# Turnips

Entry prepared by Jessica Polidoro ’08

in College Seminar 235 Food for Thought: The Science, Culture, & Politics of Food

Spring 2008

## Introduction, Scientific Classification and etymology, and Botanical description

The turnip is a biennial plant (taking two years to complete its lifecycle) that is most commonly grown as an annual. The first year the plants grow, they store what will eventually be used for human consumption in their roots. During the second year, if left in the ground of replanted the plants produce flowers and set seed[2]. The scientific classification for the plant is either Brassica rapa or Brassica campestris. Brassica is the Latin word for cabbage, rapa means turnip[3], and campestris refers to “of fields” in Latin. Pliny, an ancient Roman author, used the names rapa and napus to descibe turnips that were long, flat, or round. English of the Middle Ages turned napus into naep in Anglo-Saxon. Combined with the word turn, which means “made round,” the name turnip was created.[4] The turnip itself is a, “root vegetable in the Cruciferae, or mustard, family”[5]. However, technically this root vegetable is not actually a root at all, but a “swollen stem which grows beneath the surface of the soil”[6]. The plants are, “almost perfectly round and have white flesh and thin, rough leaves covered by prickly hairs”[7]. These leaves are tough, usually light green in color, and the covering, which resembles hair but is actually just a

sort of growth, is usually present. Turnips are bulbous in shape and are often a mixture of the colors purple, white, and/or yellow. There are many varieties of turnips, and each has a different flavor and storage capacity. Some common varieties include the Purple Top Strap Leaf, which originated prior to the year 1865, the Gold Ball, the Purple Top White Globe, the Purple Top Milan, the Goose Egg, the Orange Jelly, the Seven Top and the Shogun, which are both grown for their edible foliage. Turnips are mainly used as an ingredient in soups and stews consumed mostly in the winter, but they have other potential uses as well. Turnips can be cooked as a mashed dish, baked, fried, boiled, or used to make wine. Their roots and their greens are very different food products, and the roots are more common to the Northeast United States, while the greens are part of the 'soul food' "standard southern menu"[8].

Turnips grow in a similar pattern to carrots. The turnip root grows during the first year, with leaves forming above the ground. The turnip may be harvested at this time. Turnip seed, thought, is gathered from the best turnips at the harvesting stage. At the second growing, new leaves form alongside flowers. Flowers turn into seed pods if they are fertilized, or pollinated.

Other vegetables that aren't actually turnips are considered similar to the original turnip species. The rutabega is a different species that many people associate with the turnip, but in fact it is made up of different cells and varies from the turnip in terms of appearance, history, and composition. The rutabega may in fact be a cross between the turnip and cabbage, but it is its own species. Broccoli rabe is sometimes referred to as turnip broccoli, kohlrabi is often called turnip cabbage, and chervil sometimes is considered turnip chervil. While certain species can be

grouped together as similar in nature or appearance, each specific plant has substantial individual characteristics.

Interestingly enough, although turnips are usually less than five inches thick, a one hundred pound turnip was once grown in California[9].

Purple Top Turnips – Just Harvested

(http://straightfromthefarm.wordpress.com/2007/06/20/roasted-vegetable-medley/)

## Nutritional Aspects

The nutritional value of turnips for humans can be summarized as low in fat and calories but high in vitamin C and fiber. In one cup (156 grams) of cubed turnips which have been cooked, boiled, and drained, with no additional ingredients, the following can be found: 146.02 grams of water, 34 calories, 1.11 grams of protein, 0.2 grams of fat, 7.89 grams of carbohydrates, 3.1 grams of fiber, 4.66 grams of sugar, 51 milligrams of calcium, 0.28 milligrams of iron, 14 milligrams of magnesium, 41 milligrams of phosphorus, 276 milligrams of potassium, 25 milligrams of sodium, 0.19 milligrams of zinc, 0.003 milligrams of copper, 0.111 milligrams of manganese, 0.3 milligrams of selenium, 18.1 milligrams of Vitamin C, 0.042 milligrams of thiamin, 0.036 milligrams of riboflavin, 0.466 milligrams of niacin, 0.222 milligrams of pantothenic acid, 0.105 milligrams of Vitamin B-6, 14 mcg of folate, 13.6 mcg of choline, 0.03 milligrams of Vitamin E, and 0.2 milligrams of Vitamin K7[10].

