

# Garlic Harvesting & Curing



## Crop Sourcing: Project Garlic

 Slow Food  
SAINT LOUIS, MO

*“Garlic is not all the same. We think of garlic as all the same because we are primarily exposed to only one type of garlic in our grocery stores. If Red Delicious were the only apple we ever encountered, we would think that all apples were the same as well. What a surprise it would be, then, if we were to suddenly encounter a Granny Smith.”*

- Ted Jordan Meredith, The Complete Book of Garlic

# Crop Sourcing: Project Garlic

In 2014, Slow Food St. Louis distributed 200 lbs. of garlic, including 220 rare cultivars to nearly 100 gardeners, farmers, schools and organizations to plant as part of our biodiversity program!

In 2015, we will have almost 300 lbs. of new garlic cultivars in addition to garlic already being grown, some of which will also go to new growers (we asked each grower to give us back the amount we gave them last year).

# History of Garlic

Garlic is known to have been used for at least 7000 years, and likely longer. Garlic came from South Central Asia (the “Garlic Crescent”) and has a long history of use as a food, medicine and a preservative. It is mentioned in the Bible, the Qur'an and Sanskrit writings from 5000 years ago.

Garlic cultivars were concentrated in Europe until the end of the Cold War, which opened up the “Garlic Crescent” for research and discovery of new cultivars.

# Garlic Production

Worldwide – 2 ½ million acres in production, with over 24 million tons annual yield

China produces 81% of the world's garlic. India is second with 5%, and the US comes in 9<sup>th</sup> with 0.8%.

80% of US garlic is grown in California. 60% of that is dehydrated and used in processed foods.

Acres in production worldwide doubled from 1970-2000.

# Garlic – *Allium Sativum*

Garlic is a bulb plant that is a member of the *Allium* family, which also includes onions, leeks, chives and lilies.

Garlic has a short dormancy period compared to other plants and is generally planted in the fall. It is hardy to USDA Zone 8.

Garlic produces allicin, which accounts for much of its therapeutic benefits. But allicin is not present until garlic is crushed or chopped. Cooking destroys allicin, so raw is best for such uses.

# Types of Garlic

There are two main subgroups of garlic:

Hardnecks – *Allium sativum* var. *ophioscorodon*

Softnecks – *Allium sativum* var. *sativum*

Recent genetic studies indicate that there is only one true species of garlic – *Allium sativum*

