Pvt. Ltd	FLO Fairtrade	C
	India	Chundavurrai Estate	FLO Fairtrade	C
	India	Coonoor Tea Estates Co. Ltd	FLO Fairtrade	C
	India	Goodricke Group Ltd	FLO Fairtrade	C
	India	Jamguri Tea Estate	FLO Fairtrade	C
	India	Jay Shree Tea & Industries Ltd	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	India	Jungpana Tea Estate	FLO Fairtrade	C
	India	Kamala Tea Co. Ltd.	FLO Fairtrade	C
	India	Makaibari Tea Estate	FLO Fairtrade	C
	India	Manalaroo Estate - Nelliampathy Tea and Produce Co. Ltd	FLO Fairtrade	C
	India	McLeod Russel India Ltd	FLO Fairtrade	C
	India	Mineral Springs	FLO Fairtrade	C
	India	Neelamalai Agro Industries Ltd, Katary & Sutton Estates	FLO Fairtrade	C
	India	Paralai Tea Estate	FLO Fairtrade	C
	India	POABS Organic Estates	FLO Fairtrade	C
	India	Potong Tea Workers Welfare Committee	FLO Fairtrade	C
	India	SAE Ltd., Kotada & Welbeck Estates	FLO Fairtrade	C
	India	Small Tea Growers Consortium	FLO Fairtrade	C
	India	Tea Promoters (India) Pvt. Ltd	FLO Fairtrade	C
	India	Teesta Valley Tea Co Ltd	FLO Fairtrade	C
	India	The Arya Tea Co. Ltd	FLO Fairtrade	C
	India	The Bombay Burmah Trading Corp. Ltd	FLO Fairtrade	C
	India	The Midland Rubber & Produce Co. Ltd. - Arnakal Estate	FLO Fairtrade	C
	India	The Telojan Tea Co. Ltd	FLO Fairtrade	C
	India	The United Nilgiri Tea Estates Co. Ltd	FLO Fairtrade	C
	India	Thiashola Plantations Pvt. Ltd	FLO Fairtrade	C
	India	Tindharia Tea Estate	FLO Fairtrade	C
	India	Tonganagaon Tea Co. Pvt. Ltd	FLO Fairtrade	C
	India	West Jalinga Tea Estate	FLO Fairtrade	C
	Indonesia	Aktor Baruah Gunuang	FLO Fairtrade	C
	Kenya	Chebut Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Chinga Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	FINTEA Growers Co-operative Union Ltd	FLO Fairtrade	C
	Kenya	Gacharage Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	GITUGI Tea Factory	FLO Fairtrade	C
	Kenya	Imenti Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Iriaini Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	James Finlay (Kenya) Ltd, Kitumbe	FLO Fairtrade	C
	Kenya	Kanyenya-ini Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Kapkaitin Outgrowers Empowerment Project	FLO Fairtrade	C
	Kenya	Kiegoi Tea Factory Co. Ltd.	FLO Fairtrade	C
	Kenya	Makomboki Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Michimikuru Tea Co. Ltd	FLO Fairtrade	C
	Kenya	Mungania Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Ndimba Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Nyamache Tea Factory Co. Ltd	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Kenya	Rukuriri Tea Factory Co. Ltd	FLO Fairtrade	C
	Kenya	Sireet Outgrower Empowerment Project	FLO Fairtrade	C
	Malawi	Eastern Outgrowers Trust	FLO Fairtrade	C
	Malawi	Kawalazi Estate Co Limited	FLO Fairtrade	C
	Malawi	Makandi Tea & Coffee Estates Ltd	FLO Fairtrade	C
	Malawi	Msuwadzi Association Ltd	FLO Fairtrade	C
	Malawi	Satemwa Tea Estates Ltd	FLO Fairtrade	C
	Malawi	Smallholder Tea Growers Trust	FLO Fairtrade	C
	Malawi	Sukambizi Association	FLO Fairtrade	C
	Nepal	Kanchanjangha Tea Estate and Research Center	FLO Fairtrade	C
	China	Cang Yuan Rang Sai Tea Group	FLO Fairtrade	C
	China	Guzhang GaoFeng Organic Tea Association	FLO Fairtrade	C
	China	Jiangxi Wuyuan Dazhangshan Organic Tea Farmer Association	FLO Fairtrade	C
	China	Jiangxi Wuyuan Xitou Tea Farmers Association	FLO Fairtrade	C
	China	Lincang Shuangfeng Organic Tea Specialized Cooperative	FLO Fairtrade	C
	China	Mannong Tea Association	FLO Fairtrade	C
	China	Shaoxing Shangyu Graham Tea Farmers Association	FLO Fairtrade	C
	China	Xuan En Yisheng Tea Cooperative	FLO Fairtrade	C
	Rwanda	Cooperative Assopthe Cyohoha-Rukeri	FLO Fairtrade	C
	Rwanda	Sorwathe Ltd	FLO Fairtrade	C
	Sri Lanka	Ambatanne Small Organic Tea Farmers Association	FLO Fairtrade	C
	Sri Lanka	Bogawantalawa Tea Estates Plc	FLO Fairtrade	C
	Sri Lanka	Concordia Tea Estate	FLO Fairtrade	C
	Sri Lanka	Greenfield Bio Plantations (Pvt.) Ltd	FLO Fairtrade	C
	Sri Lanka	Horana Plantations Plc	FLO Fairtrade	C
	Sri Lanka	Kotagala Plantations Ltd	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Maskeliya Plantations Ltd	FLO Fairtrade	C
	Sri Lanka	Nahavilla Organic Tea Garden of Hapugastenne Plantations Plc	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Sri Lanka	Stassen Natural Foods (Pvt.) Ltd (Idulgashina Bio Tea Garden)	FLO Fairtrade	C
	Sri Lanka	Watawala Plantations Ltd	FLO Fairtrade	C
	Tanzania	Herkulu Tea Estate	FLO Fairtrade	C
	Tanzania	Kibena Tea Ltd	FLO Fairtrade	C
	Tanzania	Luponde Estates	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Tanzania	Mufindi Tea Co. Ltd	FLO Fairtrade	C
	Tanzania	Rungwe Small Holder Tea Growers Association	FLO Fairtrade	C
	Thailand	Doi Chaang Community Enterprise Piko	FLO Fairtrade	C
	Uganda	Igara Growers Tea Factory Ltd	FLO Fairtrade	C
	Uganda	Kayonza Growers Tea Factory Co. Ltd	FLO Fairtrade	C
	Uganda	Mabale Growers Tea Factory Ltd	FLO Fairtrade	C
	Uganda	McLeod Russel Uganda Ltd	FLO Fairtrade	C
	Uganda	Mpanga Growers Tea Factory	FLO Fairtrade	C
	Viet Nam	Ban Lien Organic Tea Cooperative	FLO Fairtrade	C
	Viet Nam	Van Chan Bio Farmers Club	FLO Fairtrade	C
Tea tree leaf (<i>Melaleuca alternifolia</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
Tea tree leaf EO (<i>Melaleuca alternifolia</i>)	Kenya	Earthoil Kenya Pty EPZ Ltd	IMO FFL	C
Thyme herb (<i>Thymus</i> spp.)	Bolivia	Unión de Productores Agropecuarios – UPROAGRO	FLO Fairtrade	C
	Egypt	Farmers Development Association	FLO Fairtrade	C
	Egypt	Misr El-Benaa for Development	FLO Fairtrade	C
	Egypt	Sakaran Society Development Association	FLO Fairtrade	C
	Egypt	Tobhar Small Growers Society	FLO Fairtrade	C
	Kenya	Finlays Horticulture Kenya Ltd	FLO Fairtrade	C
	Palestine	Canaan Fair Trade Smallholder Project	IMO FFL	C
	Uzbekistan	Dustkul Bogi	FLO Fairtrade	?
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	?
	Uzbekistan	Turob Bobo	FLO Fairtrade	?
Uganda	Amfri Farms Ltd	IMO FFL	C	
Turmeric rhizome (<i>Curcuma longa</i>)	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Peru	La Grama	IMO FFL	C
	Uganda	Amfri Farms Ltd	IMO FFL	C
Turmeric rhizome (<i>Curcuma</i> spp.)	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Organic India Farmers Producer Co. Ltd	FLO Fairtrade	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Cooperative Mitsinjo	FLO Fairtrade	C
	Nicaragua	Cooperativa de Servicios Agropecuarios Tierra Nueva	FLO Fairtrade	C

Name of MAP	Country	Name of Producer	Standard	W/C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association (SOFA)	FLO Fairtrade	C
	Thailand	Sisaket Fairtrade Farmer Group	FLO Fairtrade	C
Turmeric rhizome EO (<i>Curcuma longa</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Vanilla fruit (<i>Vanilla planifolia</i>)	Comoros	Provabe	FLO Fairtrade	C
	D.R. Congo	ETS MCI	IMO FFL	C
	India	Fair Trade Alliance Kerala	FLO Fairtrade	C
	India	Indian Organic Farmers Producer Co. Ltd.	FLO Fairtrade	C
	India	Malenadu Savayava Krishi Parivar	FLO Fairtrade	C
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	Phalada Agro Research Foundation Private Ltd	IMO FFL	C
	India	Prasanna Ganapathi Farmers Foundation	FLO Fairtrade	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Association des Planteurs de Mananara	FLO Fairtrade	C
	Madagascar	Association Theodore Vanille	FLO Fairtrade	C
	Madagascar	Association Tsiry Andampin'ny Fosa	FLO Fairtrade	C
	Madagascar	Coopérative Fanohana	FLO Fairtrade	C
	Madagascar	Fikambanan'ny tantsakamahatsiaro tena	FLO Fairtrade	C
	Madagascar	Fikambanany MPAMBOLY	FLO Fairtrade	C
	Madagascar	Fitaratra Antanamangotroka	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Madagascar	SAVANILLE	FLO Fairtrade	C
	Madagascar	SOARANO VANILLE	FLO Fairtrade	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C
	Uganda	Amfri Farms Ltd.	IMO FFL	C
	Uganda	Le Jardin Bio Equitable Farmer Association	IMO FFL	C
	Uganda	Rwenzori Farmers Cooperative Union Ltd	FLO Fairtrade	c
	Vanilla fruit oleoresin (<i>Vanilla planifolia</i>)	Madagascar	Golgemma S.A.	EcoCert ESR
Vetiver root (<i>Vetiveria zizanioides</i>)	Haiti	Agri-Supply Co S.A.	EcoCert ESR	C