The root of the turnip is where the Vitamin C, potassium, and fiber are found. The greens have vitamins A and K in addition to the Vitamin C, folate, and beta-carotene, lutein, and zeaxanthin, which are common antioxidants. Lutein and zeaxinthin have "shown promise in helping combat the eye conditions of macular degeneration and cataracts"[11]. In addition, turnips, like other members of the Brassica family, could protect against colon, lung, prostate, and stomach cancers since studies show there is a compound in the vegetables that "induces the death of cancer cells"[12].

Turnips, however, provide different nutritional value for animals. Forage, which is a term used to describe plant material consumed by livestock, is of very high quality in turnips in relation to that of other commonly grown plants. Grazing animals consume the stems, leaves, and roots of the plants. The stems and leaves contain about 20-25% crude protein, 65-80% in vitro

digestible dry matter, 20% neutral detergent fiber, and 23% acid detergent fiber; while the roots contain about 10-14% crude protein and 80-85% in vitro digestible dry matter[13]. Similar to the effects of corn on cattle digestive systems, turnips can lead to health problems if an animal is fed just that for too long.

As Barbara Pleasant says in a 2007 article about the benefits of turnips for human consumption, "No other vegetable gives you the choice between supernutritious greens or juicy roots that rival carrots for crunchiness…[that have] easy to store perfect roots"[14]. These plants have unlimited uses due to their multiple edible parts, and their nutritional benefits are of great value to both humans and animals.

## Cultivation Requirements

Turnips growing in the cool months (http://home.howstuffworks.com/turnips.htm)

In terms of planting, the turnip is a relatively flexible species. Turnips are easy to grow and may be planted either in the spring, late summer, or the fall if the roots and greens are what is desired from the harvest. It all depends on when the turnips are to be used. For summer use or consumption, one should plant the turnips in the early spring. For fall use, summertime is when the seeds should be planted. Like other plants, much water must be used in order for the seeds to germinate and the plants to grow to be strong. However, turnips do have some specific cultivation requirements if the planter hopes to get the best output possible.

The soil used for planting the turnips should be not too wet but not too hard. Fortunately, turnips can be grown in any soil, but the loose soil will allow for the roots to develop properly. The soil must be very deep as well, since the roots will reach far down. The pH level should be between 6.0 and 6.8, but the turnips will be able to grow in anything up to level 7.5[15]. Depending on the season the plants will be grown in, the gardener will find different options for light and temperature. Some believe the optimal temperature for growing turnips is between 60 and 65 degrees Farenheit, yet others only specify the importance of having "fall sun" shine its light on the crop. In all cases, the turnip should take between 40 to 80 days to mature.

Turnips should be planted at least two inches apart, to again allow the roots ample room to develop in the soil. If the plant is used for its roots, it should be planted between 2 and 6 inches apart, and if for its greens then between one and four inches apart. Approximately once a week, the gardener should one of many varieties of irrigation methods to give the plant 1.5 inches of water by depositing it into the soil. To limit disease and crop failure, the turnip should not be grown after another root vegetable, which is a broad category that encompasses potatoes, beets, carrots, parsnip, and jicama. If root vegetables are grown one after another, this may promote disease. Another way to prevent the spread of diseases in soil is by using hot water treated seed and fungicide treated seed.