# Hardnecks

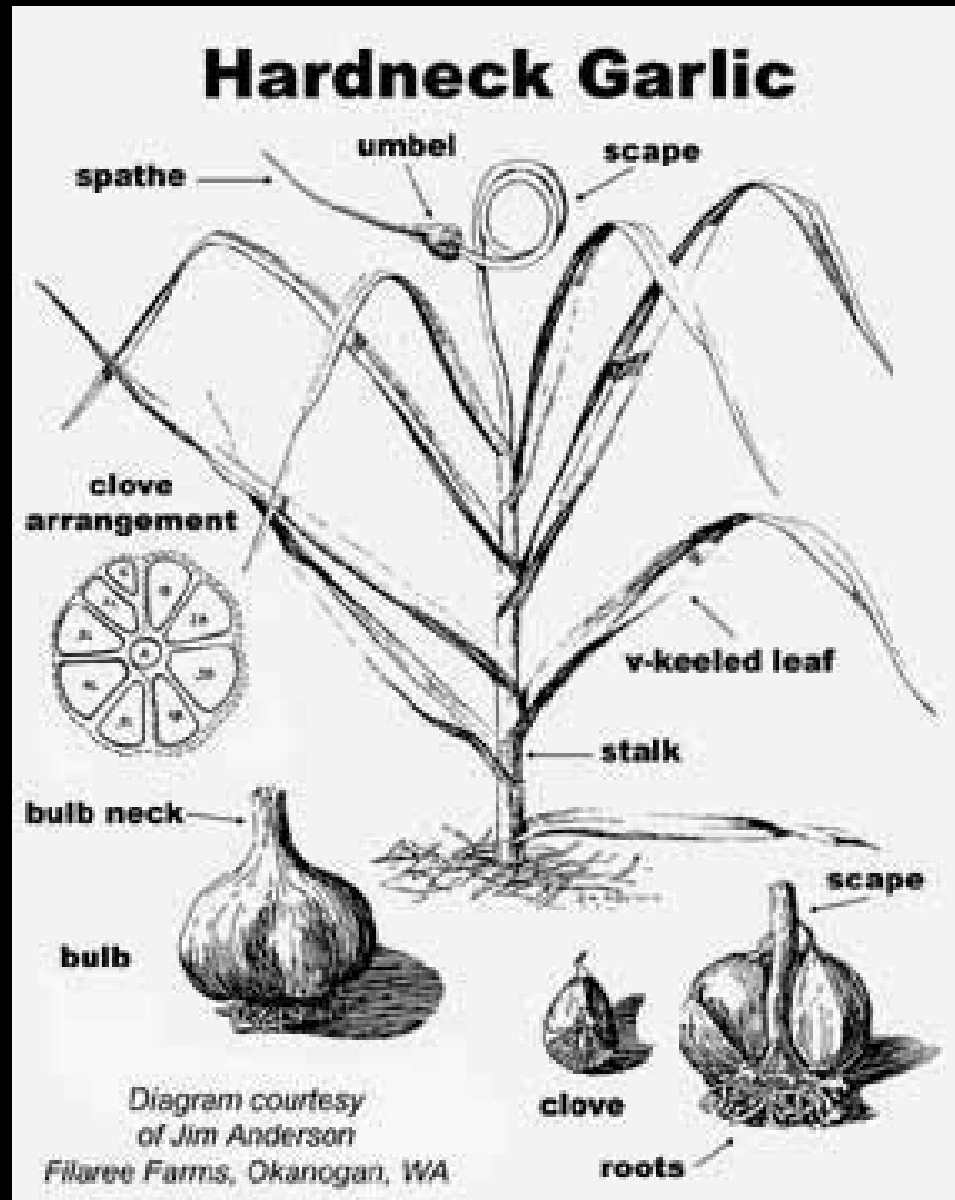
The less domesticated varieties, as they are not as suited to large-scale production. Thought to have been used on a garden scale through most of history. First specific mention of its pigtail-like scapes only appeared 500 years ago.

Generally have smaller bulbs, better flavor and shorter storage time.

Scapes are usually removed to encourage larger bulb sizes. Eat them, they are great!