Name of MAP	Country	Name of Producer	Standard	W/C
Vetiver root EO (<i>Vetiveria zizanioides</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C
Watermelon seed (<i>Citrullus lanatus</i>)	China	Dalian Huaen Co., Ltd.	IBD EcoSocial	C
White mulberry leaf (<i>Morus alba</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
White pepper fruit (<i>Piper nigrum</i>)	India	Fair Trade Alliance Kerala	FLO Fairtrade	W
	India	Manarcadu Social Service Society	FLO Fairtrade	C
	India	POABS Organic Estates	EcoCert ESR	C
	India	Sahyadri Organic Small Farmers Consortium	FLO Fairtrade	C
	India	Suminter India Organic Farmers Consortium	FLO Fairtrade	C
	India	WSSS Organic Farmers Fairtrade Association (WOFFA)	FLO Fairtrade	C
	Madagascar	Golgemma S.A.	EcoCert ESR	C
	Sri Lanka	Dedigama Maha Perakum Export Agriculture Development Society	FLO Fairtrade	C
	Sri Lanka	Forest Garden Growers Association	FLO Fairtrade	C
	Sri Lanka	Marginalized Organic Producers' Associations	FLO Fairtrade	C
	Sri Lanka	Medadumbara Organic Minor Export Crop Producers' Society	FLO Fairtrade	C
	Sri Lanka	Small Organic Farmers' Association SOFA	FLO Fairtrade	C
Wild apple fruit (<i>Malus silvestris</i>)	Bulgaria	Producer for Martin Bauer GmbH & Co. KG (Germany)	FairWild	W
Wild strawberry leaf (<i>Fragaria vesca</i>)	Uzbekistan	Dustkul Bogi	FLO Fairtrade	W
	Uzbekistan	Turkiston Gulba	FLO Fairtrade	W
	Uzbekistan	Turob Bobo	FLO Fairtrade	W
Wormwood herb (<i>Artemisia absinthium</i>)	Bolivia	Unión de Productores Agropecuarios - UPROAGRO	FLO Fairtrade	C
Ylang-ylang flower EO (<i>Cananga odorata</i>)	Madagascar	Golgemma S.A.	EcoCert ESR	C

Source: Author's elaboration based on survey

Annex VI Number of fair certified MAP articles by country

Countries active in fair-certified MAP trade sorted by number of certified MAP articles

Rank	Name of country	No. of certified producers	No. of certified MAP articles
	TOTAL	232	355
1	India	48	35
2	Uzbekistan	3	32
3	Madagascar	11	31
4	Egypt	6	31
5	Sri Lanka	17	28
6	Uganda	11	25
7	Kenya	20	20
8	China	10	14
9	Bulgaria	2	14
10	Former Yugoslav Republic of Macedonia	1	14
11	Hungary	2	10
12	Plurinational State of Bolivia	1	10
13	Turkey	1	7
14	Bosnia & Herzegovina	1	7
15	Peru	5	6
16	Thailand	2	6
17	Morocco	9	4
18	Brazil	8	4
19	United Republic of Tanzania	5	4
20	Indonesia	2	4
21	Poland	1	4
22	Mexico	6	3
23	Viet Nam	2	3
24	Democratic Republic of the Congo	2	3
25	Togo	1	3
26	Burkina Faso	8	2
27	South Africa	7	2
28	Mali	3	2
29	Ghana	2	2
30	Islamic Republic of Iran	2	2
31	Nicaragua	1	2
32	Palestine	1	2
33	Ethiopia	1	2
34	Malawi	7	1
35	Colombia	5	1
36	Rwanda	2	1
37	Benin	2	1
38	Argentina	2	1
39	The Comoros	1	1
40	Haiti	1	1
41	Zimbabwe	1	1
42	Senegal	1	1
43	Paraguay	1	1
44	Namibia	1	1
45	Kazakhstan	1	1
46	Honduras	1	1
47	Ecuador	1	1
48	Chile	1	1
49	Spain	1	1
50	Nepal	1	1

Source: Author's elaboration based on survey

Annex VII Number of fair-certified producers by country

Countries active in fair certified MAP trade sorted by number of certified producers

Rank	Name of country	No. of certified producers	No. of certified MAP articles
	TOTAL	232	355
1	India	48	35
2	Kenya	20	20
3	Sri Lanka	17	28
4	Madagascar	11	31
5	Uganda	11	25
6	China	10	14
7	Morocco	9	4
8	Brazil	8	4
9	Burkina Faso	8	2
10	South Africa	7	2
11	Malawi	7	1
12	Egypt	6	31
13	Mexico	6	3
14	Peru	5	6
15	United Republic of Tanzania	5	4
16	Colombia	5	1
17	Uzbekistan	3	32
18	Mali	3	2
19	Bulgaria	2	14
20	Hungary	2	10
21	Thailand	2	6
22	Indonesia	2	4
23	Viet Nam	2	3
24	Democratic Republic of the Congo	2	3
25	Ghana	2	2
26	Islamic Republic of Iran	2	2
27	Rwanda	2	1
28	Benin	2	1
29	Argentina	2	1
30	Republic of Macedonia	1	14
31	Plurinational State of Bolivia	1	10
32	Turkey	1	7
33	Bosnia & Herzegovina	1	7
34	Poland	1	4
35	Togo	1	3
36	Nicaragua	1	2
37	State of Palestine	1	2
38	Ethiopia	1	2
39	The Comoros	1	1
40	Haiti	1	1
41	Zimbabwe	1	1
42	Senegal	1	1
43	Paraguay	1	1
44	Namibia	1	1
45	Kazakhstan	1	1
46	Honduras	1	1
47	Ecuador	1	1
48	Chile	1	1
49	Spain	1	1
50	Nepal	1	1

Source: Author's elaboration based on survey

Annex VIII MAPs listed in Pharmacopoeia of the People's Republic of China

	Botanical Name	Traded form
1.	<i>Abelmoschus manihot</i> (L.) Medic.	dried corolla
2.	<i>Abrus cantoniensis</i> Hance	dried herb
3.	<i>Abutilon theophrasti</i> Medic.	dried ripe seed
4.	<i>Acacia catechu</i> (L. f.) Willd.	dried concentrated decoction
5.	<i>Acanthopanax gracilistylus</i> W. W. Smith	dried root bark
6.	<i>Acanthopanax senticosus</i> (Rupr. et Maxim.) Harms	extract
7.	<i>Acanthopanax senticosus</i> (Rupr. et Maxim.) Harms	dried root and rhizome or stem
8.	<i>Achillea alpina</i> L.	dried aerial part
9.	<i>Achyranthes bidentata</i> Bl.	dried root
10.	<i>Aconitum carmichaelii</i> Debx.	dried parent root tuber
11.	<i>Aconitum carmichaelii</i> Debx.	processed daughter root
12.	<i>Aconitum carmichaelii</i> Debx.	prepared parent root tuber
13.	<i>Aconitum kusnezoffii</i> Reichb.	dried leaf
14.	<i>Aconitum kusnezoffii</i> Reichb.	dried root tuber
15.	<i>Aconitum kusnezoffii</i> Reichb.	prepared root tuber
16.	<i>Acorus calamus</i> L.	dried rhizome
17.	<i>Acorus tatarinowii</i> Schott	dried rhizome
18.	<i>Adenophora stricta</i> Miq.	dried root
19.	<i>Adenophora tetraphylla</i> (Thunb.) Fisch.	dried root
20.	<i>Aesculus chinensis</i> Bge.	dried ripe seed
21.	<i>Aesculus chinensis</i> Bge. var. <i>chekiangensis</i> (Hu et Fang) Fang	dried ripe seed
22.	<i>Aesculus wilsonii</i> Rehd.	dried ripe seed
23.	<i>Agrimonia pilosa</i> Ledeb.	dried aerial part
24.	<i>Ailanthus altissima</i> (Mill.) Swingle	dried root bark or stem bark
25.	<i>Ajuga decumbens</i> Thunb.	dried herb
26.	<i>Akebia quinata</i> (Thunb.) Decne	dried nearly ripe fruit
27.	<i>Akebia quinata</i> (Thunb.) Decne.	dried lianoid stem
28.	<i>Akebia trifoliata</i> (Thunb.) Koidz.	dried lianoid stem
29.	<i>Akebia trifoliata</i> (Thunb.) Koidz.	dried nearly ripe fruit
30.	<i>Akebia trifoliata</i> (Thunb.) Koidz. var. <i>australis</i> (Diels) Rehd	dried lianoid stem
31.	<i>Akebia trifoliata</i> (Thunb.) Koidz. var. <i>australis</i> (Diels) Rehd.	dried nearly ripe fruit
32.	<i>Albizia julibrissin</i> Durazz.	dried inflorescence or flower bud
33.	<i>Albizia julibrissin</i> Durazz.	dried stem bark
34.	<i>Alisma orientale</i> (Sam.) Juzep.	dried tuber
35.	<i>Allium chinensis</i> G. Don	dried bulb
36.	<i>Allium macrostemon</i> Bge.	dried bulb
37.	<i>Allium sativum</i> L.	dried bulb
38.	<i>Allium tuberosum</i> Rottl. ex Spreng.	dried ripe seed
39.	<i>Aloe barbadensis</i> Miller	dried concentrated matter
40.	<i>Aloe ferox</i> Miller	dried concentrated matter

