Should I grow wildflowers? information kit

Reprint – information current in 2000

REPRINT INFORMATION – PLEASE READ!

For updated information please call 13 25 23 or visit the website www.deedi.qld.gov.au

This publication has been reprinted as a digital book without any changes to the content published in 2000. We advise readers to take particular note of the areas most likely to be out-of-date and so requiring further research:

- Chemical recommendations—check with an agronomist or APVMA www.apvma.gov.au
- Financial information—costs and returns listed in this publication are out of date. Please contact an adviser or industry body to assist with identifying more current figures.
- Varieties—new varieties are likely to be available and some older varieties may no longer be recommended. Check with an agronomist, call the Business Information Centre on 13 25 23, visit our website www.deedi.qld.gov.au or contact the industry body.
- Contacts—many of the contact details may have changed and there could be several new contacts available. The industry organisation may be able to assist you to find the information or services you require.
- Organisation names—most government agencies referred to in this publication have had name changes. Contact the Business Information Centre on 13 25 23 or the industry organisation to find out the current name and contact details for these agencies.
- Additional information—many other sources of information are now available for each crop. Contact an agronomist, Business Information Centre on 13 25 23 or the industry organisation for other suggested reading.

Even with these limitations we believe this information kit provides important and valuable information for intending and existing growers.

This publication was last revised in 2000. The information is not current and the accuracy of the information cannot be guaranteed by the State of Queensland.

This information has been made available to assist users to identify issues involved in wildflower production. This information is not to be used or relied upon by users for any purpose which may expose the user or any other person to loss or damage. Users should conduct their own inquiries and rely on their own independent professional advice.

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Queensland Government

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Cultivated WILDFLOWERS *in Queensland*

This chapter describes the major cultivated Australian wildflowers and South African proteas that are grown in Queensland and other emergent and minor Australian species that are suitable. It includes detailed information on what wildflowers grow best, production characteristics, markets, and advantages and disadvantages. There is also a crop rating for the major traded species.

Contents

Major traded cultivated species

Corroboree flower, Snowballs

Type
Filler. *Stenanthemum scortechinii* can be fresh natural, fresh dip-dyed, preserved natural and preserved dyed.

Production
Harvest from June to October, with a peak in August and September.

Main markets
Main market is Japan. Still in the development phase on domestic and other export markets.

Main advantages
Relatively disease-free and easy to grow. Easy to handle and hard to damage. Light in weight.
Fresh flowers have a long vase life, sometimes greater than three weeks.

Prices are generally good for good quality product.

Apparently fewer disease problems than most other wildflowers.
Frost tolerant to -5 or even -9°C.

Main disadvantages
Prices can be erratic. Needs further market exposure.

Prone to phosphorus toxicity problems on high phosphorus soils.

Does not perform well in arid conditions such as western Queensland and the Dry Tropics.

Key requirements
Acid, well-drained, low phosphorus soil.
Needs good quality water as the crop has a low salt tolerance.

David Hockings

Stenanthemum scortechinii in cultivation

Peter Beal

Bunch of dyed Corroboree flower

Other
Cold room not necessary unless picking in advance of orders. Has a vase life exceeding three weeks.

Peter Beal

Fresh Corroboree flower stem

Eucalypt species

Type
Silver foliage—suitable as both fresh and preserved product. Flowering buds (filler) and flower—suitable as fresh product. Some species have potential for preservation.

Production
Silver foliage can be produced year-round with good management.

Soft tips associated with spring growth can be a problem. Controlled irrigation may assist, but unseasonal rains can contribute to soft tips.

Bud and flower species are usually available from January to September, with the bulk of production during autumn and winter. For example, *Eucalyptus tetragona*, January to April; *E. erythrocorys*, February to March; *E. lesouefii*, June to September; *E. forrestiana*, August to October.

Main markets
Fresh silver foliage is suited mainly to the domestic market as it is grown extensively overseas. Buds and flowers are exported, mainly to Japan. *E. tetragona* and *E. forrestiana* have been well accepted in Japan and have potential in other Asian countries as well as Europe and America.

The Ausbud cooperative has recently started marketing a range of eucalypt buds under common names to these countries.

Main advantages
Good vase life. Unique bud and flower formations.

Long harvest period because of a range of bud species.