# Hardnecks



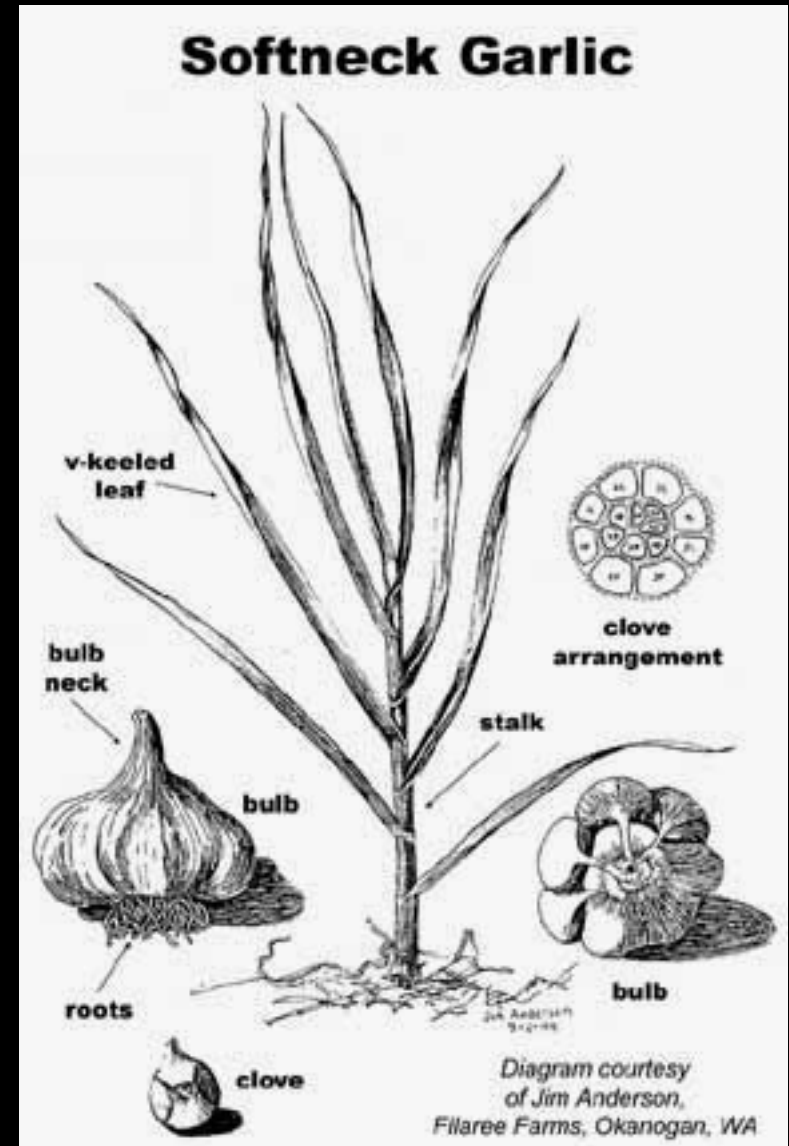
# Softnecks

Domesticated for thousands of years.

Do not generally produce flowering structures (ie, they have a soft neck).

More productive per acre and store longer, but have inferior flavor.

These are the braidable garlicks.



# Garlic Life Cycle

Oct-Nov – Plant garlic cloves 3-5 weeks before ground freezes. Garlic can be planted up until March, but bulb sizes will be smaller.

Nov-Dec – Some plant growth to establish roots before winter sets in. Mulch to protect the leaves from cold and wind damage.

Early spring – Keep them weeded, as alliums do not compete well.

Late May-Early June – Harvest garlic scapes.

## Garlic Life Cycle – cont.

June-July – Harvest garlic as it matures. Different cultivars should be harvested based on how many of the leaves are brown or green.

July-August – Cure garlic for storage and select bulbs for replanting.

Oct-Nov – Start process over again by planting your harvested cloves.

# Garlic Growing

Garlic is primarily grown asexually by replanting the cloves. Garlic can also be grown from bulbils and true seed (takes multiple seasons to get multi-clove bulbs), though not from all cultivars.

Garlic adapts to local growing conditions over the course of several years, and bulb size will increase.

Garlic likes moist soil until just before harvest, when the ground should be allowed to dry.

Leaves, pseudostem, roots all die on fully mature garlic. The cloves carry on the survival of the plant, as they contain nascent elements of a mature bulb.

# When To Harvest

Can vary greatly based on variety. Softnecks, for instance, are more tolerant of being left in the ground longer.

Generally, garlic should be harvested when 60% of the leaves are still green. If marketability is not a factor, harvest when 25% of leaves are green. This will give garlic a more mature flavor, but it also decreases storage time.

# Harvesting

Do NOT pull garlic out of the ground by the necks.

Use a pitchfork or other tool to loosen the soil around your garlic, making sure not to get too close to any of your bulbs.

After all your soil is loosened, go back through and pull the bulbs out and gather them in a container with stems/leaves attached.

Be gentle to avoid bruising the bulbs, and immediately shield from sun and heat.

# Curing Garlic

Bulbs can be left unwashed, just brush off dirt gently.