	Botanical Name	Traded form
41.	<i>Alpinia galanga</i> Willd.	dried ripe fruit
42.	<i>Alpinia katsumadai</i> Hayata	dried almost ripe seed
43.	<i>Alpinia officinarum</i> Hance	dried rhizome
44.	<i>Alpinia oxyphylla</i> Miq.	dried ripe fruit
45.	<i>Amomum compactum</i> Soland ex Maton	dried ripe fruit
46.	<i>Amomum kravanh</i> Pierre ex Gagnep	dried ripe fruit
47.	<i>Amomum longiligulare</i> T. L. Wu	dried ripe fruit
48.	<i>Amomum tsao-ko</i> Crevost et Lemaire	dried ripe fruit
49.	<i>Amomum villosum</i> Lour.	dried ripe fruit
50.	<i>Amomum villosum</i> Lour. var. <i>xanthioides</i> T. L. Wu et Senjen	dried ripe fruit
51.	<i>Ampelopsis japonica</i> (Thunb.) Makino	dried root tuber
52.	<i>Andrographis paniculata</i> (Burm. f.) Nees	dried aerial part
53.	<i>Anemarrhena asphodeloides</i> Bge.	dried rhizome
54.	<i>Anemone raddeana</i> Regel	dried rhizome
55.	<i>Angelica dahurica</i> (Fisch. ex Hoffm.) Benth. et Hook. f.	dried root
56.	<i>Angelica dahurica</i> (Fisch. ex Hoffm.) Benth. et Hook. f. var. <i>formosana</i> (Boiss.) Shan et Yuan	dried root
57.	<i>Angelica pubescens</i> Maxim. f. <i>biserrata</i> Shan et Yuan	dried root
58.	<i>Angelica sinensis</i> (Oliv.) Diels	liquid extract
59.	<i>Angelica sinensis</i> (Oliv.) Diels	dried root
60.	<i>Apocynum venetum</i> L.	dried leaf
61.	<i>Aquilaria sinensis</i> (Lour.) Gilg	resin
62.	<i>Arctium lappa</i> L.	dried ripe fruit
63.	<i>Ardisia japonica</i> (Thunb.) Blume	dried herb
64.	<i>Ardisia crenata</i> Sims	dried root
65.	<i>Areca catechu</i> L.	dried pericarp
66.	<i>Areca catechu</i> L.	dried ripe seed
67.	<i>Areca catechu</i> L.	charred seed
68.	<i>Arisaema amurense</i> Maxim.	dried tuber
69.	<i>Arisaema erubescens</i> (Wall.) Schott.	dried tuber
70.	<i>Arisaema heterophyllum</i> Bl.	dried tuber
71.	<i>Aristolochia contorta</i> Bge.	dried aerial part
72.	<i>Aristolochia contorta</i> Bge.	dried ripe fruit
73.	<i>Aristolochia debilis</i> Sieb. et Zucc.	dried aerial part
74.	<i>Aristolochia debilis</i> Sieb. et Zucc.	dried ripe fruit
75.	<i>Arnebia euchroma</i> (Royle) Johnst.	dried root
76.	<i>Arnebia guttata</i> Bunge	dried root
77.	<i>Artemisia argyi</i> Levl. et Vant.	dried leaf
78.	<i>Artemisia capillaris</i> Thunb.	extract
79.	<i>Artemisia capillaris</i> Thunb.	dried aerial part
80.	<i>Artemisia scoparia</i> Waldst. et Kit.	extract
81.	<i>Artemisia scoparia</i> Waldst. et Kit.	dried aerial part
82.	<i>Artemisia annua</i> L.	dried aerial part
83.	<i>Asarum heterotropoides</i> Fr. Schmidt var. <i>mandshuricum</i> (Maxim.)	dried root and rhizome

	Botanical Name	Traded form
	Kitag.	
84.	<i>Asarum sieboldii</i> Miq.	dried root and rhizome
85.	<i>Asarum sieboldii</i> Miq. var. <i>seoulense</i> Nakai	dried root and rhizome
86.	<i>Asparagus cochinchinensis</i> (Lour.) Merr.	dried root tuber
87.	<i>Aster tataricus</i> L. f.	dried root and rhizome
88.	<i>Astragalus complanatus</i> R. Br.	dried ripe seed
89.	<i>Astragalus membranaceus</i> (Fisch.) Bge.	dried root
90.	<i>Astragalus membranaceus</i> (Fisch.) Bge. var. <i>mongholicus</i> (Bge.) Hsiao	dried root
91.	<i>Atractylodes chinensis</i> (DC.) Koidz.	dried rhizome
92.	<i>Atractylodes lancea</i> (Thunb.) DC.	dried rhizome
93.	<i>Atractylodes macrocephala</i> Koidz.	dried rhizome
94.	<i>Atropa belladonna</i> L.	dried herb
95.	<i>Atropa belladonna</i> L.	extract
96.	<i>Atropa belladonna</i> L.	liquid extract
97.	<i>Aucklandia lappa</i> Decne.	dried root
98.	<i>Bambusa textilis</i> McClure	dried masses of the secretion
99.	<i>Bambusa tuldoidea</i> Munro	dried middle shavings of the stems
100.	<i>Baphicacanthus cusia</i> (Nees) Bremek.	dried rhizome and root
101.	<i>Baphicacanthus cusia</i> (Nees) Bremek.	dried powder, mass or granules
102.	<i>Belamcanda chinensis</i> (L.) DC.	dried rhizome
103.	<i>Benincasa hispida</i> (Thunb.) Cogn.	dried exocarp
104.	<i>Berberis poiretii</i> Schneid.	dried root
105.	<i>Berberis soulieana</i> Schneid.	dried root
106.	<i>Berberis verna</i> Schneid.	dried root
107.	<i>Berberis wilsonae</i> Hemsl.	dried root
108.	<i>Bletilla striata</i> (Thunb.) Reichb. f.	dried tuber
109.	<i>Bolbostemma paniculatum</i> (Maxim.) Franquet	dried tuber
110.	<i>Boswellia bhawdajiana</i> Birdw.	dried resin
111.	<i>Boswellia carteri</i> Birdw.	dried resin
112.	<i>Brassica juncea</i> (L.) Czern. et Coss.	ripe seed
113.	<i>Broussonetia papyrifera</i> (L.) Vent.	dried ripe fruit
114.	<i>Brucea javanica</i> (L.) Merr.	dried ripe fruit
115.	<i>Buddleja officinalis</i> Maxim.	dried flower bud and its inflorescence
116.	<i>Bupleurum chinense</i> DC.	dried root
117.	<i>Bupleurum scorzonnerifolium</i> Willd.	dried root
118.	<i>Buxus microphylla</i> Sieb. et Zucc. var. <i>sinica</i> Rehd. et Wils.	extract
119.	<i>Caesalpinia sappan</i> L.	dried heart wood
120.	<i>Callicarpa formosana</i> Rolfe	dried leaf
121.	<i>Callicarpa kwangtungensis</i> Chun	dried stem, branch and leaf
122.	<i>Callicarpa macrophylla</i> Vahl	dried leaf or young foliferous branch
123.	<i>Calvatia gigantea</i> (Batsch ex Pers.) Lloyd	dried sporophore
124.	<i>Calvatia lilacina</i> (Mont. et Berk.) Lloyd	dried sporophore
125.	<i>Camellia meiocarpa</i> Hu	fatty oil

	Botanical Name	Traded form
126.	<i>Camellia oleifera</i> Abel	fatty oil
127.	<i>Campsis grandiflora</i> (Thunb.) K. Schum.	dried flower
128.	<i>Campsis radicans</i> (L.) Seem.	dried flower
129.	<i>Canarium album</i> Raeusch.	dried ripe fruit
130.	<i>Canavalia gladiata</i> (Jacq.) DC.	dried ripe seed
131.	<i>Cannabis sativa</i> L.	dried ripe fruit
132.	<i>Capsicum annuum</i> L.	dried ripe fruit
133.	<i>Carpesium abrotanoides</i> L.	dried ripe fruit
134.	<i>Carthamus tinctorius</i> L.	dried flower
135.	<i>Cassia acutifolia</i> Delile	dried leaflet
136.	<i>Cassia angustifolia</i> Vahl	dried leaflet
137.	<i>Cassia obtusifolia</i> L.	dried ripe seed
138.	<i>Cassia tora</i> L.	dried ripe seed
139.	<i>Celosia argentea</i> L.	dried ripe seed
140.	<i>Celosia cristata</i> L.	dried capitulum
141.	<i>Centella asiatica</i> (L.) Urb.	extract
142.	<i>Centella asiatica</i> (L.) Urb.	dried herb
143.	<i>Centipeda minima</i> (L.) A. Br. et Aschers.	dried herb
144.	<i>Chaenomeles speciosa</i> (Sweet) Nakai	dried nearly ripe fruit
145.	<i>Changium smyrnioides</i> Wolff	dried root
146.	<i>Chelidonium majus</i> L.	dried herb
147.	<i>Choerospondias axillaris</i> (Roxb.) Burt et Hill	dried ripe fruit
148.	<i>Chrysanthemum indicum</i> L.	dried capitulum
149.	<i>Chrysanthemum morifolium</i> Ramat.	dried capitulum
150.	<i>Cibotium barometz</i> (L.) J. Sm.	dried rhizome
151.	<i>Cichorium glandulosum</i> Boiss. et Hoet	aerial part or root
152.	<i>Cichorium intybus</i> L.	aerial part or root
153.	<i>Cimicifuga dahurica</i> (Turcz.) Maxim.	dried rhizome
154.	<i>Cimicifuga foetida</i> L.	dried rhizome
155.	<i>Cimicifuga heracleifolia</i> Kom.	dried rhizome
156.	<i>Cinnamomum camphora</i> (L.) Presl	crystal
157.	<i>Cinnamomum camphora</i> (L.) Sieb.	volatile oil
158.	<i>Cinnamomum cassia</i> Presl	dried stem bark
159.	<i>Cinnamomum cassia</i> Presl	dried young branch
160.	<i>Cinnamomum cassia</i> Presl.	volatile oil
161.	<i>Cirsium japonicum</i> DC.	carbonized aerial part
162.	<i>Cirsium japonicum</i> DC.	dried aerial part
163.	<i>Cirsium setosum</i> (Willd.) MB.	dried aerial part
164.	<i>Cissampelos pareira</i> L. var. <i>hirsuta</i> (Buch. ex DC.) Forman	dried whole plant
165.	<i>Cistanche deserticola</i> Y. C. Ma	dried fleshy stem with scales
166.	<i>Cistanche tubulosa</i> (Schrenk) Wight	dried fleshy stem with scales
167.	<i>Citrullus lanatus</i> (Thunb.) Mansfeld.	ripped flesh fruit
168.	<i>Citrus aurantium</i> L.	dried young fruit
169.	<i>Citrus aurantium</i> L.	dried, immature fruit