AUSBUD

Eucalyptus forrestiana

AUSBUD

Eucalyptus kruseana

AUSBUD

Eucalyptus cineria

AUSBUD

Eucalyptus tetragona

Most foliages and some bud species are well suited to preserving and colouring.

Main disadvantages
Susceptible to many insect pests and fungal diseases, which need to be controlled by a management program. Also susceptible to a range of leaf blemish disorders, the causes of which are poorly understood.

Susceptibility to *Phytophthora* root rot can be a significant problem, but varies with species. Some forms with large buds and fruit are bulky and expensive to transport.

Key requirements
Silver foliage—grow in most locations that have well-drained soils. Bud and flower types—inland areas with low humidity and well-drained soils are preferable.

Other
Information on the productive life of the crop is limited, due to a short history of production and development.

Kangaroo paw

Type
Focal filler. *Anigozanthos* species and *Macropidia fuliginosa*.

Production
Main flowering period in Queensland is from June to December; peak is in October.

Main markets
Major market is Japan. European and other Asian markets are comparatively small.

Half the production is exported. The newer winter-flowering varieties sell well on the domestic market.

Main advantages
One of the top three commercially grown cut flowers in Australia. Considered a relatively easy wildflower to grow. Relatively pest-free.

Diverse range of cultivar types and colours.

Main disadvantages
May be prone to crown and root rots under humid or over-wet conditions.

Foliage diseases causing spotting or blackening can be a major problem in some genetic lines.

Key requirements
Need well-drained soils, such as sandy loams.

Other
Israel is a major producer and supplies to Europe. Slightly acidic soils are preferable, but not critical.

Fine hairs can cause skin and respiratory irritation in some people when harvesting and handling stems.

Ken Young

Anigozanthos 'Big Red' and 'Bush Dawn'

Ken Young

Anigozanthos 'Bush Haze'

Alenna McMah

Macropidia fuliginosa, Black kangaroo paw

Leucadendron species

Type
Wide range of species sold as feature flowers, filler flowers and foliage, depending on species. Male (coloured bracts) and female (cones and coloured bracts) flowers grow on separate plants.

Varieties include *Leucadendron* 'Safari Sunset', 'Silvan Red' and 'Red Gem' (reds) and 'Inca Gold' and 'Sundance' (yellow).

Production
Main variety is *Leucadendron* 'Safari Sunset', a red cone or bract, picked in Queensland from April to August, with a second crop in December.

Production in other states is from February to April (as red) and June and July (as tricolours).

Foliage ('greens') available year-round, with peaks in Queensland in June, July and November. Availability of 'flowers' (cones or terminal coloured bracts) depends on species. In Queensland, cones are generally available from late August to early December, with an October peak. This is similar in other states.

Main markets
Domestic and export to Japan.

Main advantages
Winter production.

Long vase life of 10 to 14 days. High yielding, with two crops a year in some species.

Diverse cultivars. Male and female plants, single and multi-flowered types; green, red and yellow floral foliage and different forms of terminal flower cones.

Lois Turnbull

Leucadendron 'Safari Sunset'

Apparently not susceptible to root-knot nematode.

Yields early. Some species may produce a small crop within 12 to 18 months of planting.

Main disadvantages
Generally highly susceptible to *Phytophthora* root rot, but this does vary with species.

Most species need cold weather to colour bracts.

Key requirements
Requires very well-drained acidic soils and adequate irrigation to produce an economically viable yield of saleable flowers.

Other
Very popular with florists; used in traditional and native flower arrangements.

FECA

Leucadendron discolor (male)

Cynthia Carson

Leucadendron in cultivation

Leucospermum species, Pincushion protea

Type
Feature flower. Main species is *Leucospermum cordifolium.*

Production
Pincushion proteas flower in Queensland from June to December, with a peak in September to October.

In the rest of Australia, the season is from August (New South Wales) to December with an October peak.

Main markets
Mainly domestic and some export.

Main advantages
High yielding per unit area. Long vase life of 20 to 24 days. Crops from the second year of planting.

Diverse cultivars. Colours range from pink, orange, red and yellow to multicolours in a single head. Cultivars include; 'Tango' (orange), 'Goldie' (yellow), 'Firewheel' (pink) and 'Scarlet Ribbon' (red).

Main disadvantages
Highly susceptible to *Phytophthora* root rot, root-knot nematode and fungal leaf diseases, for example *Dreschlera* blight, grey mould and *Elsinoe* scab.