Hang in bunches with the bulbs downward in a cool, dry and shaded place.

Length of time for curing depends on humidity, temperature, air circulation, bulb size and other factors. Takes anywhere from 2 to 6 weeks.

Garlic should not be trimmed until leaves are completely brown. After trimming, remove or clean outermost bulb wrappers. Removal of too many bulb wrappers will negatively affect storage time.



# Curing Garlic



# Storing Garlic

Small to medium sized bulbs store best, so use larger bulbs first (or use them to plant in the fall).

Store above 50°F but not over 68°F, and with a relative humidity of 45-50%. A wine or root cellar would be ideal.

Store in a way that the bulbs get air circulation. Don't keep in paper bags or other non-breathable materials.

Storage life ends either when the cloves start to sprout or when they dry out.

# Hardneck Subgroups

Asiatic (hardneck/softneck\*)

Creole (hardneck/softneck)

Porcelain

Purple Striped – Includes further subcategories of  
Marbled Purple Stripe & Glazed Purple Stripe

Rocamboles

Turban (hardneck/softneck)

*\* Recent studies show genetics more closely resemble other hardnecks*

# Asiatic Garlic - Hardneck

Large bulbs with 6-9 cloves with short storage time (up to 5 months).

Scapes do not need to be removed to size up bulbs.

Mature very quickly, before Artichokes. Harvest as soon as the leaves begin to brown. Otherwise bulb wrappers may split open. Earliest maturing garlics.

# Asiatic Garlic - Hardneck

Crop Sourcing Cultivars:

*Asian Tempest (pictured)*

*Korean Hot*

*Mun Hung*

*Pyong Yang*

*Russian Inferno*

*Singing Falls*

*Udabmo*



# Creole Garlic - Hardneck

Great raw flavor, stores well (6-9 months) but has smaller bulbs with 8-12 cloves arranged symmetrically around the neck.

Beautiful bulbs with colorful cloves.

Tolerant of drought and good for warmer areas.

Weakly bolting hardneck that often produces softnecks.



# Creole Garlic - Hardneck

## Crop Sourcing Cultivars:

*Ajo Rojo (pictured)*

*Burgundy*

*Creole Red*

*Donostia Red*

*Guatemalen*

*Moroccan Creole*



# Porcelain Garlic - Hardneck

Rich, spicy flavor, stores very well (6-9 months) and has large bulbs with 4-6 cloves arranged symmetrically around the neck.

Very hardy and one of the last garlics to mature.

Parchment like bulb wrappers.

Very high in allicin.



# Porcelain Garlic - Hardneck

Crop Sourcing Cultivars: *Music*  
*Armenian* *Northern White*  
*Chatkal* *Polish Hardneck*  
*Cichisdzhvari* *Polish Jenn*  
*German Extra Hardy* **Romanian Red**  
*German Porlane* *Susan Marie*  
*German White* *Wild Buff*  
*Kyjev* *Zahrada*  
*Leningrad* *Zemo*

# Purple Striped Garlic - Hardneck

Very tasty (especially when baked), stores well (4-6 months) and has 8-10 good sized cloves.

Vividly striped and colored.

Genetic analysis show these are likely the original line of garlic all other varieties derived from.

Garlics most likely to produce true seed.

# Purple Striped Garlic - Hardneck

Crop Sourcing Cultivars: *Pioneer*

*Aktyubinsk*

*Purple Tip*

*Alpert's Samarkand*

*R/AL/751*

*Andizanskij*

*Samarkand Purple*

*Bellarus*

*Shatili*

*Darcheli*

*Shvelisi*

*Didadzhara*

*Skuri*

*Novo Triotzk*

*Vilnius*

*PI 493105*

*Chesnok Red*

# Glazed Purple Stripe Garlic - Hardneck

Subcategory of Purple Striped Garlic

Good flavor, stores well (4-6 months) and has 6-10 good sized cloves.