	Botanical Name	Traded form
170.	<i>Citrus grandis</i> (L.) Osbeck	dried exocarp of unripe or almost ripe
171.	<i>Citrus grandis</i> 'Tomentosa'	dried exocarp of unripe or almost ripe
172.	<i>Citrus medica</i> L.	dried ripe fruit
173.	<i>Citrus medica</i> L. var. <i>sarcodactylis</i> Swingle	dried fruit
174.	<i>Citrus reticulata</i> Blanco	dried pericarp of the ripe fruit
175.	<i>Citrus reticulata</i> Blanco	dried pericarp of the young or immature fruits
176.	<i>Citrus reticulata</i> Blanco	dried exocarp
177.	<i>Citrus reticulata</i> Blanco	dried ripe seed
178.	<i>Citrus sinensis</i> Osbeck	dried young fruit
179.	<i>Citrus wilsonii</i> Tanaka	dried ripe fruit
180.	<i>Clematis armandii</i> Franch.	dried lianoid stem
181.	<i>Clematis chinensis</i> Osbeck	dried root and rhizome
182.	<i>Clematis hexapetala</i> Pall.	dried root and rhizome
183.	<i>Clematis manshurica</i> Rupr.	dried root and rhizome
184.	<i>Clematis montana</i> Buch.-Ham.	dried lianoid stem
185.	<i>Clinopodium chinensis</i> (Benth.) O. Kuntze	dried aerial part
186.	<i>Clinopodium polycephalum</i> (Vaniot) C.Y. Wu et Hsuan	dried aerial part
187.	<i>Cnidium monnieri</i> (L.) Cuss.	dried ripe fruit
188.	<i>Codonopsis pilosula</i> (Franch.) Nannf.	dried root
189.	<i>Codonopsis pilosula</i> Nannf. var. <i>modesta</i> (Nannf.) L. T. Shen	dried root
190.	<i>Codonopsis tangshen</i> Oliv.	dried root
191.	<i>Coix lacryma-jobi</i> L. var. <i>mayuen</i> (Roman.) Stapf	dried ripe kernel
192.	<i>Commelina communis</i> L.	dried aerial part
193.	<i>Commiphora molmol</i> Engl.	dried resin
194.	<i>Commiphora myrrha</i> Engl.	dried resin
195.	<i>Conyza blinii</i> Levl.	dried aerial part
196.	<i>Coptis chinensis</i> Franch	dried rhizome
197.	<i>Coptis deltoidea</i> C. Y. Cheng et Hsiao	dried rhizome
198.	<i>Coptis teeta</i> Wall.	dried rhizome
199.	<i>Cordyceps sinensis</i> (Berk) Sacc.	stroma of the fungus
200.	<i>Coriolus versicolor</i> (L. ex Fr.) Quel.	dried sporophore
201.	<i>Cornus officinalis</i> Sieb. et Zucc.	dried ripe sarcocarp
202.	<i>Corydalis bungeana</i> Turcz.	dried herb
203.	<i>Corydalis decumbens</i> (Thunb.) Pers.	dried tuber
204.	<i>Corydalis yanhusuo</i> W. T. Wang	dried tuber
205.	<i>Crataegus pinnatifida</i> Bge. var. <i>major</i> N. E. Br.	extract
206.	<i>Crataegus pinnatifida</i> Bge. var. <i>major</i> N. E. Br.	dried leaf
207.	<i>Crataegus pinnatifida</i> Bge.	extract
208.	<i>Crataegus pinnatifida</i> Bge.	dried leaf
209.	<i>Cremastra appendiculata</i> (D. Don) Makino	dried pseudobulb
210.	<i>Crocus sativus</i> L.	dried stigma
211.	<i>Croton tiglium</i> L.	dried ripe fruit
212.	<i>Croton tiglium</i> L.	powder

	Botanical Name	Traded form
213.	<i>Cucumis mela</i> L.	dried ripe seed
214.	<i>Curculigo orchioides</i> Gaertn.	dried rhizome
215.	<i>Curcuma kwangsiensis</i> S.G. Lee et C. F. Liang	dried root tuber
216.	<i>Curcuma kwangsiensis</i> S.G. Lee et C. F. Liang	dried rhizome
217.	<i>Curcuma longa</i> L.	dried rhizome
218.	<i>Curcuma longa</i> L.	dried root tuber
219.	<i>Curcuma phaeocalis</i> Val.	dried root tuber
220.	<i>Curcuma phaeocalis</i> Valeton	dried rhizome
221.	<i>Curcuma wenyujin</i> Y. H. Chen et C. Ling	dried root tuber
222.	<i>Curcuma wenyujin</i> Y. H. Chen et C. Ling	dried rhizome
223.	<i>Curcuma wenyujin</i> Y. H. Chen et C. Ling	dried rhizome
224.	<i>Cuscuta australis</i> R. Br.	dried ripe seed
225.	<i>Cuscuta chinensis</i> Lam.	dried ripe seed
226.	<i>Cyathula officinalis</i> Kuan	dried root
227.	<i>Cynanchum atratum</i> Bge.	dried root and rhizome
228.	<i>Cynanchum glaucescens</i> (Decne.) Hand.-Mazz.	dried rhizome and root
229.	<i>Cynanchum paniculatum</i> (Bge.) Kitag.	dried root and rhizome
230.	<i>Cynanchum stauntonii</i> (Decne.) Schltr. ex Levl.	dried rhizome and root
231.	<i>Cynanchum versicolor</i> Bge.	dried root and rhizome
232.	<i>Cynomorium songaricum</i> Rupr.	dried fleshy stem
233.	<i>Cyperus rotundus</i> L.	dried rhizome
234.	<i>Daemonorops draco</i> Bl.	prepared resin
235.	<i>Dalbergia odorifera</i> T. Chen	dried heart wood of the trunk and root
236.	<i>Daphne genkwa</i> Sieb. et Zucc.	dried flower bud
237.	<i>Datura metel</i> L.	dried flower
238.	<i>Daucus carota</i> L.	dried ripe fruit
239.	<i>Dendrobium chrysotoxum</i> Lindl.	fresh or dried stem of cultivated species
240.	<i>Dendrobium fimbriatum</i> Hook.	fresh or dried stem of cultivated species
241.	<i>Dendrobium nobile</i> Lindl.	fresh or dried stem of cultivated species
242.	<i>Dendrobium officinale</i> Kimura et Migo	dried stem
243.	<i>Descurainia sophia</i> (L.) Webb ex Prantl	dried ripe seed
244.	<i>Desmodium styracifolium</i> (Osb.) Merr.	dried aerial part
245.	<i>Dianthus chinensis</i> L.	dried aerial part
246.	<i>Dianthus superbus</i> L.	dried aerial part
247.	<i>Dichroa febrifuga</i> Lour.	dried root
248.	<i>Dictamnus dasycarpus</i> Turcz.	dried root bark
249.	<i>Dimocarpus longan</i> Lour.	aril
250.	<i>Dioscorea futschauensis</i> Uline ex R.Kunth	dried rhizome
251.	<i>Dioscorea hypoglauca</i> Palibin	dried rhizome
252.	<i>Dioscorea nipponica</i> Makino	dried rhizome
253.	<i>Dioscorea opposita</i> Thunb.	dried rhizome

	Botanical Name	Traded form
254.	<i>Dioscorea panthaica</i> Prain et Burk.	dried rhizome
255.	<i>Dioscorea spongiosa</i> J. Q. Xi, M. Mizuno et W.L. Zhao	dried rhizome
256.	<i>Diospyros kaki</i> Thunb.	dried persistent calyx
257.	<i>Dipsacus asper</i> Wall. ex Henry	dried root
258.	<i>Dolichos lablab</i> L.	dried ripe seed
259.	<i>Drynaria fortunei</i> (Kunze) J. Sm.	dried rhizome
260.	<i>Dryopteris crassirhizoma</i> Nakai	carbonized rhizome and frond bases
261.	<i>Dryopteris crassirhizoma</i> Nakai	dried rhizome and frond bases
262.	<i>Echinops grijisii</i> Hance	dried root
263.	<i>Echinops latifolius</i> Tausch.	dried root
264.	<i>Ecklonia kurome</i> Okam.	dried thalline
265.	<i>Eclipta prostrata</i> L.	dried aerial part
266.	<i>Entada phaseoloides</i> (Linn.) Merr.	dried ripe seed
267.	<i>Ephedra equisetina</i> Bge.	dried herbaceous stem
268.	<i>Ephedra intermedia</i> Schrenk et C.A. Mey.	dried herbaceous stem
269.	<i>Ephedra intermedia</i> Schrenk et C.A. Mey.	dried root and rhizome
270.	<i>Ephedra sinica</i> Stapf	dried herbaceous stem
271.	<i>Ephedra sinica</i> Stapf	dried root and rhizome
272.	<i>Epimedium brevicornum</i> Maxim.	dried leaf
273.	<i>Epimedium koreanum</i> Nakai	dried leaf
274.	<i>Epimedium pubescens</i> Maxim.	dried leaf
275.	<i>Epimedium sagittatum</i> (Sieb. et Zucc.) Maxim.	dried leaf
276.	<i>Epimedium wushanense</i> T. S. Ying	dried leaf
277.	<i>Equisetum hyemale</i> L.	dried aerial part
278.	<i>Erigeron breviscapus</i> (Vant.) Hand.-Mazz.	dried herb
279.	<i>Eriobotrya japonica</i> (Thunb.) Lindl.	dried leaf
280.	<i>Eriocaulon buergerianum</i> Koern.	dried capitulum with peduncle
281.	<i>Erodium stephanianum</i> Willd.	dried aerial part
282.	<i>Erycibe obtusifolia</i> Benth.	dried lianoid stem
283.	<i>Erycibe schmidtii</i> Craib	dried lianoid stem
284.	<i>Eucalyptus globulus</i> Labill.	volatile oil
285.	<i>Eucommia ulmoides</i> Oliv.	dried stem bark
286.	<i>Eucommia ulmoides</i> Oliv.	dried leaf
287.	<i>Eugenia caryophyllata</i> Thunb.	dried flower bud
288.	<i>Eugenia caryophyllata</i> Thunb.	dried fruit
289.	<i>Euodia rutaecarpa</i> (Juss.) Benth.	dried and nearly ripe fruit
290.	<i>Euodia rutaecarpa</i> (Juss.) Benth. var. <i>bodinieri</i> (Dode) Huang	dried and nearly ripe fruit
291.	<i>Euodia rutaecarpa</i> (Juss.) Benth. var. <i>officinalis</i> (Dode) Huang	dried and nearly ripe fruit
292.	<i>Eupatorium fortunei</i> Turcz.	dried aerial part
293.	<i>Eupatorium lindleyanum</i> DC.	dried aerial part
294.	<i>Euphorbia ebracteolata</i> Hayata	dried root
295.	<i>Euphorbia fischeriana</i> Steud.	dried root
296.	<i>Euphorbia hirta</i> L.	dried whole plant
297.	<i>Euphorbia humifusa</i> Willd.	dried herb

