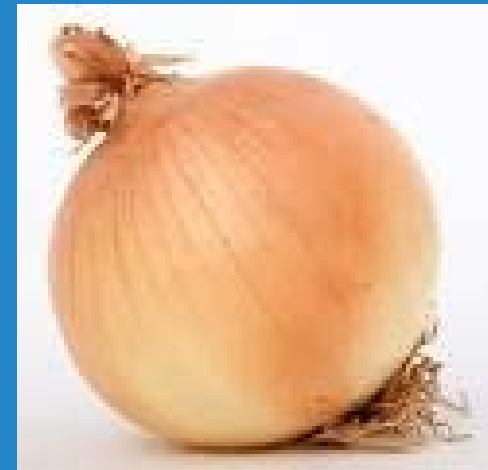


# Tahoe Fruit & Vegetable Workshop Series

## *Fall Planting – Onions, Garlic & Interesting Alliums*

Topics covered:

1. Project overview
2. Phenology
3. Anatomy
4. Planting and care
5. History and culinary aspects
6. Varieties being evaluated
6. Distribution of plant materials



# Phenology

**Phenology** looks at growth and development differences between plant varieties that are due to weather and climate.

Merriam-Webster on-line  
Dictionary

**Varietal Comparative Phenology** looks at growth and development differences between plant varieties that are due to weather and climate.

# Varietal Comparative Phenology

## The importance of VCP:

1. Method may be used in identifying early mid and late season varieties
2. Can be the basis of defining a new variety
3. Provides important information on plant development to growers
4. May have importance in IPM strategies
5. Important consideration for bringing produce to market

# Varietal Comparative Phenology

## VCP does not:

1. Look at disease resistance
2. Plant appearance
3. Plant or produce growth habits
4. Photoperiodism (the effects of length of daylight to organisms)\*
  - \* For most plants it is the amount of non daylight that affects plant development

# Culinary Alliums

Chives - *Allium schoenoprasum*

Scallions or Green onions - *Allium fistulosum*

Bulb Onions- *Allium cepa*

Shallots - *Allium oschaninii*

Leeks - *Allium ampeloprasum*

Garlic Chives - *Allium tuberosum*

Elephant Garlic - *Allium ampeloprasum*

Softneck Garlic - *Allium sativum ssp. sativum*

Hardneck Garlic - *Allium sativum ssp. ophioscorodon*



[www.heirloomorganics.com](http://www.heirloomorganics.com)



[www.friedas.com](http://www.friedas.com)



# Terroir – Alliums Grow Into Their Place

***Terroir*** is the set of all environmental factors that affect a crop's overall qualities, when the crop is grown in a specific habitat. Collectively, these environmental characteristics are said to have a character; *terroir* refers also to this character.