Mature somewhat sooner than Purple Striped Garlics.

# Glazed Purple Stripe Garlic - Hardneck

## Crop Sourcing Cultivars:

*Blanak*

*Brown Tempest*

*Red Czar*

*Red Rezan (pictured)*

*Vekak*



# Marbled Purple Stripe Garlic - Hardneck

Subcategory of Purple Striped Garlic

Hotter taste and fewer cloves than Purple Striped Garlic. Can be mistaken for Rocamboles.

# Marbled Purple Stripe Garlic - Hardneck

## Crop Sourcing Cultivars:

*Allison's*

*Bai Pi Suan*

*Bogatyr*

*Brown Rose*

*Bzenc*

*Choparski*

*Dubna*

*Dubna Standard*

*Duganskij*

*Estonian Red*

*Garlic Seedling*

*Jovak*

*Khabar*

**Metechi \***

*Monshanskij*

*Northe #3*

*Pskem*

*Russian Giant*

*Siberian*

*Wonha*

*W6 24371\* (maybe)*

*W6 24414\* (maybe)*

# Rocamboles Garlic - Hardneck

Great taste (very popular with chefs), with 6-11 large cloves with short storage time (3-5 months).

Most widely known and grown of the hardneck subgroups.

Only garlic which has a scape that can grow in a double or triple loop.



# Rocamboles Garlic - Hardneck

## Crop Sourcing Cultivars:

|                            |                          |                                  |   |
|----------------------------|--------------------------|----------------------------------|---|
| <i>Achatami</i>            | <i>Davido</i>            | <i>Korean Red</i>                | <i>Special Idaho</i>                          |
| <i>Alexandria</i>          | <i>DDR</i>               | <i>L. K. Mann's C751</i>         | <i>Stanley Crawford New Mexico Rocamboles</i> |
| <i>Angell's</i>            | <i>Fisher's Knofel</i>   | <i>Mom's Oklahoma rocamboles</i> | <i>Summit Roja</i>                            |
| <i>Australian</i>          | <i>French Red</i>        | <i>Old Homestead</i>             | <i>Taos Rocamboles</i>                        |
| <i>Blue Italian</i>        | <i>German Brown</i>      | <i>PI 485592</i>                 | <i>Vic's</i>                                  |
| <i>Carpathian</i>          | <b><u>German Red</u></b> | <i>Pitarelli</i>                 | <i>Waddel</i>                                 |
| <b><u>Chamisal</u></b>     | <i>GSF-65</i>            | <i>Poodles</i>                   | <i>Webber Creek</i>                           |
| <i>Chrysalis Purple</i>    | <i>Himalayan</i>         | <i>Pride of Maine</i>            | <i>Youghiogheny</i>                           |
| <i>Chrysalis Rose</i>      | <i>Hokkaido-zairi</i>    | <i>Purple Italian</i>            | <i>Yugoslavian</i>                            |
| <i>Colorado Black</i>      | <i>Idaho special</i>     | <i>Purple Streak</i>             | <i>Purple*</i>                                |
| <i>Craskton</i>            | <i>Iowa</i>              | <i>Red Revel</i>                 | <i>Chimgan (Z 059)*</i>                       |
| <i>Creole Rocamboles</i>   | <i>Israeli</i>           | <i>Red Roman</i>                 |   |
| <i>Croatian Rocamboles</i> | <i>Jurjevich</i>         | <i>Roja Spanish</i>              |   |
| <i>Czech Landrace</i>      | <i>Killarney Red</i>     | <b><u>Spanish Roja*</u></b>      |   |

# Turban Garlic - Hardneck

Large bulbs with 8-12 cloves with short storage time (up to 5 months). Plants are smaller than other garlicks.

Scapes do not need to be removed to size up bulbs.

Mature very quickly, as they are closely related to Asiatic Garlic.