	Botanical Name	Traded form
298.	<i>Euphorbia kansui</i> T. N. Liou ex T. P. Wang	dried tuber root
299.	<i>Euphorbia lathyris</i> L.	dried ripe seed
300.	<i>Euphorbia lathyris</i> L.	powder
301.	<i>Euphorbia maculata</i> L.	dried herb
302.	<i>Euphorbia pekinensis</i> Rupr.	dried root
303.	<i>Euryale ferox</i> Salisb.	dried kernel of ripe seed
304.	<i>Fagopyrum dibotrys</i> (D. Don) Hara	dried rhizome
305.	<i>Ferula fukanensis</i> K. M. Shen	resin
306.	<i>Ferula sinkiangensis</i> K. M. Shen	resin
307.	<i>Fibraurea recisa</i> Pierre.	dried lianoid stem
308.	<i>Foeniculum vulgare</i> Mill.	dried ripe fruit
309.	<i>Forsythia suspensa</i> (Thunb.) Vahl	extract
310.	<i>Forsythia suspensa</i> (Thunb.) Vahl	dried fruit
311.	<i>Fraxinus chinensis</i> Roxb.	dried branch bark or stem bark
312.	<i>Fraxinus rhynchophylla</i> Hance	dried branch bark or stem bark
313.	<i>Fraxinus stylosa</i> Lingelsh.	dried branch bark or stem bark
314.	<i>Fraxinus szaboana</i> Lingelsh.	dried branch bark or stem bark
315.	<i>Fritillaria cirrhosa</i> D. Don	dried bulb
316.	<i>Fritillaria delavayi</i> Franch.	dried bulb
317.	<i>Fritillaria hupehensis</i> Hsiao et K. C. Hsia	dried bulb
318.	<i>Fritillaria pallidiflora</i> Schrenk	dried bulb
319.	<i>Fritillaria przewalskii</i> Maxim.	dried bulb
320.	<i>Fritillaria taipaiensis</i> P. Y. Li	dried bulb
321.	<i>Fritillaria thunbergii</i> Miq.	extract
322.	<i>Fritillaria thunbergii</i> Miq.	dried bulb
323.	<i>Fritillaria unibracteata</i> Hsiao et K.C. Hsia var. <i>wabuensis</i> (S.Y.Tang et S.C.Yue) Z.D.Liu, S.Wang et S.C.Chen	dried bulb
324.	<i>Fritillaria unibracteata</i> Hsiao et K. C. Hsia	dried bulb
325.	<i>Fritillaria ussuriensis</i> Maxim.	dried bulb
326.	<i>Fritillaria walujewii</i> Regel	dried bulb
327.	<i>Ganoderma lucidum</i> (Leyss. Ex Fr.) Karst.	dried sporophore
328.	<i>Ganoderma sinensis</i> Zhao, Xu et Zhang.	dried sporophore
329.	<i>Gardenia jasminoides</i> Ellis	dried ripe fruit
330.	<i>Gardenia jasminoides</i> Ellis	charred fruit
331.	<i>Gastrodia elata</i> Bl.	dried tuber
332.	<i>Gendarussa vulgaris</i> Nees	dried aerial part
333.	<i>Gentiana crassicaulis</i> Duthie ex Burk	dried root
334.	<i>Gentiana dahurica</i> Fisch.	dried root
335.	<i>Gentiana macrophylla</i> Pall.	dried root
336.	<i>Gentiana manshurica</i> Kitag.	dried root and rhizome
337.	<i>Gentiana rigescens</i> Franch.	dried root and rhizome
338.	<i>Gentiana scabra</i> Bge.	dried root and rhizome
339.	<i>Gentiana straminea</i> Maxim	dried root
340.	<i>Gentiana triflora</i> Pall.	dried root and rhizome

	Botanical Name	Traded form
341.	<i>Geranium carolinianum</i> L.	dried aerial part
342.	<i>Geranium wilfordii</i> Maxim.	dried aerial part
343.	<i>Geum aleppicum</i> Jacq.	dried herb
344.	<i>Geum japonicum</i> Thunb. var. <i>chinense</i> Bolle	dried herb
345.	<i>Ginkgo biloba</i> L.	dried leaf
346.	<i>Ginkgo biloba</i> L.	dried ripe seed
347.	<i>Ginkgo biloba</i> L.	extract
348.	<i>Glechoma longituba</i> (Nakai) Kupr.	dried aerial part
349.	<i>Gleditsia sinensis</i> Lam.	dried ripe fruit
350.	<i>Gleditsia sinensis</i> Lam.	sterile fruit
351.	<i>Gleditsia sinensis</i> Lam.	dried spine
352.	<i>Glehnia littoralis</i> Fr. Schmidt ex Miq.	dried root
353.	<i>Glycine max</i> (L.) Merr.	dried ripe seed
354.	<i>Glycine max</i> (L.) Merr.	fermented preparation
355.	<i>Glycine max</i> (L.) Merr.	germinated ripe seed
356.	<i>Glycyrrhiza glabra</i> L.	extract
357.	<i>Glycyrrhiza glabra</i> L.	liquid extract
358.	<i>Glycyrrhiza glabra</i> L.	dried root and rhizome
359.	<i>Glycyrrhiza inflata</i> Bat.	extract
360.	<i>Glycyrrhiza inflata</i> Bat.	liquid extract
361.	<i>Glycyrrhiza inflata</i> Bat.	dried root and rhizome
362.	<i>Glycyrrhiza uralensis</i> Fisch.	extract
363.	<i>Glycyrrhiza uralensis</i> Fisch.	liquid extract
364.	<i>Glycyrrhiza uralensis</i> Fisch.	dried root and rhizome
365.	<i>Gossampinus malabarica</i> (DC.) Merr.	dried flower
366.	<i>Hedysarum polybotrys</i> Hand.-Mazz.	dried root
367.	<i>Helwingia japonica</i> (Thunb.) Dietr.	dried stem pith
368.	<i>Hippophae rhamnoides</i> L.	dried ripe fruit
369.	<i>Homalomena occulta</i> (Lour.) Schott	dried rhizome
370.	<i>Hordeum vulgare</i> L.	dried germinated ripe fruit
371.	<i>Houttuynia cordata</i> Thunb.	fresh or dried aerial part
372.	<i>Hyoscyamus niger</i> L.	dried ripe seed
373.	<i>Hypericum perforatum</i> L.	dried aerial part
374.	<i>Ilex chinensis</i> Sims.	dried leaf
375.	<i>Ilex cornuta</i> Lindl. ex Paxt.	dried leaf
376.	<i>Ilex totunda</i> Thunb.	dried bark
377.	<i>Illicium difengpi</i> K. I. B. et K. I. M.	dried stem bark
378.	<i>Illicium verum</i> Hook. f.	volatile oil
379.	<i>Illicium verum</i> Hook. f.	dried ripe fruit
380.	<i>Imperata cylindrica</i> Beauv. var. <i>major</i> (Nees) C. E. Hubb.	dried rhizome
381.	<i>Inula britannica</i> L.	dried capitulum
382.	<i>Inula helenium</i> L.	dried root
383.	<i>Inula japonica</i> Thunb.	dried capitulum
384.	<i>Inula japonica</i> Thunb.	dried aerial part

	Botanical Name	Traded form
385.	<i>Inula linariifolia</i> Turcz.	dried aerial part
386.	<i>Iris tectorum</i> Maxim.	dried rhizome
387.	<i>Isatis indigotica</i> Fort.	dried leaf
388.	<i>Isatis indigotica</i> Fort.	dried root
389.	<i>Isatis indigotica</i> Fort.	dried powder, mass or granules
390.	<i>Juglans regia</i> L.	dried ripe seed
391.	<i>Juncus effusus</i> L.	dried stem pith
392.	<i>Kadsura interior</i> A. C. Smith	dried lianoid stem
393.	<i>Kaempferia galanga</i> L.	dried rhizome
394.	<i>Knoxia valerianoides</i> Thorel et Pitard	dried root
395.	<i>Kochia scoparia</i> (L.) Schrad.	dried ripe fruit
396.	<i>Laggera pterodonta</i> (DC.) Benth.	dried aerial part
397.	<i>Lagotis brevifolia</i> Maxim.	dried herb
398.	<i>Laminaria japonica</i> Aresch.	dried thalline
399.	<i>Lamiophlomis rotata</i> (Benth.) Kudo	dried aerial part
400.	<i>Lasiosphaera fenzlii</i> Reich.	dried sporophore
401.	<i>Leonurus japonicus</i> Houtt.	liquid extract
402.	<i>Leonurus japonicus</i> Houtt.	dried ripe fruit
403.	<i>Leonurus japonicus</i> Houtt.	fresh or dried aerial part
404.	<i>Lepidium apetalum</i> Willd.	dried ripe seed
405.	<i>Ligusticum chuanxiong</i> Hort.	dried rhizome
406.	<i>Ligusticum jeholense</i> Nakai et Kitag.	dried rhizome and root
407.	<i>Ligusticum sinense</i> Oliv.	dried rhizome and root
408.	<i>Ligustrum lucidum</i> Ait.	dried ripe fruit
409.	<i>Lilium brownii</i> F. E. Brown var. <i>viridulum</i> Baker	dried fleshy scale leaf
410.	<i>Lilium lancifolium</i> Thunb.	dried fleshy scale leaf
411.	<i>Lilium pumilum</i> DC.	dried fleshy scale leaf
412.	<i>Lindera aggregata</i> (Sims) Kosterm.	dried root tuber
413.	<i>Lindera communis</i> Hemsl.	solid fat
414.	<i>Linum usitatissimum</i> L.	dried ripe seed
415.	<i>Liquidambar formosana</i> Hance	dried ripe infructescences
416.	<i>Liquidambar formosana</i> Hance	dried resin
417.	<i>Liquidambar orientalis</i> Mill.	purified balsam
418.	<i>Liriope muscari</i> (Decne.) Bailey	dried root tuber
419.	<i>Liriope spicata</i> (Thunb.) Lour. var. <i>prolifera</i> Y. T. Ma	dried root tuber
420.	<i>Litchi chinensis</i> Sonn.	dried ripe seed
421.	<i>Litsea cubeba</i> (Lour.) Pers.	dried ripe fruit
422.	<i>Impatiens balsamina</i> L.	dried ripe seed
423.	<i>Lobelia chinensis</i> Lour.	dried herb
424.	<i>Lonicera confusa</i> DC.	dried flower bud or with opening flower
425.	<i>Lonicera fulvotomentosa</i> Hsu et S. C. Cheng	dried flower bud or with opening flower
426.	<i>Lonicera hypoglauca</i> Miq.	dried flower bud or with opening flower