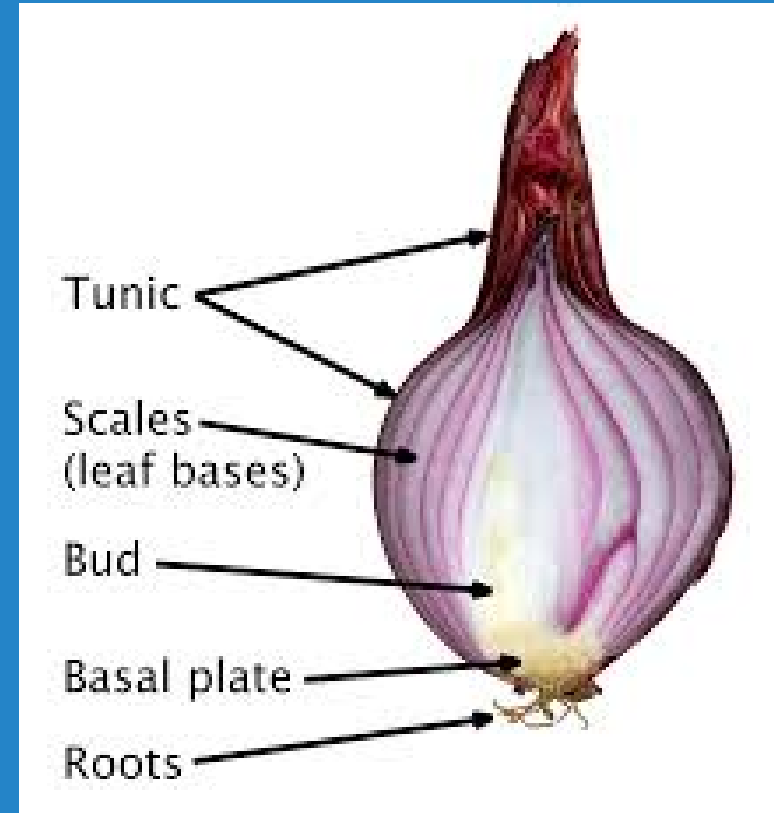
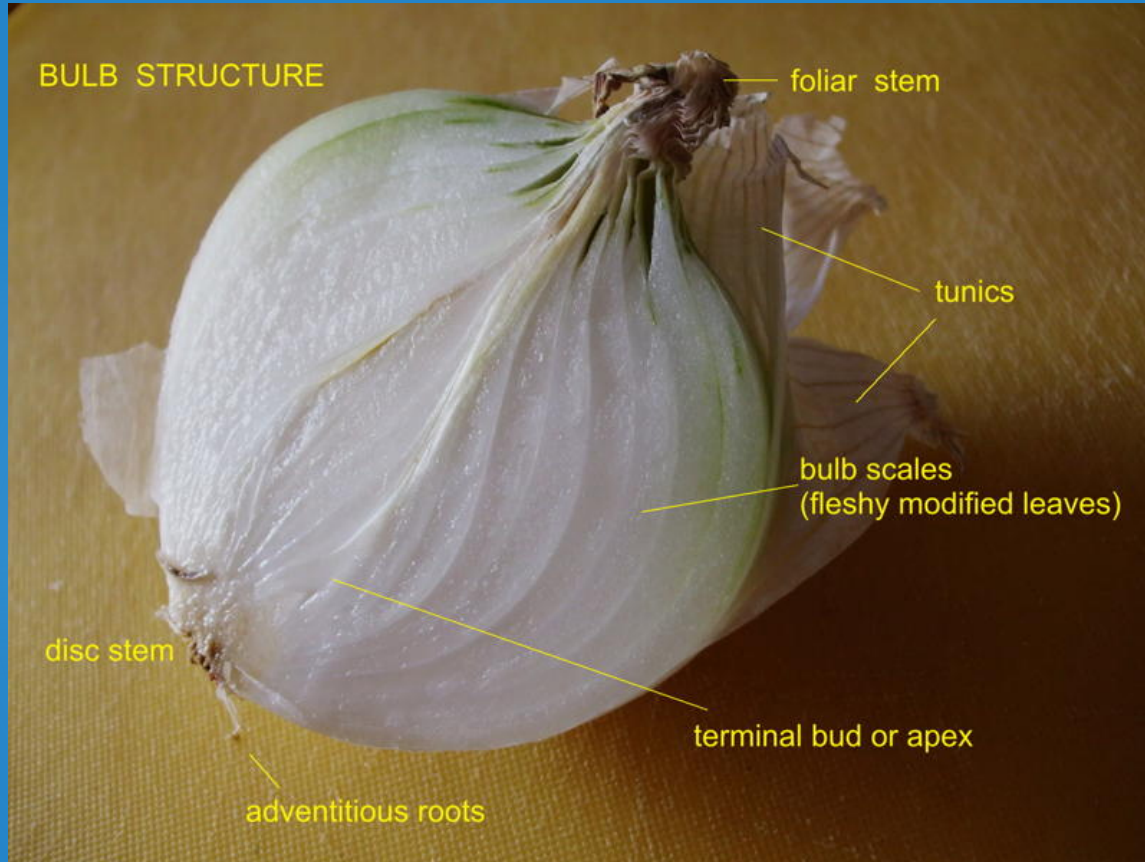


Garlicworld.com.au



Back40forums.com

# Anatomy of Alliums



# Allium Cultivation

1. Plant so that the top of bulbs, 1-2 inches below ground surface
2. Plant 4-6 inches on center.
3. Insure good contact between plant materials and soil.
4. Do not allow soil to dry out.
5. Consider mulching before snow (remove in spring)
6. Side dressing of manure or fertilizers in spring.
7. Foliar amendments sometimes used.
8. Stop watering after 1/3 of leaves start to yellow.
9. When ½ leaves yellow and droop, rake over remaining leaves.
10. After 1-2 weeks harvest, dry and store.