# Turban Garlic - Hardneck

Crop Sourcing Cultivars:

*Bangkok*

*Cheng Du*

*Chinese Pink*

*Mexican Purple*

*Thai Large Red*

*Xi'an (pictured)*

*Basque*



# Softneck Subgroups

## Artichoke

- Large bulbs with 12-18 cloves arranged in layers (like an artichoke)
- Early to mid-season maturity, stores 6-12 months
- Most commercial garlic is artichoke

## Silverskin

- Smaller bulbs with 8-24 cloves
- Late season maturity, stores 6-12 months
- May fall over before harvesting

# Artichoke Garlic - Softneck

## Crop Sourcing Cultivars:

|                                   |                              |                              |   |
|-----------------------------------|------------------------------|------------------------------|---|
| <i>Achalikachati</i>              | <i>California Early</i>      | <i>Large Italian Purple</i>  | <i>Sam Lacona</i>                       |
| <i>Ail de pays parne</i>          | <i>California Late</i>       | <i>Lewandoski</i>            | <i>Sarafini Red Italian</i>             |
| <i>Argentine</i>                  | <i>Chamiskuri</i>            | <i>Loiacono</i>              | <i>Sicilian Gold</i>                    |
| <i>Arguni White</i>               | <i>Chet's Italian Purple</i> | <i>Lorz Italian</i>          | <i>Siciliano</i>                        |
| <i>Ashworth</i>                   | <i>Chinese (Sativum)</i>     | <i>Lukak</i>                 | <i>Simoneti</i>                         |
| <i>Athens</i>                     | <i>Cichisugani</i>           | <i>Machasi</i>               | <i>Taia Pink</i>                        |
| <i>Azanta</i>                     | <i>Early Italian Purple</i>  | <i>Marble Horn</i>           | <i>TLC</i>                              |
| <i>Batuhi</i>                     | <i>Early Red Italian</i>     | <i>Mchadidzhvari</i>         | <i>Tochliavri</i>                       |
| <i>Blanco de heulma Zmaora #1</i> | <i>Espanola</i>              | <i>Mucdi</i>                 | <i>Transylvania (Drucker)</i>           |
| <i>Blanco de Huelma Zamora #2</i> | <b><u>Inchelum Red</u></b>   | <i>Nakuralesi</i>            | <i>Transylvanian</i>                    |
| <i>Broad Leaf Czech</i>           | <i>Italian Late</i>          | <i>New York White</i>        | <i>Turkish</i>                          |
| <i>Bulgaria</i>                   | <i>Jamey's</i>               | <i>Old Yellow</i>            | <i>Ukanapshavi</i>                      |
| <i>Bulgarian</i>                  | <i>Knemokachati</i>          | <i>P-VT</i>                  | <i>VF-25</i>                            |
| <i>Bulgarian (Drucker)</i>        | <i>Korean Mad Dog</i>        | <i>PI 540359 (aka P-VT?)</i> | <i>Walla Walla Early Italian Purple</i> |
| <i>Bulgarian Hanuan</i>           | <i>Kulbaki #2</i>            | <i>Polish White</i>          | <i>White Seedless</i>                   |
|                                   |                              | <i>Restaurant</i>            | <i>Zahorsky</i>                         |
|                                   |                              | <i>Ron's Single Center</i>   | <i>Zeda</i>                             |

# Silverskin Garlic - Softneck

## Crop Sourcing Cultivars:

*Bolivian*

*Mexican Red*

*Chilean Purple*

*Montana Rojo*

*Chilean Silver*

*Mother of Pearl*

*Florence Italian*

*Nootka Rose (pictured)*

*Greek Artichoke*

*PI 383819 (Pristinski)*

*Idaho*

*Silver Rose*

*Japo*

*St. Helen*

*Joe's Italian*

*Tipitilla*

*Luzern Silver*

*Wedam*

*Matthews*

*Western Rose*