	Botanical Name	Traded form
427.	<i>Lonicera japonica</i> Thunb.	dried stem and branch
428.	<i>Lonicera japonica</i> Thunb.	dried flower bud or opening flower
429.	<i>Lonicera macranthoides</i> Hand.-Mazz.	dried flower bud or with opening flower
430.	<i>Lophatherum gracile</i> Brongn.	dried stem and leaf
431.	<i>Luffa cylindrica</i> (L.) Roem.	dried vascular bundles of ripe fruit
432.	<i>Lycium barbarum</i> L.	dried ripe fruit
433.	<i>Lycium barbarum</i> L.	dried root bark
434.	<i>Lycium chinense</i> Mill.	dried root bark
435.	<i>Lycopodium japonicum</i> Thunb.	dried herb
436.	<i>Lycopus lucidus</i> Turcz. var. <i>hirtus</i> Regel	dried aerial part
437.	<i>Lygodium japonicum</i> (Thunb.) Sw.	dried ripe spores
438.	<i>Lysimachia christinae</i> Hance	dried herb
439.	<i>Lysionotus pauciflorus</i> Maxim.	dried aerial part
440.	<i>Magnolia biondii</i> Pamp.	dried flower bud
441.	<i>Magnolia denudata</i> Desr.	dried flower bud
442.	<i>Magnolia officinalis</i> Rehd. et Wils.	dried stem bark, root bark or branch bark
443.	<i>Magnolia officinalis</i> Rehd. et Wils.	dried flower bud
444.	<i>Magnolia officinalis</i> Rehd. et Wils. var. <i>biloba</i> Rehd. et Wils	dried flower bud
445.	<i>Magnolia officinalis</i> Rehd. et Wils. var. <i>biloba</i> Rehd. et Wils.	dried stem bark, root bark or branch bark
446.	<i>Magnolia sprengeri</i> Pamp.	dried flower bud
447.	<i>Mahonia bealei</i> (Fort.) Carr.	dried stem
448.	<i>Mahonia fortunei</i> (Lindl.) Fedde	dried stem
449.	<i>Malva verticillata</i> L.	dried ripe fruit
450.	<i>Marsdenia tenacissima</i> (Roxb.) Wight et Am.	dried lianoid stem
451.	<i>Melia azedarach</i> L.	dried stem bark or root bark
452.	<i>Melia toosendan</i> Sieb. et Zucc.	dried stem bark or root bark
453.	<i>Melia toosendan</i> Sieb. et Zucc.	dried ripe fruit
454.	<i>Menispermum dauricum</i> DC.	dried rhizome
455.	<i>Menispermum dauricum</i> DC.	extract
456.	<i>Mentha haplocalyx</i> Briq.	volatile oil
457.	<i>Mentha haplocalyx</i> Briq.	dried aerial part
458.	<i>Microcos paniculata</i> L.	dried leaf
459.	<i>Momordica cochinchinensis</i> (Lour.) Spreng.	dried ripe seed
460.	<i>Morinda officinalis</i> How	dried root
461.	<i>Morus alba</i> L.	dried fruit-spike
462.	<i>Morus alba</i> L.	dried leaf
463.	<i>Morus alba</i> L.	dried young branch
464.	<i>Morus alba</i> L.	dried root bark
465.	<i>Mosla chinensis</i> 'Jiangxiangru'	dried aerial part
466.	<i>Mosla chinensis</i> Maxim.	dried aerial part
467.	<i>Murraya exotica</i> L.	dried leaf and young foliferous branch

	Botanical Name	Traded form
468.	<i>Murraya paniculata</i> (L.) Jack	dried leaf and young foliferous branch
469.	<i>Myristica fragrans</i> Houtt	dried kernel
470.	<i>Nardostachys jatamansi</i> DC.	dried root and rhizome
471.	<i>Nelumbo nucifera</i> Gaertn.	dried leaf
472.	<i>Nelumbo nucifera</i> Gaertn.	dried young cotyledon and radicle of the ripe seed
473.	<i>Nelumbo nucifera</i> Gaertn.	dried receptacle
474.	<i>Nelumbo nucifera</i> Gaertn.	dried node
475.	<i>Nelumbo nucifera</i> Gaertn.	dried ripe seed
476.	<i>Nelumbo nucifera</i> Gaertn.	dried stamen
477.	<i>Nigella glandulifera</i> Freyn et Sint.	dried seed
478.	<i>Notopterygium franchetii</i> H. de Boiss.	dried rhizome and root
479.	<i>Notopterygium incisum</i> Ting ex H. T. Chang	dried rhizome and root
480.	<i>Ocimum gratissimum</i> L.	volatile oil
481.	<i>Omphalia lapidescens</i> Schroet.	dried sclerotium
482.	<i>Ophiopogon japonicus</i> (Thunb.) Ker-Gawl.	dried root tuber
483.	<i>Orostachys fimbriatus</i> (Turcz.) Berg.	dried aerial part
484.	<i>Oroxylum indicum</i> (L.) Vent.	dried ripe seed
485.	<i>Oryza sativa</i> L.	dried germinated ripe fruit
486.	<i>Osmunda japonica</i> Thunb.	dried rhizome and frond bases
487.	<i>Paeonia lactiflora</i> Pall.	dried root
488.	<i>Paeonia lactiflora</i> Pall.	dried root
489.	<i>Paeonia suffruticosa</i> Andr.	dried root bark
490.	<i>Paeonia veitchii</i> Lynch	dried root
491.	<i>Panax ginseng</i> C. A. Mey.	steamed and dried root
492.	<i>Panax ginseng</i> C. A. Mey.	dried root
493.	<i>Panax ginseng</i> C. A. Mey.	dried leaf
494.	<i>Panax ginseng</i> C.A. Mey.	extract of the root
495.	<i>Panax ginseng</i> C.A. Mey.	zongzaogan
496.	<i>Panax japonicus</i> C. A. Mey.	dried rhizome
497.	<i>Panax japonicus</i> C. A. Mey. var. <i>bipinnatifidus</i> (Seem.) C. Y. Wu et K. M. Feng	dried rhizome
498.	<i>Panax japonicus</i> C. A. Mey. var. <i>major</i> (Burk.) C. Y. Wu et K. M. Feng	dried rhizome
499.	<i>Panax notoginseng</i> (Burk.) F. H. Chen	dried root
500.	<i>Panax quinquefolium</i> L.	dried root
501.	<i>Papaver somniferum</i> L.	dried pericarp of the ripe fruit
502.	<i>Paris polyphylla</i> Smith var. <i>chinensis</i> (Franch.) Hara	dried rhizome
503.	<i>Paris polyphylla</i> Smith var. <i>yunnanensis</i> (Franch.) Hand.-Mazz.	dried rhizome
504.	<i>Pegaeophyton scapiflorum</i> Marq. et Shaw	dried root and rhizome
505.	<i>Perilla frutescens</i> (L.) Britt.	dried ripe fruit
506.	<i>Perilla frutescens</i> (L.) Britt.	dried leaf (or bearing young branch)
507.	<i>Perilla frutescens</i> (L.) Britt.	dried stem
508.	<i>Periploca sepium</i> Bge.	dried root bark