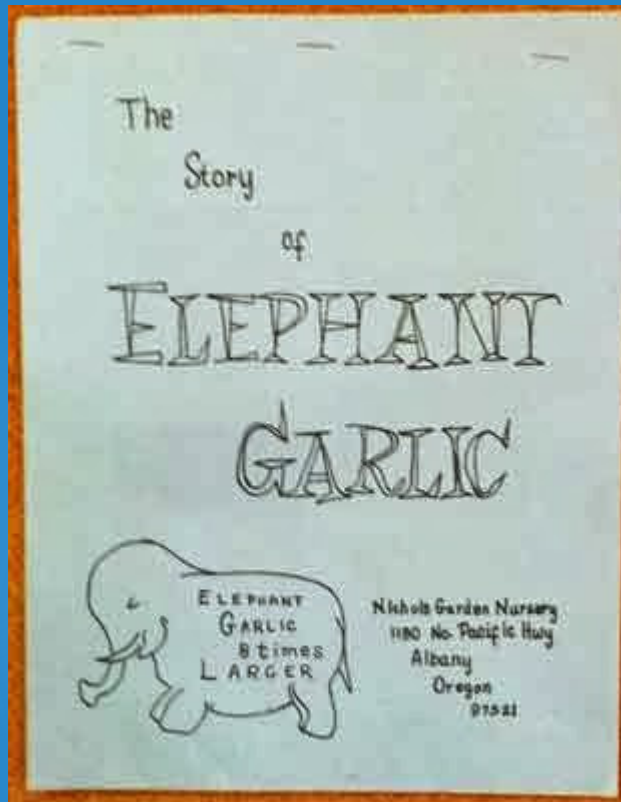


# Leek: EG-1 Elephant Garlic – *Allium ampeloprasum*



Also called Perennial Garlic. Elephant looks like garlic and tastes like a mild hardneck type, but it is **actually a type of leek**. The 1 1/2-in. cloves have delicious, mild garlic-like flavor; bulbs commonly weigh a pound or more. Very easy peeling and keeps very well. Averages 10 cloves per bulb. 120 days to maturity.

# Origins Elephant Garlic



Elephant garlic (including the name) was first introduced to the gardening world in 1941 by Nicholas Garden Nursery in Albany, Oregon.

Areas of the famous Willamette Valley, known for its mild climate and amazingly fertile soil, was settled partly by immigrants from Czechoslovakia and Northern Yugoslavia. Mr. Nichols discovered that some of these folks were growing an enormous variety of garlic, mild in flavor and vastly different from any garlic he had ever seen. They had brought this unusual garlic with them from the Old Country. He purchased 12 pounds as seed stock in 1941 and began cultivating it. When he finally had enough to sell, he began advertising in newspapers and magazines. In 1953 he gave it the name elephant garlic. Back then, he was the only one selling it and when you ordered elephant garlic from Nichols, in your order you received a little pamphlet with growing and storing instructions. He sold elephant garlic across the U.S., Canada and to many countries overseas.

# Elephant garlic pie

5-6 cloves elephant garlic, sliced  
1 tablespoon butter or olive oil  
4 eggs  
1 can evaporated milk  
1/2 cup shredded cheddar cheese  
1 cup chopped fresh spinach  
1 cup diced, thinly-sliced ham  
1 tablespoon cooking sherry  
1/4 teaspoon any brand hot sauce  
2 green onions, diced  
Salt and pepper to taste

**Jim Long,**  
**LongCreekHerbs.com**

Preheat oven to 350 degrees F.

Sauté the sliced elephant garlic in olive oil or butter until tender, about 5 minutes.

Beat the eggs and milk together; add the cooking sherry, hot sauce, green onions and salt and pepper.

In a oiled pie plate, layer the garlic, cheese, spinach and ham, then pour the egg mixture over. Dust with a bit of paprika if desired.

Bake until a knife inserted comes out clean, about 35-40 minutes. Let set for 5 minutes before serving.

# Garlic Types

## Hardneck groupings

1. Rocambole
2. Porcelain
3. Purple Stripe
4. Glazed Purple Stripe
5. Marbled Purple Stripe
6. Creole
7. Asiatic
8. Turban

## Softneck

1. Artichoke
2. Silverskin

# DP-2 Deerfield Purple Garlic – *Allium sativum* ssp. *ophioscorodon*



Size, flavor and uniformity give this garlic an edge. Attractive **purple hardneck** variety has large, meaty cloves and a rich garlic flavor that starts out mild and finishes with a spicy kick. Wrappers have very attractive violet stripes. Very rich garlic fragrance, large meaty bulbs - Approx. 7-10 cloves per bulb.