Key requirements
Requires a very well-drained acidic soil and a good water supply to produce an economically viable yield of saleable flowers.

Other
A major traded flower in Australia. Its significance in Queensland is diminished by disease problems.

Doreen Child

Leucospermum 'Scarlet Ribbon'

Cynthia Carson

Leucospermum cordifolium

More drought resistant than *Protea* and *Leucadendron*.

Protea species

Type
Excellent feature flowers. Examples include *Protea* cv. 'Pink Ice', *Protea cynaroides* (King Protea).

Production
Protea cv. 'Pink Ice' (a clonal variety) is harvested in Queensland from November to April, with peak production in February and March. Production in other states is predominantly from February to August.

Protea cynaroides (King Protea). Pink, white and red varieties and miniature forms are available with various flowering times. Many plants are still derived from seed.

Main flowering times. In Queensland, the season extends from April to October, with peaks in June, August and September. Production in other states is from September to January.

Main markets
Domestic and export, mainly to Japan.

Main advantages
The *Protea* genus has a wide range of species, so flowers are available year-round.

Flowers have a good vase life: 'Pink Ice', one to two weeks; King Protea, two weeks.

'Pink Ice' is high yielding. King Protea has a high price per stem, and light volumes in the market help to sustain demand.

Main disadvantages
Usually takes two to three years from planting to first crop.

Susceptible to *Phytophthora* root rot and root-knot nematode diseases, as well as a range of foliar fungal diseases (for example anthracnose caused by *Colletotrichum*).

'Pink Ice' is often oversupplied in the market in March and April.

King Protea requires cool, high humidity conditions year-round. The correct climatic niche is required for the plant to produce sufficient stems for an economically viable yield.

Larger leafed forms are subject to sunburn and flower abortion.

Key requirements
Requires well-drained acidic soils and adequate irrigation to produce an economically viable yield of saleable flowers.

FECA

Protea cynaroides or King Protea

FECA

Protea cv. 'Pink Ice'

Rice flower

Type
Focal filler, filler. Species is *Ozothamnus diosmifolius*.

Production
Main flowering period in Queensland is from September to October (peak), with some early varieties starting in August and late varieties extending into November.

Main markets
Australian domestic market is undeveloped. Prices have been lowered in many Australian markets by poor quality bush-picked material.

Long stemmed product sells well in Japan. Shorter stemmed product is suitable for both Japan and the USA.

Higher numbers of shorter stems can be packed into a box, giving a higher box price, however, processing costs are also higher.

Main advantages
High quality long stemmed product can achieve high prices in Japan.

Crop has the potential to be very high yielding and is frost tolerant.

Fresh product has a vase life of seven to ten days.

Very presentable dried product.

Main disadvantages
Susceptible to root and stem diseases, for example root-knot nematodes, wood rots and root rot (caused by *Phytophthora*). Death rates can be extremely high.

Susceptible to termites and longicorn borer damage in some areas.

Unsuited to western and northern Queensland and coastal locations with high clay, poorly drained soils and high seasonal rainfall.

DPI

Ozothamnus diosmifolius

Cynthia Carson

Rice flower in cultivation

Key requirements
Internally well-drained soils free of nematodes.

Other
Fine-leafed forms appear to do well in Queensland, however, trials are needed to determine the highest performing cultivars for a given locality.

Waxflower

Type
Filler. Various *Chamelaucium* spp.

Production
Flowers from winter to late spring (May to November) in Queensland. Main production period is August to September.

Main markets
Major overseas markets are Japan, USA and Europe. Waxflower is Australia's leading commercial wildflower.

Popular with Australian florists as a filler.

Main advantages
High productivity.

Good vase life of seven to ten days.

Numerous selections and/or cultivars are available, ensuring continuity of supply in the three main colours—white, pink and purple. Can be sold in bud.

Main disadvantages
Susceptible to frost.

Very susceptible to *Phytophthora* root rot in warm, high summer rainfall areas. Large numbers of plants often die in wetter, high humidity coastal areas of eastern Australia.

Cut flowers are sensitive to *Botrytis* spp. infection and ethylene, which can cause flower drop.

Key requirements
Prefers a very well-drained sandy soil.

Other
Growers are advised to use post-harvest anti-ethylene treatments as an insurance against flower drop.