	Botanical Name	Traded form
509.	<i>Peucedanum decursivum</i> (Miq.) Maxim.	dried root and rhizome
510.	<i>Peucedanum praeruptorum</i> Dunn	dried root
511.	<i>Pharbitis nil</i> (L.) Choisy	dried ripe seed
512.	<i>Pharbitis purpurea</i> (L.) Voigt	dried ripe seed
513.	<i>Phellodendron amurense</i> Rupr.	dried bark
514.	<i>Phellodendron chinensis</i> Schneid.	dried bark
515.	<i>Phragmites communis</i> Trin.	fresh or dried rhizome
516.	<i>Phyllanthus emblica</i> L.	dried ripe fruit
517.	<i>Phyllostachys nigra</i> (Lodd) Munro var. <i>henonis</i> (Mitf.) Stapf ex Renelle	dried middle shavings of the stems
518.	<i>Physalis alkekengi</i> L. var. <i>franchetii</i> (Mast.) Makino	dried persistent calyx or the persistent calyx with fruit
519.	<i>Physochlaina infundibularis</i> Kuang	dried root
520.	<i>Phytolacca acinosa</i> Roxb.	dried root
521.	<i>Phytolacca americana</i> L.	dried root
522.	<i>Picrasma quassioides</i> (D. Don) Benn.	dried branch and leaf
523.	<i>Picria fel-terrae</i> Lour.	dried herb
524.	<i>Picrorhiza scrophulariiflora</i> Pennell	dried rhizome
525.	<i>Pinellia ternata</i> (Thunb.) Breit.	dried tuber
526.	<i>Pinus massoniana</i> Lamb.	dried pollen
527.	<i>Pinus massoniana</i> Lamb.	dried tuberculate or branched nodes
528.	<i>Pinus</i> spp.	volatile oil
529.	<i>Pinus tabulaeformis</i> Carr.	dried pollen
530.	<i>Pinus tabulaeformis</i> Carr.	dried tuberculate or branched nodes
531.	<i>Piper kadsura</i> (Choisy) Ohwi	dried stem
532.	<i>Piper longum</i> L.	dried and nearly ripe or ripe fruit-spike
533.	<i>Piper nigrum</i> L.	dried and nearly ripe or ripe fruit
534.	<i>Plantago asiatica</i> L.	dried herb
535.	<i>Plantago asiatica</i> L.	dried ripe seed
536.	<i>Plantago depressa</i> Willd.	dried herb
537.	<i>Plantago depressa</i> Willd.	dried ripe seed
538.	<i>Platyclusus orientalis</i> (L.) Franco	dried ripe kernel
539.	<i>Platyclusus orientalis</i> (L.) Franeo	dried twig and leaf
540.	<i>Platycodon grandiflorum</i> (Jacq.) A. De.	dried root
541.	<i>Pleione bulbocodioides</i> (Franch.) Rolfe	dried pseudobulb
542.	<i>Pleione yunnanensis</i> Rolfe	dried pseudobulb
543.	<i>Podophyllum hexandrum</i> Royle Ying	dried ripe fruit
544.	<i>Pogostemon cablin</i> (Blanco) Benth.	dried aerial part
545.	<i>Pogostemon cablin</i> (Blanco) Benth.	volatile oil
546.	<i>Polygala japonica</i> Houtt.	dried herb
547.	<i>Polygala sibirica</i> L.	liquid extract
548.	<i>Polygala sibirica</i> L.	dried root
549.	<i>Polygala tenuifolia</i> Willd.	liquid extract
550.	<i>Polygala tenuifolia</i> Willd.	dried root

	Botanical Name	Traded form
551.	<i>Polygonum perfoliatum</i> L.	dried aerial part
552.	<i>Polygonatum cyrtoneura</i> Hua	dried rhizome
553.	<i>Polygonatum kingianum</i> Coll. et Hemsl.	dried rhizome
554.	<i>Polygonatum odoratum</i> (Mill.) Druce	dried rhizome
555.	<i>Polygonatum sibiricum</i> Red.	dried rhizome
556.	<i>Polygonum aviculare</i> L.	dried aerial part
557.	<i>Polygonum bistorta</i> L.	dried rhizome
558.	<i>Polygonum cuspidatum</i> Sieb. et Zucc.	dried rhizome and root
559.	<i>Polygonum multiflorum</i> Thunb.	dried root tuber
560.	<i>Polygonum multiflorum</i> Thunb.	dried lianoid stem
561.	<i>Polygonum orientale</i> L.	dried ripe fruit
562.	<i>Polygonum tinctorium</i> Ait.	dried leaf
563.	<i>Polygonum tinctorium</i> Ait.	dried powder, mass or granules
564.	<i>Polyporus umbellatus</i> (Pers.) Fries	dried sclerotium
565.	<i>Poria cocos</i> (Schw.) Wolf	dried sclerotium of the fungus
566.	<i>Poria cocos</i> (Schw.) Wolf	dried skin of the sclerotium
567.	<i>Portulaca oleracea</i> L.	dried aerial part
568.	<i>Potentilla chinensis</i> Sero	dried herb
569.	<i>Potentilla discolor</i> Bge.	dried herb
570.	<i>Prinsepia uniflora</i> Batal.	dried ripe kernel
571.	<i>Prinsepia uniflora</i> Batal. var. <i>serrata</i> Rehd.	dried ripe kernel
572.	<i>Prunus persica</i> (L.) Batsch	dried twig
573.	<i>Prunella vulgaris</i> L.	dried fruit spike
574.	<i>Prunus armeniaca</i> L.	dried ripe seed
575.	<i>Prunus armeniaca</i> L. var. <i>ansu</i> Maxim.	dried ripe seed
576.	<i>Prunus davidiana</i> (Carr.) Franch.	dried ripe seed
577.	<i>Prunus humilis</i> Bge.	dried ripe seed
578.	<i>Prunus japonica</i> Thunb.	dried ripe seed
579.	<i>Prunus mandshurica</i> (Maxim) Koehne	dried ripe seed
580.	<i>Prunus mume</i> (Sieb.) Sieb. et Zucc.	dried flower bud
581.	<i>Prunus mume</i> (Sieb.) Sieb. et Zucc.	almost ripe and dried fruit
582.	<i>Prunus pedunculata</i> Maxim	dried ripe seed
583.	<i>Prunus persica</i> (L.) Batsch	dried ripe seed
584.	<i>Prunus sibirica</i> L.	dried ripe seed
585.	<i>Psammosilene tunicoides</i> W. C. Wu et C. Y. Wu	dried root
586.	<i>Pseudolarix amabilis</i> (Nelson) Rehd	dried root bark or stem bark near the root
587.	<i>Pseudostellaria heterophylla</i> (Miq.) Pax ex Pax et Hoffm.	dried root tuber
588.	<i>Psoralea corylifolia</i> L.	dried ripe fruit
589.	<i>Pterocephalus hookeri</i> (C. B. Clarke) Höeck	dried herb
590.	<i>Pueraria lobata</i> (Willd.) Ohwi	dried root
591.	<i>Pueraria thomsonii</i> Benth.	dried root
592.	<i>Pulsatilla chinensis</i> (Bge.) Regel	dried root
593.	<i>Punica granatum</i> L.	dried pericarp

	Botanical Name	Traded form
594.	<i>Pyrola calliantha</i> H. Andres	dried herb
595.	<i>Pyrola decorata</i> H. Andres	dried herb
596.	<i>Pyrrhosia lingua</i> (Thunb.) Farwell	dried leaf
597.	<i>Pyrrhosia petiolosa</i> (Christ) Ching	dried leaf
598.	<i>Pyrrhosia sheareri</i> (Bak.) Ching	dried leaf
599.	<i>Quisqualis indica</i> L.	dried ripe fruit
600.	<i>Rabdosia rubescens</i> (Hemsl.)	dried aerial part
601.	<i>Ranunculus ternatus</i> Thunb.	dried root tuber
602.	<i>Raphanus sativus</i> L.	dried ripe seed
603.	<i>Rehmannia glutinosa</i> Libosch.	fresh or dried root tuber
604.	<i>Rhaponticum uniflorum</i> (L.) DC.	dried root
605.	<i>Rheum officinale</i> Baill.	extract
606.	<i>Rheum officinale</i> Baill.	liquid extract
607.	<i>Rheum officinale</i> Baill.	dried root and rhizome
608.	<i>Rheum palmatum</i> L.	extract
609.	<i>Rheum palmatum</i> L.	liquid extract
610.	<i>Rheum palmatum</i> L.	dried root and rhizome
611.	<i>Rheum tanguticum</i> Maxim. ex Balf.	extract
612.	<i>Rheum tanguticum</i> Maxim. ex Balf.	liquid extract
613.	<i>Rheum tanguticum</i> Maxim. ex Balf.	dried root and rhizome
614.	<i>Rhodiola crenulata</i> (Hook. f. et Thomas.) H. Ohba	dried root and rhizome
615.	<i>Rhododendron dauricum</i> L.	dried leaf
616.	<i>Rhododendron dauricum</i> L.	volatile oil
617.	<i>Rhododendron molle</i> G. Don	dried flower
618.	<i>Ricinus communis</i> L.	dried ripe seed
619.	<i>Ricinus communis</i> L.	fatty oil
620.	<i>Rosa chinensis</i> Jacq.	dried flower
621.	<i>Rosa laevigata</i> Michx.	dried ripe fruit
622.	<i>Rosa rugosa</i> Thunb.	dried flower bud
623.	<i>Rubia cordifolia</i> L.	dried root and rhizome
624.	<i>Rubus chingii</i> Hu	dried fruit
625.	<i>Salvia miltiorrhiza</i> Bge.	dried root and rhizome
626.	<i>Sanguisorba officinalis</i> L.	dried root
627.	<i>Sanguisorba officinalis</i> L. var. <i>longifolia</i> (Bert.) Yu et Li	dried root
628.	<i>Santalum album</i> L.	dried heart wood of the trunk
629.	<i>Saposhnikovia divaricata</i> (Turcz.) Schischk.	dried root
630.	<i>Sarcandra glabra</i> (Thunb.) Nakai	dried herb
631.	<i>Sarcandra glabra</i> (Thunb.) Nakai	extract
632.	<i>Sargassum fusiforme</i> (Harv.) Setch.	dried alga
633.	<i>Sargassum pallidum</i> (Turn.) C. Ag.	dried alga
634.	<i>Sargentodoxa cuneata</i> (Oliv.) Rehd. et Wils.	dried lianoid stem
635.	<i>Sauropus spatulifolius</i> Beille	dried leaf
636.	<i>Saururus chinensis</i> (Lour.) Baill.	dried aerial part
637.	<i>Saussurea involucrate</i> (Kar. et Kir.) Sch. Bip.	dried aerial part