# KR-3 Killarney Red Garlic – *Allium sativum* ssp. *ophioscorodon*



Strong and nutty flavor. Grows well in wet conditions. Similar to German Red or Spanish Roja, this **Rocambole Hardneck** variety does better than most in wet conditions. Strong and nutty flavor. Harvest fall planted garlic the following season, late spring or early summer, about 240 days from planting. Harvest spring planted garlic the same season, about 90 days from planting. Its easy-to-peel cloves and outstanding flavor makes it a favorite for foodies and chefs. The easy-handling cloves are loosely covered, resulting in a shorter storage life than other varieties at 2-3 months. Averages 9 cloves per bulb. variety.

# SR-4 Spanish Roja Garlic – *Allium sativum* ssp. *ophioscorodon*



The garlic of choice in fine restaurants *because of its easy-to-peel cloves and outstanding rich garlic flavor*. Probably the **most popular hardneck** type, because most garlic lovers find the flavor to be "true garlic". A Northwest heirloom that was reported to have been brought into Northwest Oregon before 1900, it is often called Greek garlic by home gardeners throughout the region. Has delightful coloring, easy-to-peel cloves and outstanding hot flavor, making it a favorite for chefs and foodies. A must in every garden. Harvest fall planted garlic the following season, late spring or early summer, about 240 days from planting. Harvest spring planted garlic the same season, about 90 days from planting. Averages 11 cloves per bulb.

# Pesto –

## Ingredients

1 cup fresh basil leaves  
3-5 cloves garlic, peeled  
3 tablespoons pine nuts  
1/3 cup grated  
Parmesan Cheese  
Kosher salt and freshly  
ground black pepper,  
to taste  
1/3 cup olive oil

## Directions

To make the pesto, combine basil, garlic, pine nuts and Parmesan in the bowl of a food processor; season with salt and pepper, to taste. With the motor running, add olive oil in a slow stream until thoroughly incorporated into a thick paste.

Chungah – [damndelicious.net](http://damndelicious.net)

# DG-5 Duganski Garlic

## *Allium sativum* ssp. *ophioscorodon*



A **Marbled Purple Stripe** **hardneck** heirloom variety that was either “discovered” in 1989 by John Swenson at a Bazaar in Samarkand, Uzbekistan. In the Great Book of Garlic, Chester Aaron claims this variety as originating in the Czech Republic



# GR-6 German Red Garlic

## *Allium sativum* ssp. *ophioscorodon*

German Red, while adaptable, is especially well-suited for cold winters. Its bulbs are strong and spicy with a robust flavor, and the cloves are easy to peel, which makes them a favorite for chefs and foodies. Bulbs are fairly uniform and have thin, purple-brown skin. Harvest fall planted garlic the following season, late spring or early summer, about 240 days from planting. Harvest spring planted garlic the same season, about 90 days from planting. Averages 14 cloves per bulb. **Hardneck.**





# CW-7 California White Softneck Garlic

## *Allium sativum* ssp. *sativum*



Store-bought garlic just can't compare! Large, plump **Softneck** bulbs have papery skins and plenty of creamy-white cloves bursting with excellent, spicy-hot flavor. Easy to grow, very productive, adaptable to any climate. Cultivate and store as you would onions. Does well in moderate climates; cool season crop. Approx. 10-20 cloves per bulb. 120 + days to maturity.

# Roasted Garlic

Preheat oven to 425 degrees F.