Ken Young

Chamelaucium mixed colours

Ken Young

Chamelaucium 'Purple Pride'

Ken Young

Chamelaucium 'Earlybird'

Crosses of *Chamelaucium uncinatum* with *Verticordia plumosa* are likely to greatly expand the available colour range in the next 10 years.

Grafting technology is being refined, with potential to extend the range of scions able to be grown in Queensland and improving plant survival in marginal localities.

Crop rating—major species traded

Crops were assessed for their potential as commercial flower or foliage crops. The average crop rating was based on individual assessments by crop experts.

Average crop rating. Scale 1–10, 1 being very poor and 10 very good. The number of assessors used for each category is shown in brackets after the crop rating.

Example. A pest- and disease-free crop would rate a 10 for the characteristic 'pest and disease status'. The overall average assumes that all the assessment characteristics are evenly weighted.

	Corroboree flower, Snowballs	Eucalypt	Kangaroo paw	*Leucadendron*	*Leucospermum*	*Protea*	Rice flower	Waxflower
Ease of growing	7.0 (3)	7.0 (1)	8.2 (5)	5.0 (2)	4.5 (2)	7.0 (2)	6.6 (6)	7.2 (4)
Market acceptance	6.0 (3)	8.0.0 (1)	7.0 (5)	8.5 (2)	8.5 (2)	7.0 (2)	8.6 (6)	7.5 (4)
Pest and disease status	6.3 (3)	3.0 (2)	4.3 (6)	3.3 (3)	2.6 (3)	4.0 (3)	4.3 (7)	5.0 (5)
Postharvest understood and systems in place	6.6 (3)	7.0 (1)	8.8 (4)	6.5 (2)	6.5 (2)	5.0 (2)	5.6 (6)	9.0 (4)
Returns/profitability	6.3 (3)	6.0 (1)	6.8 (4)	7.0 (2)	9.0 (2)	6.0 (2)	7.1 (7)	4.6 (3)
Yields	7.0 (3)	7.0 (1)	8.6 (5)	8.0 (2)	9.0 (2)	6.5 (2)	7.5 (6)	7.5 (4)
Overall average	**6.5**	**6.3**	**7.3**	**6.4**	**6.7**	**5.9**	**6.6**	**6.8**

Emergent and minor traded species

A range of wildflower species is being tried in Queensland. The non-inclusion of a crop is not meant to imply a lack of suitability for all Queensland environments.

Acacia, Wattle or Mimosa

Type

Cut flower or foliage.

Acacia podalyriifolia (Mt Morgan wattle) is grown for flowers in hotter areas, *A. auriculiformis* in tropical areas, and both *A. baileyana* and *A. baileyana* subspecies *purpurea* (purple foliage) in cooler areas of southern Queensland.

Grey foliage forms are also grown at present.

Several species have potential and are being studied. They include *A. pravissima* 'Montrose', *A. boormanii* 'Clematis', *A. buxifolia*, *A. merinthophora*, and *A. acinacea* 'Darebin Creek'.

Production

Late winter to spring flowering.

Main markets

Limited domestic and export markets due to the absence of a strong marketing campaign,

University of Adelaide

Acacia acinacea

University of Adelaide

Acacia baileyana

University of Adelaide

Acacia baileyana subspecies *purpurea*

Cynthia Carson

Acacia merinthophora

Ken Young

Acacia merinthophora in flower

poor plant forms and competing seasonal flowers.

The Japanese grow mimosa (acacia) and also import it from Europe. A market window exists in Japan from September to December.

Buds and foliage attract lower prices than flowers.

Main advantages

Suitable for most positions and soils.

Temperate forms are resistant to frost.

Good stem lengths.

Quick growing.

Main disadvantages

Flowers have a relatively short vase life of up to a maximum of 10 days.

Requires specialised postharvest handling (pulsing). Without treatment the vase life can be as short as a couple of days.

Needs to be cut back annually.

Leafminer is a major problem in Mt Morgan wattle.

The odour of some mimosa can be a problem for Japanese consumers. Older Australians associate it with mourning.

Key requirements

Keep well watered and fertilised. Prune to control size and flowering.

Other

First harvest is from three-year-old trees with peak production at six years.

Main pests are leaf-eating beetles and borers, gall-making insects and scale insects.

Limited development in Australia to date. Mimosa is an established product in Europe and is grown as a grafted crop in southern France and Italy. European-bred cut flower scions are not available in Australia; all Australian production is from seed.

