

## Bulb Onion



As a fresh market crop, bulb onions are a relatively minor crop in the county. However, bulb onions are a significant seed crop in the Yuma area, onion seed producers grew roughly 500 acres in 2008.

At least 175 countries grow onions. According to the United Nations Food and Agriculture Organization, there are an estimated 6.7 million acres of onions in the world, producing 105 billion pounds of onions each year. Leading onion production countries are China, India, United States, Turkey and Pakistan, respectively.

The size of the onion bulb is dependent upon the number and size of the green leaves or tops at the time of bulb maturity. For each leaf there will be a ring of onion; the larger the leaf, the larger the ring will be. The onion will first form a top and then, depending on the onion variety and length of daylight, start to form the bulb. Onions are characterized by day length; "long-day" onion varieties will quit forming tops and begin to form bulbs when the daylength reaches 14 to 16 hours while "short-day" onions will start making bulbs much earlier in the year when there are only 10 to 12 hours of daylight. A general rule of them is that "long-day" onions do better in northern states while "short-day" onions do better in states south of that line.

Onions go through a process called 'bulbing' to produce the onion bulb. Bulbing is affected by amount of daylight, not by plant age. Daylight necessary to initiate bulbing depends on the variety of onion and can range from 12 hours for early maturing types to 15 hours for late maturing types. Mature onion bulb size is highly correlated to the size of the onion plant at the time bulb formation begins. Thus, bulb size is influenced by the same factors which influenced plant growth prior to the beginning of bulbing, plus environmental conditions during the completion of bulbing and maturity.

There are many different varieties of onion, red, yellow, white, and green, each with their own unique flavor, from very strong to mildly sweet. Onions can be eaten raw, cooked, fried, dried or roasted. They are commonly used to flavor dips, salads, soups, spreads, stir-fry and other dishes.

Onions (*Allium cepa*) belong to the lily family, the same family as garlic, leeks, chives, scallions and shallots. There are over 600 species of *Allium*, distributed all over Europe, North America, Northern Africa and Asia. The plants can be used as ornamentals, vegetables, spices, or as medicine. There are over 120 different documented uses of the *Alliums*.

Onions are characterized by their rich content of thiosulfinates, sulfides, sulfoxides, and other odoriferous sulfur compounds. The cysteine sulfoxides are primarily responsible for the onion flavor and produce the eye-irritating compounds that induce lacrimation. The thiosulfinates exhibit antimicrobial properties. Onion is effective against many bacteria including *Bacillus subtilis*, *Salmonella*, and *E. coli*. Onion is not as potent as garlic since the sulfur compounds in onion are only about one-quarter the level found in garlic.

Onions contain a number of sulfides similar to those found in garlic which may lower blood lipids and blood pressure. In India, communities that never consumed onions or garlic had blood cholesterol and triglyceride levels substantially higher, and blood clotting times shorter, than the communities that ate liberal amounts of garlic and onions. Onions are a rich source of flavonoids, substances known to provide protection against cardiovascular disease. Onions are also natural anticlotting agents since they possess substances with fibrinolytic activity and can suppress platelet-clumping. The anticlotting effect of onions closely correlates with their sulfur content.

To help stop tears, chill an onion 30 minutes before peeling. Start cutting the onion from the neck

first and use a stainless steel knife (not iron). The onion will be stronger flavored at the root end. Cut onions can be placed in sealable plastic bags and kept in the refrigerator for several days.

This is a genus of strong-smelling bulbous herbs of the either the Lily Family or Amaryllis Family. It includes more than 300 species of which about 70 are cultivated, some as ornamentals, most as vegetables. Onions, garlic, leeks, chives, and their relatives, are all members of this family.

The thick scales that protect the bud are actually swollen leaf bases. The scales are anchored to a tough basal plate (the flat end of the bulb) from which the roots will grow. The layers of scales store food to nourish the bulb when the plant's top growth dies back. The bulb actually contains nearly everything that the embryonic bud will need to grow and bloom, including a lot of water. When harvested, the yellow sweet Spanish onion bulb is almost 95% water.

The onion contains some substances which contain sulfur. Sulfur is an irritant to both our noses and to our eyes. Cutting an onion releases these sulfur compounds. When these sulfur compounds come in contact with the water in our eyes, they produce sulfuric acid. Sulfuric acid irritates the eyes, and in response to this acid, our eyes automatically blink, and produce tears which wash the eye and flush out the acid.

Specialty sweet onions contain very small amounts of the sulfur-containing compounds, only about 50% of the typical levels found in other varieties. We taste the sugar instead of the sulfur and think they are much sweeter. Ironically, sugar levels in sweet onions are only slightly greater than those of some storage onions. The sulfur compounds serve an important purpose, however, increasing an onion's capacity for long-term storage. The specialty sweet onions will not store as long.

Some food historians place the earliest onion cultivation at the edges of the Mediterranean as long ago as 5,000 years. Others believe that onions originated in central Asia. The National Onion Association says onions were first grown in Iran and Pakistan. It's difficult to say in which area onions originated as several hundred varieties of onions grow wild in temperate climates all around the world.

The Egyptians left onions in their tombs about 3,500 years ago. In fact, the mummy of King Ramesses IV, who died in 1160 B.C., had small onions in the eye sockets, probably because they had some spiritual significance and because they replicated a real eyeball. Paintings of onions appear on the inner walls of the pyramids of Unas (c. 2423 B.C.) and Pepi II (c.2200 B.C.), and in tombs of both the Old Kingdom and the New Kingdom.

The onions we use today are very similar to those described and eaten 2000 years ago. By 1900, plant breeders were already refining the species to meet the needs of the grower and consumer. A 1900 seed catalog might offer red, yellow, white, oblate, globe and spindle shaped onions.

The accidental discovery of a male-sterile onion by the botanist Henry Jones in 1925 marked the beginning of modern onion breeding. Crossing the sterile line of onions with other onions having desirable characteristics could produce new and better hybrids. Cooperative breeding programs began at universities all across the country. The result was that onion varieties were developed for specific and varied growing conditions.

The biggest onion ever was grown by V. Throup in Silsden, England. It was about 11 pounds.

The Gulf War ended in an onion field in Basrah.

The two pickled pearl onions you may get in a martini can be grown using specific cultivars, or short-day cultivars, or even by just crowding onions in a field.

The skins of two red onions or yellow storage onions are enough to dye one dozen eggs.

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