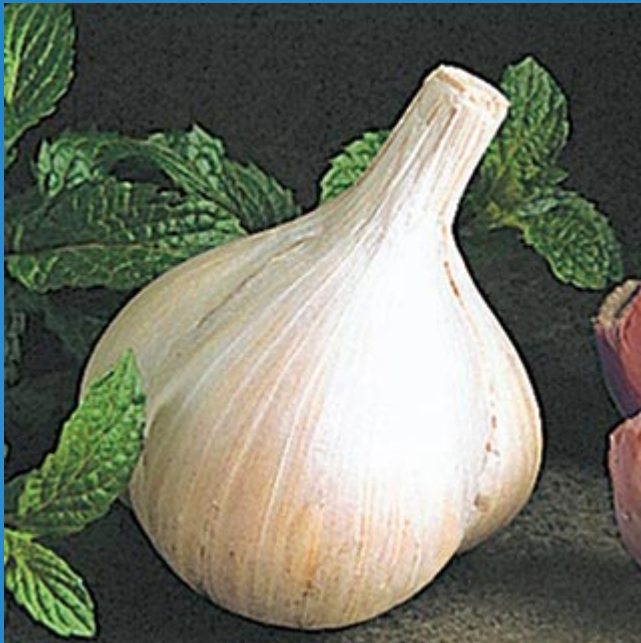
- ▶ Slice off the very top of the garlic head. Place in a piece of foil and drizzle olive oil inside the head of garlic until it is completely filled and just starting to run down the side. Sprinkle ½ teaspoon salt and pepper
- ▶ Wrap tightly with foil and place on a cookie sheet and bake until tender and fragrant, roughly 35 minutes.
- ▶ Remove from the oven and let cool. Peel outside off of bulb of garlic, then gently squeeze each clove out.



Photo and recipe January Bride

# WW-8 Walla Walla Early Softneck Garlic

## *Allium sativum* ssp. *sativum*



Mild flavored. The downside is that this variety often takes very long to sprout in the garden. Good for braiding. Italian purple strain. Well adapted to cold climates. **Softneck** braiding type is excellent for Northern growers. Reliable producer of slightly spicy, pink-to-red cloves. Approx. 12-20 cloves per bulb.



# IR-9 Inchelium Red Garlic – *Allium sativum* ssp. *sativum*



Discovered on an Indian reservation in Washington, this mid-season, **artichoke-type Softneck** variety is a national taste test winner. With its pleasing rich flavor and medium pungency, it's not hard to see why it won the prize. Very large cloves. White wrappers and cloves. Stores well for 6 - 9 months. Approximately 12-20 cloves per bulb.

# NR-10 Nootka Rose Garlic – *Allium sativum* ssp. *sativum*



Nootka Rose – *Allium Sativum* ssp. *Sativum*. An heirloom variety that is a Silverskin softneck with bright white skin and rosy streaked cloves; excellent for braiding. Nootka Rose is a late maturing garlic – the latest variety among the Silverskins – but well worth the wait. Flavor is rich and warm, but not overly hot. This is a very long-storing garlic that easily holds into the next spring or even summer. This heirloom comes from the San Juan Islands off the coast of Washington.



# CE-11 California Early Garlic – *Allium sativum* ssp. *sativum*



An early maturing garlic, suitable for most climates. Early White is a great garlic for the beginning grower, as it has a semi-rich flavor without the huge bite of garlic (but the garlic flavor is still there!) and is very prolific. The large cloves (12 to 16 per bulb) are sure to please.