Baeckea

Type
Filler flowers (*Baeckea behrii*) and floral–foliar fillers (*B. virgata, B. linifolia* and *B. densifolia*), sometimes foliage (*B. crenatifolia*).

Production
Late spring and summer.

Main markets
Domestic for foliage and floral–foliar fillers.

Floral filler *Baeckea behrii* has the potential to fill a gap in the international market in December, when prices are high. *B. behrii* can be used to extend the availability of Australian waxflower-like product from November to December, supplying Asia and the USA.

Main advantages
Summer flowering, when floral filler is in short supply.

Some forms of *Baeckea* will grow in heavier soils. *B. behrii* will tolerate both frosts and arid conditions.

Some clones have a reasonable vase life of 7 to 16 days.

Main disadvantages
B. virgata, B. linifolia, B. densifolia and some forms of *B. behrii* have a very short vase life and are subject to petal drop.

Some forms of *B. behrii* are susceptible to *Phytophthora*.

Key requirements
Well-drained or hilled site is preferred.

Other
Needs performance testing under Queensland conditions.

Ken Young

Baeckea behrii in cultivation

Tony Slater

Baeckea behrii

Banksia—East coast
selected longer stemmed variants only

Type
Feature flower, as well as buds. Also sold as a dried flower. Seed pods can be used in dried arrangements.

Cultivars include *Banksia dentata* (pinky grey), *B. ericifolia* (bright orange), *B. integrifolia* (mostly cream), *B. oblongifolia*, *B. plagiocarpa* (silver grey), *B. robur* (green—immature), *B. spinulosa* (yellow and orange).

Production
Wide range of species, with autumn and spring flowering peaks.

Main markets
Domestic, with export potential for product with sufficient stem length.

Main advantages
Long vase life of 10 to 14 days.

Much less prone to root rot diseases than Western Australian banksias. Can tolerate high humidity in summer rainfall areas.

Tolerant of clay soils.

Main disadvantages
Not all flowers are suitable for use in vases. Some varieties have terminal flowers, but others have a large percentage of axillary flowers and bent or short stems.

Fairly bulky; heavy to pack and freight.

Difficult to propagate vegetatively—seedlings are very variable.

Key requirements
Moderately well-drained acid soil, irrigation during very dry periods.

Other
Well-recognised 'Aussie' flower, popular in tourist resorts.

Few cultivated plants, mostly bush-picked.

The selection of stable variants suitable for cut flower production is critical.

Paul Dalley

Banksia plagiocarpa var. 'Hinchinbrook'

Judy Moffatt

Banksia integrifolia

Cassinia and *Ozothamnus* species complementary to rice flower

Type
Filler and focal filler.

Unexploited and under-exploited species and forms include *Cassinia aureonitans*, *C. laevis*, *C. adunca* and *Ozothamnus diotophyllus*.

Production
Spring and summer depending on species.

Main markets
Limited domestic market, export potential into Asia (particularly Japan) and the USA.

Main advantages
Provides breeding material with potential for commercialisation as cut flowers to extend the flowering season and colour range of rice-flower-like product from spring through summer.

Colours include cream, white, pink, yellow and gold.

Main disadvantages
Poorly commercialised to date.

Plant survival varies within and between species; plants may die from fungal root and crown diseases and root-knot nematode infestation.

Flowering can be sparse in unsuitable locations and the triggers for flowering are not well understood.

Key requirements
Well-drained soil.

Good supply of water.

Nematode-free site needed for many species.

Other
Further commercial development is needed to evaluate the prospects for growing and marketing.

FECA

Cassinia aureonitans, close-up

Peter Beal

Peter Beal

Cassinia aureonitans

Christmas bush (Festival bush)

Type
Focal filler, filler and foliage. Species is *Ceratopetalum gummiferum*.

Production
Mid-October to mid-December in south-east Queensland. Later production comes from cooler areas in New South Wales. New varieties can be expected to extend cropping.

Main markets
Strong domestic market just before Christmas, but prices far lower than for export. Japan is a major market, also good potential in the USA and Europe. Export market demands mostly red cultivars.

Main advantages
Queensland production season corresponds to the strong demand periods of Thanksgiving (the fourth Thursday in November) in the USA, Christmas (25 December) and the Japanese New Year (1 January). Prices are high in Japan for quality stems and medium term prospects look good. The USA, a lower priced market has best prices at Thanksgiving.