	Botanical Name	Traded form
638.	<i>Schisandra chinensis</i> (Turcz.) Baill.	dried ripe fruit
639.	<i>Schisandra sphenanthera</i> Rehd. et Wils.	dried ripe fruit
640.	<i>Schizonepeta tenuifolia</i> Briq.	carbonized aerial part
641.	<i>Schizonepeta tenuifolia</i> Briq.	dried aerial part
642.	<i>Schizostachyum chinense</i> Rendie	dried masses of the secretion
643.	<i>Scrophularia ningpoensis</i> Hemsl.	dried root
644.	<i>Scutellaria baicalensis</i> Georgi	dried root
645.	<i>Scutellaria baicalensis</i> Georgi	extract
646.	<i>Scutellaria barbata</i> D. Don	dried herb
647.	<i>Sedum sarmentosum</i> Bunge	dried herb
648.	<i>Selaginella pulvinata</i> (Hook. et Grev.) Maxim.	dried herb
649.	<i>Selaginella tamariscina</i> (Beauv.) Spring	dried herb
650.	<i>Semiaquilegia adoxoides</i> (DC.) Makino	dried root tuber
651.	<i>Senecio scandenes</i> Buch.-Ham.	dried aerial part
652.	<i>Sesamum indicum</i> L.	dried ripe seed
653.	<i>Sesamum indicum</i> L.	carbonized fruit-spoke
654.	<i>Sesamum indicum</i> L.	dried fruit-spike
655.	<i>Sesamum indicum</i> L.	fatty oil
656.	<i>Setaria italica</i> (L.) Beauv.	processed ripe fruit
657.	<i>Siegesbeckia glabrescens</i> Makino.	dried aerial part
658.	<i>Siegesbeckia orientalis</i> L.	dried aerial part
659.	<i>Siegesbeckia pubescens</i> Makino	dried aerial part
660.	<i>Silybum marianum</i> (L.) Gaertn.	dried ripe fruit
661.	<i>Sinapis alba</i> L.	ripe seed
662.	<i>Sinocalamus beecheyanus</i> (Munro) McClure var. <i>pubescens</i> P. F. Li	dried middle shavings of the stems
663.	<i>Sinomenium acutum</i> (Thunb.) Rehd. et Wils	dried lianoid stem
664.	<i>Sinomenium acutum</i> (Thunb.) Rehd. et Wils. var. <i>cinereum</i> Rehd. et Wils.	dried lianoid stem
665.	<i>Siphonostegia chinensis</i> Benth.	dried herb
666.	<i>Siractia grosvenorii</i> (Swingle) C. Jeffrey ex A.M. Lu et Z. Y. Zhang	dried fruit
667.	<i>Smilax china</i> L.	dried rhizome
668.	<i>Smilax glabra</i> Roxb.	dried rhizome
669.	<i>Solidaga decurrens</i> Lour.	dried herb
670.	<i>Sophora flavescens</i> Ait.	dried root
671.	<i>Sophora japonica</i> L.	dried ripe fruit
672.	<i>Sophora japonica</i> L.	dried flower and flower bud
673.	<i>Sophora tonkinensis</i> Gagnep.	dried root and rhizome
674.	<i>Sparganium stoloniferum</i> Buch.-Ham.	dried rhizome
675.	<i>Spatholobus suberectus</i> Dunn	dried lianoid stem
676.	<i>Spirodela polyrrhiza</i> (L.) Schleid.	dried herb
677.	<i>Stachyurus chinensis</i> Franch.	dried stem pith
678.	<i>Stachyurus himalaicus</i> Hook. f. et Thoms.	dried stem pith
679.	<i>Stauntonia chinensis</i> DC.	young floriferous branch

	Botanical Name	Traded form
680.	<i>Stellaria dichotoma</i> L. var. <i>lanceolata</i> Bge.	dried root
681.	<i>Stemona japonica</i> (Bi.) Miq.	dried root tuber
682.	<i>Stemona sessilifolia</i> (Miq.) Miq.	dried root tuber
683.	<i>Stemona tuberosa</i> Lour.	dried root tuber
684.	<i>Stephania tetrandra</i> S. Moore	dried root
685.	<i>Sterculia lychnophora</i> Hance	dried ripe seed
686.	<i>Strychnos nux-vomica</i> L.	dried ripe seed
687.	<i>Strychnos nux-vomica</i> L.	powder
688.	<i>Styrax tonkinensis</i> (Pierre) Craib ex Hart.	dried resin
689.	<i>Swertia mileensis</i> T. N. Ho et W. L. Shih	dried herb
690.	<i>Swertia pseudochinensis</i> Hara	dried herb
691.	<i>Syringa reticulata</i> (Bl.) Hara var. <i>mandshurica</i> (Maxim.) Hara	dried stem bark or branch bark
692.	<i>Tamarix chinensis</i> Lour.	dried young twig and leaf
693.	<i>Taraxacum mongolicum</i> Hand.-Mazz.	dried herb
694.	<i>Taraxacum sinicum</i> Kitag.	dried herb
695.	<i>Taxillus chinensis</i> (DC.) Danser	dried branch, with leaf,
696.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	dried ripe fruit
697.	<i>Terminalia chebula</i> Retz.	dried ripe fruit
698.	<i>Terminalia chebula</i> Retz.	dried fruitlet
699.	<i>Terminalia chebula</i> Retz. var. <i>tomentella</i> Kurt.	dried ripe fruit
700.	<i>Tetrapanax papyriferus</i> (Hook.) K. Koch	dried stem pith
701.	<i>Thlaspi arvense</i> L.	dried aerial part
702.	<i>Tinospora capillipes</i> Gagnep.	dried root tuber
703.	<i>Tinospora sagittata</i> (Oliv.) Gagnep.	dried root tuber
704.	<i>Torreya grandis</i> Fort.	dried ripe seed
705.	<i>Toxicodendron vernicifluum</i> (Stokes) F. A. Barkl.	dried purified resin
706.	<i>Trachelospermum jasminoides</i> (Lindl.) Lem.	dried lianoid stem with leaf
707.	<i>Trachycarpus fortunei</i> (Hook. f.) H. Wendl.	dried petiole
708.	<i>Tribulus terrestris</i> L.	dried ripe fruit
709.	<i>Trichosanthes kirilowii</i> Maxim	dried ripe seed
710.	<i>Trichosanthes kirilowii</i> Maxim.	dried ripe fruit
711.	<i>Trichosanthes kirilowii</i> Maxim.	dried pericarp of the ripe fruit
712.	<i>Trichosanthes kirilowii</i> Maxim.	dried root
713.	<i>Trichosanthes kirilowii</i> Maxim.	stir-baked seed
714.	<i>Trichosanthes rosthornii</i> Harms	dried ripe fruit
715.	<i>Trichosanthes rosthornii</i> Harms	dried pericarp of the ripe fruit
716.	<i>Trichosanthes rosthornii</i> Harms	dried root
717.	<i>Trichosanthes rosthornii</i> Harms	dried ripe seed
718.	<i>Trichosanthes rosthornii</i> Harms	stir-baked seed
719.	<i>Trigonella foenum-graecum</i> L.	dried ripe seed
720.	<i>Turpinia arguta</i> Seem.	dried leaf
721.	<i>Tussilago farfara</i> L.	dried flower bud
722.	<i>Typha angustifolia</i> L.	dried pollen
723.	<i>Typha orientalis</i> Presl	dried pollen

	Botanical Name	Traded form
724.	<i>Typhonium giganteum</i> Engl.	dried tuber
725.	<i>Uncaria hirsuta</i> Havil.	dried hook-bearing branch
726.	<i>Uncaria macrophylla</i> Wall.	dried hook-bearing branch
727.	<i>Uncaria rhynchophylla</i> (Miq.) Jacks.	dried hook-bearing branch
728.	<i>Uncaria sessilifructus</i> Roxb.	dried hook-bearing branch
729.	<i>Uncaria sinensis</i> (Oliv.) Havil.	dried hook-bearing branch
730.	<i>Vaccaria segetalis</i> (Neck.) Garcke	dried ripe seed
731.	<i>Valeriana jatamansi</i> Jones	dried rhizome and root
732.	<i>Verbena officinalis</i> L.	dried aerial part
733.	<i>Vigna angularis</i> Ohwi et Ohashi	dried ripe seed
734.	<i>Vigna umbellata</i> Ohwi et Ohashi	dried ripe seed
735.	<i>Viola yedoensis</i> Makino	dried herb
736.	<i>Viscum colouratum</i> (Komar.) Nakai	dried stem and branch with leaf
737.	<i>Vitex negundo</i> L. var. <i>cannabifolia</i> (Sieb. et Zucc.) Hand.-Mazz.	fresh leaf
738.	<i>Vitex negundo</i> L. var. <i>cannabifolia</i> (Sieb. et Zucc.) Hand.-Mazz.	volatile oil
739.	<i>Vitex trifolia</i> L.	dried ripe fruit
740.	<i>Vitex trifolia</i> L. var. <i>simplicifolia</i> Cham.	dried ripe fruit
741.	<i>Vladimiria souliei</i> (Franch.) Ling	dried root
742.	<i>Vladimiria souliei</i> (Franch.) Ling var. <i>cinerea</i> Ling	dried root
743.	<i>Xanthium sibiricum</i> Patr.	dried ripe fruit with involucre
744.	<i>Zanthoxylum bungeanum</i> Maxim.	dried pericarp of the ripe fruit
745.	<i>Zanthoxylum nitidum</i> (Roxb.) DC.	dried root
746.	<i>Zanthoxylum schinifolium</i> Sieb. et Zucc.	dried pericarp of the ripe fruit
747.	<i>Zingiber officinale</i> (Willd.) Rose.	fresh rhizome
748.	<i>Zingiber officinale</i> (Willd.) Rose.	liquid extract
749.	<i>Zingiber officinale</i> Rose.	dried rhizome
750.	<i>Ziziphus jujuba</i> Mill	dried ripe fruit
751.	<i>Ziziphus jujuba</i> Mill. var. <i>spinosa</i> (Bunge) Hu ex H. F. Chou	dried ripe seed

Source: Author's elaboration based on survey of Pharmacopoeia of the People's Republic of China, English edition 2010

Annex IX List of Interview Partners

- China Quality Mark Certification Group Product Certification Col. Ltd (China)
- EcoCert (China, France)
- Fairtrade Foundation (UK)
- Fair Trade USA (USA)
- FairWild Foundation (Switzerland, UK)
- Gaia Herbs (USA)
- Herb Pharm LLC (USA)
- IMO-US (USA)
- Joshua Wickerham (China)
- New Chapter Inc. (USA)
- Nuherbs Co. (USA)
- Organic Herb Trading Company (UK)
- Pukka Herbs (UK)
- Pure Ground Ingredients (USA)
- RFI Ingredients (USA)
- Traditional Medicinals Inc. (USA)
- TRAFFIC office in China (China)

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