# Onion Types

Bulbing (Bottom Set) onions -

Typical onions *Allium cepa*

Top set or tree onions –

Egyptian Walking onion *Allium cepa* spp. *Proliferum*

Non bulbing (Green) onions or Scallions –

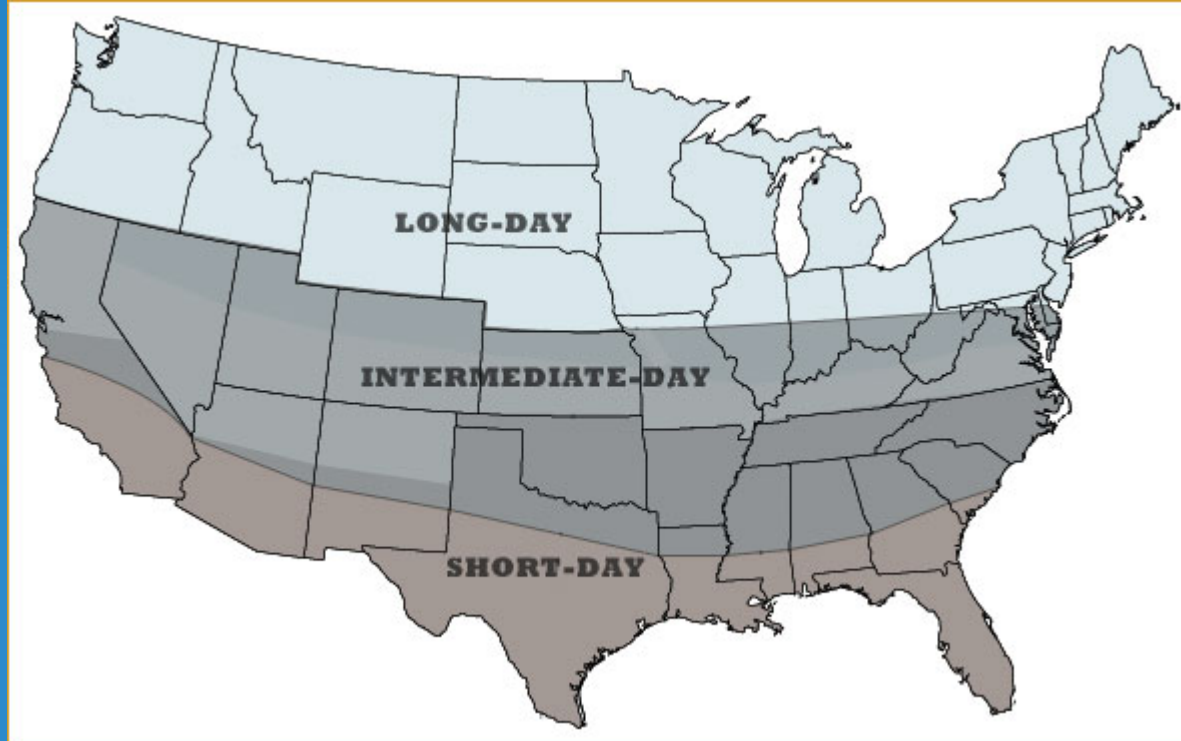
Welsh Onion *Allium fistulosum*

Multiplier Onions –

White Multiplier onion *Allium cepa* spp. *aggregatum*

French Grey Shallot *Allium oschaninii*

# Onion Photoperiodicity



Dixondale Farms

Co-operative Extension Tahoe Basin Master Gardeners

# Short Day Onion

- Form bulbs with 10 to 12 hours of daylight
- Need mild winter climate (zone 7 or warmer)
- Planted in fall, mature in late spring
- Can be grown in the North, but bulbs don't get as large
- Matures in 110 days in the South with fall planting, 75 days in the North with spring planting
- Examples: Georgia Sweet, Sweet Red, Texas Super Sweet, Texas Sweet White

Bonnie Farms



# Day Neutral Onions (Intermediate)

- Form bulbs with 12 to 14 hours of daylight
- Produce nice bulbs in all regions except South Florida or South Texas (ideal for zones 5-6)
- Planted in fall in mild winter climates and in early spring in northern regions
- Very sweet
- Matures in 110 days
- Example: Spanish Globe Onion \* Candy Onion
  - \* May also be considered a Long Day Onion

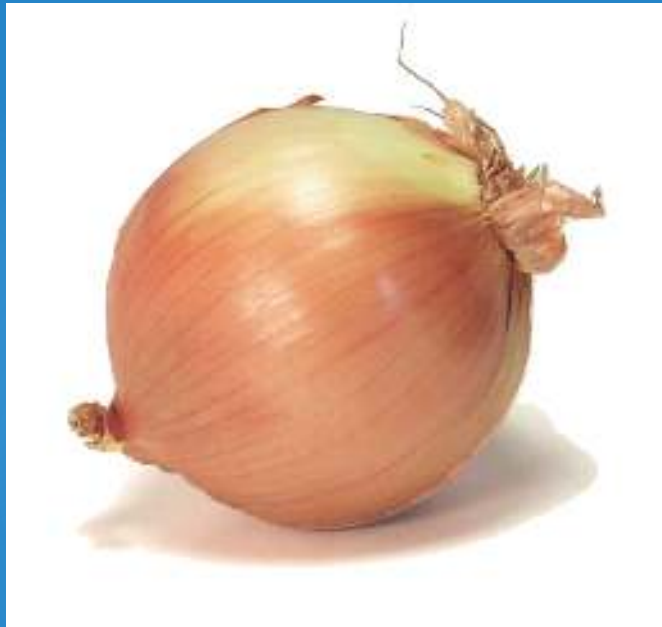
Bonnie Farms

# Long Day Onions

- Form bulbs with 14 to 16 hours of daylight
- Typically grown in northern regions (zone 6 and colder)
- Planted in late winter/early spring
- Matures in 90 to 110 days
- Stores well
- Examples: [Wethersfield Red Onion](#), [Portugal White Onion](#), [Walla Walla Sweet Onion](#)

Bonnie Farms

# SG-12 Spanish Globe Onion – *Allium cepa*



Sweet flavored and stores well! 85 days from sets. A large yellowish onion with a crisp, firm flesh that'll store well for several months. Its mild, sweet flavor is popular for cooking and eating fresh. Full sun. Zones 3-9. Can be considered **a long or intermediate day** cultivar.

