

TOMATOES

GROWN IN WASHINGTON - 2015

Tomato is a vegetable whose road through history was not easy and filled with numerous misconceptions and roadblocks. Finally in the last few centuries this South American plant managed to spread all across the world, becoming one of the best know food ingredients and one of the most beloved vegetables (even though technically its classified as a fruit). Selective breeding managed to refine tomato into very nutritious state, filled with vitamin A, C, E, antioxidants, and more.

The exact origin of Tomato plant is not known, although it is speculated that it evolved from the prehistoric plant Nighshade over millions of years ago in South America (together with potato, tobacco and chili peppers) and slowly moved to north until it was domesticated in the lands of Mesoamerica between Mexico and northern Costa Rica. This land was a home of several advanced Pre-Columbian society who flourished there until arrival of Europeans in the Age of Discovery. During 500 BC, one of those cultures managed to domesticate tomato and integrate it into their cuisine. That culture was Aztecs. From that point on, tomato slowly spread across the central and South America, somewhere being used as a food, but somewhere also being used as a hallucinogenic (a use that will later on be a cause of many misconceptions about this vegetable).

The first European contact with tomato came with Christopher Columbus who possibly encountered it in 1493, but it was Spanish conquistador Hernán Cortés who first saw the potential of this plant in the sacked city of Aztec city of Tenochtitlan and took its seeds back to Europe. There, seeing that tomato could grow without a problem in a warm Mediterranean climate, Spanish government started encouraging its production in both Europe and its distant colonies. As early as 1540s tomato started being produced in Spanish fields, and was used regularly as a common food in early 17th century. Other European countries did not adopt tomato immediately. For example, even though Italian nobility and scientists found out about tomato from 1548, (which is now famous for their tomato and ketchup industry), they used it only as a tabletop decoration fruit until late 17th and early 18th century. They cherished their beauty, and experimented with selective breeding, managing to create tomatoes of many colors and shapes. Tomato received similar fate in England, where it was introduced in 1597, but it remained viewed as unhealthy, poisonous and unfit to eat in both England and its North American colonies. That changed in mid-18th century after many advances in selective breeding from Spain and Italy.

In early 19th century tomato finally arrived in Asia. It arrived there under the guidance of British consul in Syria John Barker who directed first cultivation efforts. By mid-19th century, tomato gained much popularity and started being used widely in Syria, Iran and China.

Modern age of commercially grown tomato started with the efforts of Alexander W. Livingston, American botanist and scientist who dedicated much of his life on upgrading tomato with selective breeding into the most commonly known form we know today. His 1870s breed called

Paragon became instant success in the North America, kick-starting the large tomato industry and approval from public.

In 2009, worldwide tomato production rose to 158.3 million tons, surpassing the previous year by 3.7%. The largest producers were China with 24% of world production, followed by United States, Turkey, India, Egypt and Italy.

FRESH TOMATO PRODUCTION IN WASHINGTON STATE: Essentially every county in Washington State has some fresh market tomato production, and most fruit is sold in-state. Tomato production in Western Washington is dispersed and occurs on small acreages. In 2007, there were a total of 318 acres in production on 409 farms. In 2006, the total value of tomato production in Washington was estimated to be \$1-\$1.2 million. While tomatoes are a relatively minor crop in terms of overall production and value in Washington, they are a mainstay crop for direct-market farmers statewide. Most tomatoes are currently sold through direct marketing.

Tomato varieties are either determinate (vegetative growth stops after approximately three flower trusses per stem) or indeterminate (plant growth and fruit set continue until environmental conditions are no longer favorable). Higher yielding varieties tend to be indeterminate, and they require staking and, in many cases, pruning. Earlier varieties tend to be determinate, and these varieties have shorter planting stature and may be grown without staking or pruning.

Tomatoes grow best when temperatures are between 65 and 80 degrees F. When temperatures are above 98 degrees F. or below 40 degrees F., pollination and fruit set are inhibited. Yield is positively correlated with sunlight, and shading reduces yield by reducing fruit size. For optimum production, tomatoes are grown from transplants and harvested by hand. Seed requirements are approximately one-half ounce per acre, and plant populations are generally 4,000 to 6,000 plants per acre. Seedlings are generally started in a greenhouse and are 6-8 weeks old when transplanted outdoors.

Most tomatoes are staked and grown in raised beds with drip irrigation and black plastic mulch. Black plastic mulch controls weeds, conserves moisture, and increases soil temperature.

Fertilizer and regular irrigation are essential for high quality fruit production. Tomatoes require a generous amount of nitrogen, phosphate, and potassium. Irrigation needed is approximately 1-2 inches per week, depending upon the temperature. Harvested tomatoes can be stored at 45-50 degrees F. and 90-95% relative humidity for up to two weeks.

SOURCES OF INFORMATION:

Washington State University Extension
Growgardentomatoes.com website