Vigorous growth, with first harvest two years after planting. Expectation of continuing high yields—the crop has only recently been established in Queensland. Medium maintenance during crop growth.

Product can be cold stored for six weeks. Vase life of one to two weeks. Tolerant of phosphorus within the normal soil range (but sensitive to very high levels).

Main disadvantages
Strict climatic requirements suited to cooler coastal districts; intolerant of hot dry conditions and severe frosts. Requires protection from hot dry winds, which can cause total crop loss. The harvest period is shorter in warmer districts.

In poorly drained soil, susceptible to root disease caused by *Phytophthora*.

Susceptible to some insect pests (for example Psyllids) and certain fungal diseases, which can cause major disfigurement or damage to plants if not controlled.

Very labour intensive during the harvest period. Requires skilled harvesting and handling. Poor 'flower' set and postharvest 'flower' drop can be a problem.

Key requirements
Good internal soil drainage. Planting on mounds is strongly recommended. Ample supply of good quality water.

Protection from hot dry winds. A mild, cool climate is best.

Use clones (never seedlings) selected for cut flower production.

Other
'Flowers' are actually mature fruits and coloured sepals. Postharvest cooling and dipping is essential for export.

Strict climatic requirements are likely to restrict the number of production localities in Australia and overseas. The low latitude limits of the crop are still being defined.

Brian Mills

Christmas bush in cultivation

Peter Beal

Ceratopetalum gummiferum 'Albery's Red'

Everlasting daisies

Type
Focal filler. *Bracteantha bracteata* (Syn. *Helichrysum bracteatum)*–strawflower, and *Rhodanthe chlorocephala* subspecies *rosea* (Syn. *Helipterum roseum)* and others.

Production
Flowering spring to autumn or year-round depending on variety.

Main markets
Sold as a fresh product, or as wired dried flower heads on the domestic market.

Some potential for fresh export, however, not internationally competitive in the dried market.

Main advantages
Relatively low start up costs from seed. High yielding with a quick financial return.

Yellow, pink, white, orange or red flower heads.

New perennial (tissue-culture) forms of *B. bracteata* flower continuously for most of the year, mature evenly and are frost tolerant.

Main disadvantages
Everlasting daisies are traditionally a low value product. Labour costs are high for harvesting and bunching varieties with small flower heads and for wiring dried flower heads.

Annual forms of *B. bracteata* require long days to initiate flowering, mature unevenly, and do not cope with frost.

R. chlorocephala subspecies *rosea* is highly susceptible to the fungus *Sclerotium rolfsii* in wet coastal areas of Queensland.

All forms are attacked by a range of pests and are susceptible to disease caused by *Fusarium oxysporum*.

Key requirements
Well-drained soils, frequent irrigation.

Other
B. bracteata and *R. chlorocephala* subspecies *rosea* are established flower crops worldwide.

Other everlasting daisies with unexplored potential in temperate areas of Queensland are *Pycnosorus globosus* Syn. *Craspedia globosa* (Drumsticks) and *Pycnosorus chrysanthes* Syn. *Craspedia chrysantha* (Golden Billy-buttons, Yellow Drumsticks). They will tolerate clay soil and frost, and can be sold fresh or dried.

David Hockings

Bracteantha bracteata

Cynthia Carson

Dried *Rhodanthe chlorocephala* subspecies *rosea*

Flannel flower

Type
Focal filler. Species is *Actinotus helianthi*.

Production
Can flower from August or September to June. Best flowers are picked in spring.

Main markets
Domestic and export to Japan, with good prospects for future growth in both markets.

Main advantages
Can tolerate hot, dry climates as well as coastal conditions. Provides a relatively quick yield, producing within 8 to 12 months from planting.

Highly productive per unit area by the second year.

Main disadvantages
Prone to root rot or wilt diseases associated with *Fusarium*, *Pythium* or *Phytophthora* spp.

Long stemmed varieties flower sparsely.

Short, two-year productive life. Seedling lines are of variable quality.

Key requirements
Grows in acidic, sandy soil.

Other
Mulch is advantageous.

Plant material is not available in quantity; very few suppliers of plant material exist.

Fine hairs can cause skin and respiratory irritation in some people when handling stems.

Alenna McMah

Actinotus helianthi

Grevillea

Type

Feature flower and foliage. Subtropical *Grevillea banksii* group (including related species and hybrids) have attractive, conspicuous terminal inflorescences.