# WR-13 Wethersfield Red Onion – *Allium cepa*



Eye-catching purplish-red skin covers firm, white flesh with a delectable crunch. At its tastiest raw-terrific for sandwiches and slicing into salads but also great for grilling, charbroiling, and roasting. As a general rule of thumb, white onions are best for slicing while red onions are good for salads and yellow is best for cooking and storage. Red onions can also be used for freezing and cooking. The bulbs are large, flattened globes with deep purple skin and a strong flavor. **Long day type** cultivar. 85 days from sets.



# Wethersfield Red Onion Shortcake

Description: This is a traditional recipe for a rich, savory shortcake that became popular in Wethersfield in the 19<sup>th</sup> century – New England Historical Society Recipe

## Crust

2 cups flour  
4 teaspoons baking powder  
1 teaspoon salt  
6 tablespoons butter  
1/2-3/4 cup buttermilk

## Filling

8 -10 medium onions  
6 tablespoons butter  
1 teaspoon salt  
1/8 teaspoon white pepper  
1 cup sour cream  
2 eggs, slightly beaten

Preheat oven to 450°F.

For the crust: mix flour, baking powder and salt in a bowl. Work in the butter until the mixture looks like coarse meal. Slowly add the buttermilk, mixing until the mixture forms a somewhat sticky dough. Turn onto a floured board and knead briefly until smooth. Line a 9- inch springform pan with the dough and chill until ready to use. For the filling: Sauté onions in butter until transparent. Spread them over the dough. Mix the sour cream and seasonings with beaten eggs, blending thoroughly. Pour the mixture over the onions. Bake for 10 minutes, then reduce the oven to 350°F and bake 45 minutes more.

Slice in wedges. Serves 4 as a main dish or 6-8 as a vegetable dish.

# WP-14 White Portugal Onion – *Allium cepa*



Produces record yields of large bulbs—for the biggest, whitest slices you've ever seen! Extremely tasty, too, with a cool, crisp, fine-grained texture. As a general rule of thumb, white onions are best for slicing, while red onions are good for salads and yellow is best for cooking and storage. White onions are big, firm bulbs with a mild flavor. Can also harvest this variety as a young green onion in as little as 2 - 4 weeks. **This is a long day** cultivar. Harvest in late summer.

# Onion Dip From Scratch

## Ingredients

2 tablespoons olive oil  
1 1/2 cups diced onions  
1/4 teaspoon kosher salt  
1 1/2 cups sour cream  
3/4 cup mayonnaise  
1/4 teaspoon garlic powder  
1/4 teaspoon ground white pepper  
1/2 teaspoon kosher salt

**Recipe by Alton Brown, Food Network**

## Directions

In a sauté pan over medium heat add oil, heat and add onions and salt. Cook the onions until they are caramelized, about 20 minutes. Remove from heat and set aside to cool. Mix the rest of the ingredients, and then add the cooled onions. Refrigerate and stir again before serving.

# EW – 15 Egyptian Walking Onion

## *Allium cepa* spp. *proliferum*

Egyptian walking onions are considered heirlooms, said to date back to at least the 1850s as a Catawissa Onion. A top set onion. Probably a **Day Neutral Onion**. They are cold hardy to Zone 3, and can remain evergreen through a Zone 5 winter. They are some of the first plants to show in spring and can be productive year after year. A great source of spicy-flavored onions almost year round.



[www.vegetable-gardening-online.com](http://www.vegetable-gardening-online.com)



# Pickled Egyptian Onions

## Ingredients:

1 cup Egyptian onion bulblets (about 1/2-inch wide)  
2/3 cup seasoned rice vinegar  
(or 1/2 cup rice vinegar plus 3 tablespoons sugar, and salt to taste)

Separate bulblets, trim ends, peel, rinse, and drain. In a 1 to 2 quart pan, combine bulblets and vinegar. Bring to a boil over high heat; boil, uncovered, for 1 minute. Pour into a wide-mouthed jar; cover. Cool, and chill at least 1 day or up to 1 month. Makes 1 cup.

Originally published in Sunset Magazine 1993, reprinted by Old Fashioned Living

# RS-16 Red Sun Shallot – *Allium ascalonicum*

Gaining in popularity due to its attractive red tinged skin, Shallot 'Red Sun' is arguably the best of the red shallots. Producing good yields of crisp, white fleshed bulbs of excellent flavor for cooking, salads or for pickling. Plump, rosy bulbs wrapped in papery skins with a hint of purple color. Shallots are mild enough to eat raw, but robust enough to stand up to intense heat. In France, they are chopped into vinaigrettes and stuffings, and baked in tarts. Crispy, fried shallots make a wonderful topping for soups, salads and fish. Shallots are a carefree crop to grow once established and are a great storage crop, able to keep for 6 months or more. 120 days to maturity.



# FG-17 French Grey Shallot – *Allium oschaninii*



*Bulb size ranges from ½ inch to 2 inches. These shallots have a hard skin that can be difficult to peel, but beneath their rough exterior lies a heart of gold. The French Grey Shallots are a true shallot, meaning they are only propagated vegetatively and never form true seeds. Traditionally planted in the fall it takes about 270 days in ground before harvesting.*

# Cream of Shallot Soup – Alain Passard

1 lb. 5 oz. French Shallots  
3 tbsp. half-salted butter  
1 1/2 garlic cloves, peeled  
2 cups whole milk  
Juice of half a lemon  
Fleur de sel (Sea Salt)  
3/4 cup heavy cream  
5 oz. smoked bacon, coarsely  
chopped

Craig Lindquist  
Vegetables of Interest, 2008

1. Heat the cream and smoked bacon in a saucepan. Leave to infuse, covered, for 30 minutes. Remove the bacon and put the cream aside in the refrigerator.
2. Wash, peel and mince the shallots. In a skillet, brown them lightly in the half-salted butter. Add the garlic cloves and whole milk and cook for 15 minutes over low heat.
3. Liquefy in a blender and strain; season with fleur de sel (Sea Salt) and lemon juice.
4. Whip the cream as soon as you take it out of the refrigerator until it has the consistency of whipped cream.
5. Serve the soup very hot. Top each bowl with a dollop of the whipped bacon cream.



# Phytosanitation

Relating to, or being measures for the control of plant pests and diseases especially in agricultural crops.

Merriam-Webster on-line Dictionary

Gardeners, especially those in Tahoe have a responsibility to purchase certified plant materials, and use gardening practices that minimize risks of spreading plant pests or disease.



Onion maggot



Onion maggot adult

# Garlic and Onion Production

The US is the 9<sup>th</sup> largest producer of garlic in the world. China is #1 with 100 times greater volume than the US.

California is the largest garlic producer in the US followed by Oregon and Nevada

Onions are the most valuable food crop in Texas and Georgia

China is the largest producer of onions followed by India and the US.

Washington State has the largest acreage devoted to onions. California ranks 3<sup>rd</sup> and Nevada 10<sup>th</sup>

# Festivals and Events



Gilroy  
Garlic  
Queen

Bridget Brown



Miss Georgia  
Sweet Onion  
Queen

Kayla Tootle

# Fun Stuff

It's a violation of Lexington, Kentucky law for any citizen to carry one or more raw onions in his pocket.

It's also against the law in Okanogan, Washington, to eat onions in public with a spoon.

In Dyersburg, Tennessee, citizens aren't allowed to enter a movie theater within four hours after having eaten raw onions.

Chumuckla, Florida, doesn't allow onions to be purchased between sunset and sunrise.

<http://aggie-horticulture.tamu.edu>

In Mohammed's writings, he equates garlic with Satan when he describes the feet of the Devil as he was cast out of the Garden of Eden.

The Koran has this to say about garlic: "Whoever has eaten garlic should not come to our mosques".

in some countries garlic is put before the door of the house to banish bad ghosts.

[metapedia.org](http://metapedia.org)

# Gorbachev and Garlic



Mikhail Gorbachev, last leader of Soviet Union.

Worked on farms as combine operator in teens.

Degree in Law (BA) and Agricultural Economics (MS)

He was appointed to the Secretariat for Agriculture in 1978.

Just prior to Soviet break-up he permitted USDA personnel to collect specimens of garlic throughout portions of USSR.