Foliage examples include *G. baileyana*, *G. hookeriana*, G. 'Honey Wonder', and G. 'Orange Marmalade'.

Production

Flowering seasons mainly extend over winter and spring. Foliage is available all year.

Main markets

Small, mainly domestic. There is export potential, however research is needed to develop appropriate handling methods and to extend vase life.

Foliage is a low value component of the domestic market.

Main advantages

Wide range of flower colours—reds, pinks, oranges, yellows and creams. Selected forms or species have a vase life of at least seven days.

Foliage is readily available in a wide range of forms and colours.

Main disadvantages

Flowers

Information on productivity in cultivation is very limited. Although there are high numbers of flowers per bush, growing systems to

Peter Beal

Display of subtropical *Grevillea*

Peter Beal

Foliage of *Grevillea hookeriana*

maximise the number of stems that can be harvested need to be developed.

In addition, optimal commercial postharvest handling and packaging protocols are not available.

Foliage
Low price per stem, strong competition from many other fillers.

General
Many forms and species are susceptible to root rot disease associated with *Phytophthora*, though resistant and tolerant *Grevillea* rootstocks are available.

Damage to flowers from birds and to foliage from sooty mould may be significant in commercial plantings.

Some individuals suffer an allergic rash on contact with some species of *Grevillea*.

Key requirements
Well-drained soils. Access to an ample supply of irrigation water. Use a low phosphorus fertiliser. Protection against birds may be necessary in some areas.

Other
Species and forms with tropical and subtropical origins are widely distributed throughout Queensland and are expected to grow well in a wide range of soils and climates in coastal and inland parts of the state.

PETER BEAL

Grevillea 'Pink Surprise'

PETER BEAL

Grevillea in cultivation

Leptospermum (Tea-tree)

Type
Focal filler. Several species, main one is *Leptospermum scoparium* and its cultivars, also *L. rotundifolium*.

Filler in bud. *L. polygalifolium* subspecies *tropicum* 'Cardwell' (Syn. *L. flavescens* 'Cardwell').

Production
Spring.

Main markets
Domestic. Minor export to date, as well as potential in Asia and USA.

Export markets will not accept *L. scoparium* cultivars from Australia due to their inferior vase life.

Main advantages
Behaves like waxflower, without the susceptibility to root rot caused by *Phytophthora cinnamomi*.

USA market likes the large individual flowers, the high flower numbers per stem, and the even maturity and presentation of flowers right to the tip of the stem. Colours include red, pink, purplish-pink, cream and white.

Fast growing and widely adapted. May be harvested in the second year from planting. Can grow in heavy soils depending on the cultivar.

Main disadvantages
Temperate species have a cold requirement to initiate flowering. Many parts of Queensland, particularly the far north, are not cold enough.

Vase life is limited by petal drop, particularly in Asian markets. *L. scoparium* hybrids have a poor vase life (three to seven days), suffer from problems with the fungus *Botrytis*, and are sensitive to ethylene.

Leptospermum is prone to scale (and associated sooty mould) and webbing caterpillars, which require regular spraying.

Leptospermum can be tall and sparsely flowered in Queensland.

Crop must be harvested in a two-week period.

Tony Slater

Leptospermum rotundifolium

Tony Slater

Leptospermum rotundifolium—close-up

Key requirements
Requires regular watering. Suitable for a wide range of soil types.

Other
Substantial room exists for cultivar improvement in the genus. Two to three week vase life can be achieved.

Produced in USA, where it is preferred to waxflower. Petal fall is minimised on USA-grown flowers with preharvest pest and disease control and postharvest treatments.

White flowers can be preserved with glycerine and dyed to a range of colours.

Melaleuca, Honey myrtle, Paper-bark

Type
Foliage and focal filler. *Melaleuca uncinata* 'Wattle Gold' is a focal filler, *M. sieberi* can be sold in flower.

M. bracteata 'Revolution Gold', *M. bracteata* 'Revolution Green', *M. sieberi*, *M. nesophila*, *M. hypericifolia*, *M. irbyana*, *M. armillaris*, *M. nodosa*, *M. minutifolia*, *M. tamarascina* and *M. diosmifolia* (Syn. *M. erubescens*) are used for foliage.

Production
Foliage year-round. 'Wattle Gold' flowers in late August and early September.

Main markets
Low-priced foliage on the domestic market. Production and export costs coupled with low returns limit export potential for cultivated foliage.

Main advantages
Widely adapted and tolerant of moist heavy soils. Can also withstand drought. Rapid growing. Not prone to root rot disease.

Main disadvantages
Product is low priced except for 'Wattle Gold' which is slow growing, has a very short harvest period and may only flower every second year. Borers and leaf webbing caterpillars can be a problem.

Some species will drop leaves under highly humid conditions or prolonged contact with moisture.

Peter Beal

Melaleuca bracteata cv. 'Revolution Green'

Peter Beal

Melaleuca nesophila

Ken Young

Melaleuca uncinata cv. 'Wattle Gold'

Key requirements
Keep well watered for early establishment and good growth. Generally grow well in acid soils.

Other
Growers are often unaware of the botanical names of species. Selected forms such as 'Wattle Gold', are grown from cuttings but many others are grown from seed.

Normally harvested as a windbreak species, not a main crop.

Ptilotus

Type
Focal filler and filler. Includes *Ptilotus exaltatus*, *P. obovatus* and *P. macrocephalus*.

Production
Ptilotus exaltatus will flower all year, independent of daylength and to a reasonable extent cold; best flowers are in spring. *P. obovatus* has two to three flushes a year. *P. macrocephalus* has a once-over harvest period in late spring.

Main markets
Market is not yet fully developed. The Japanese market requires a strongly defined pink/purple in *P. exaltatus*. The Sydney market will accept 200 to 500 g five- and ten-stem bunches.

Alenna McMah

Ptilotus exaltatus

Main advantages
P. exaltatus may flower three months from planting and thereafter continuously initiate flowers until death. It has a six- to eight-week peak harvest period.

As long as the variety is performing, a return on investment can be achieved at first harvest.

Flowers do not have to be fully mature at harvest if pulsed overnight with Chrysal™ OVB.

Can return 18 bunches per plant @ $2.00 per bunch over a six-month life span.

Main disadvantages
Little plant material is available. Tissue-cultured plant material is expensive—$1.20 to $1.85 for an annual species.

Labour intensive, with plants needing to be re-established each year.

Flower stems are bulky to handle with fine irritant hairs and a tendency of the flower spikes to inter-lock.

Fungal foliar diseases (for example rust and *Botrytis*) have been reported, with leaves quickly deteriorating after rain. Also susceptible to wind damage.

Key requirements
Grows well in full sun in hot dry climates west of the Great Dividing Range. Flowers during dry periods.

May need support with carnation mesh to reduce the number of bent stems and split plants.

Two or three 80 m rows are needed for a marketable volume. At least 0.25 ha is needed for continuity of supply.

Alenna McMah

Ptilotus exaltatus, close-up

Other
Pre-production testing is still being conducted on forms for Plant Breeders Rights. Leaf quality in seedling forms can be poor.

Do not use as a perennial.

Scholtzia

Type
Filler flower. Includes *Scholtzia involucrata*, *S. oligandra* and *S. capitata*.

Production
Depends on the varieties grown. *Scholtzia involucrata* flowers in spring at Crows Nest in the northern Darling Downs and in late spring in central Queensland. *S. oligandra* and *S. capitata* flower in winter at Stanthorpe in Queensland's Granite Belt. *S. capitata* flowers in late summer and early autumn at Crows Nest in Queensland.

Main markets
Japan and USA. Minor domestic market.

Main advantages
Grows well in a hot, dry climate with little summer rain.

Prolific and easy to grow in some districts.

Flower colour, a bright pastel pink, is in demand in Japan and the USA. Individual flowers are bigger than those of *Thryptomene*, and it has an equally large number of flowers.

S. involucrata has a good vase life of at least seven days. Its foliage is attractive and can be sold off-season.

Flowers in second year from planting.

Main disadvantages
Labour intensive to pick and process, as large numbers of stems are needed to make a bunch.

Poor vigour in some districts of Queensland. The extent of flower cover on stems can vary with the season. Plants can sometimes be tall and sparsely flowered. Flower drop can be a problem.

Susceptible to root rot disease, caused by *Phytophthora*.

Key requirements
Internally well drained soil.

An ample supply of good quality irrigation water.

FECA

Scholtzia involucrata

Alenna McMah

Scholtzia involucrata in cultivation