If planted correctly, seeds will begin to sprout after three days. If watered too much, the seeds will begin to flower too early, which is not desirable because the root will not have had adequate time to fully develop. Greens will be ready to harvest after between five and seven weeks. In order to continue the plant's development, the gardener must pick only a few leaves from each plant so that the plant and root continues to develop. A few weeks later, the roots will be ready to remove from the soil. However, the turnip roots should be left in the ground as long as is possible as long as the soil isn't in danger of freezing. If more than needed is picked, the turnips roots will stay fresh in the refrigerator for a few weeks and the greens can be frozen for even longer.

Turnips should be harvested while still small in order to get the best taste out of the plant. If turnips get beyond the size of a medium orange, they will lose much of their flavor.[16]

## History, Origin, and Geographic Distribution

Some researchers claim that turnips have been eaten since the 1500s, while others believe the plant to date back to prehistoric times. Still other sources assert that turnips have been cultivated since "before recorded history[17]." They are indigenous to Siberia (in Western Asia) and other parts of Asia Minor and Eastern Europe, including the area between the Baltic Sea and

the Caucasus. The Romans ate turnips, as did lower classes in Europe during the Middle Ages. Finally, Americans who came from Europe, mostly France, brought them to this country in the seventeenth century. However, the colonists didn't use turnips so much in that century and they became widespread only in the 18th century. In 1609, they were planted in Virginia and in 1622 they were grown in Massachusetts. Turnips arrived in Canada, though, in 1541, planted by Jacques Cartier[18]. In Ireland, turnips used to be seen as objects that could ward off demons and devils, and this is where the first Jack-o-Lanterns came from. They were hollowed out and a burning ember was inserted, which now is what we do with pumpkins on Halloween. In many parts of Asia, turnips are eaten after being pickled (soaked in brine). Japanese people use raw turnips as decorations, carving designs into them. Not many families in the Northern United States use them for crops in home gardens today, since the turnip on its own is a rather bland-tasting food that doesn't contain much fiber, but in Europe and Canada they seem to be more popular.

Researchers in the 18th century discovered that turnips roots could be used as a great source of energy for livestock. Farmers during that time, though, were not interested in a plant that required so much manual labor. The difference was shown to be very drastic, and "one study showed that the labor requirement on a nutrient basis for these crops was three times that needed for corn silage production"[19]. Still, in 1730 Charles Townshend, an English politician and "land improver"[20] developed a system that rotated turnips and grain crops. These crops were used for their high protein fat and ability to grow in various climates and seasons to fatten cattle in Winter and Fall. Consequently, this revelation led to the adoption of the inventor's nickname, "Turnip Townshend." However, it wasn't until the late 1970s that turnip started to be used as pasture for grazing animals. Therefore, today, many farmers around the world grow turnips mostly for animal consumption, and the majority of growth for human consumption comes from the Southern United States.

## Culinary, Medicinal, and Ritual Significance

Since turnips were at one point in American history fed to slaves because they were so cheap to grow, the reference to turnips by many people today as "soul food" implies some amount of discrimination. In many of the sources I encountered, it was mentioned that turnips were grown more today in the South, and since slavery was so prevalent in the South for longer than anywhere else in this country, the assumption is often made that African Americans are the biggest consumers of this food still to this day. The very presence of "soul food" cuisine is actually a stereotyped classification. The food has connotations of being cheap and easy to access, and its common association with a racial or ethnic group implies deep-rooted racism.

Writers in Ancient Greece and Rome called turnips food for, "the poorer classes and country folk," as they were "a filling food for country people."[21] The specification of this less expensive food as appropriate for a certain type of setting, i.e. rural farm towns and "the country" displays class-based prejudice.

However, the turnip is considered medicinally beneficial to people of all classes and geographical settings. The plant is thought to be good for the stomach and able to relieve

constipation. The more turnips are cooked, the less likely they are to lead to indigestion, flatulence, and swelling. This is common to many vegetables. The less raw a vegetable is when it is consumed, the less chance there is for its consumers to have digestive issues with the food.

## The Turnip in Early 19th Century America

The turnip has been used to feed people since prehistoric times, and the period of the 19th Century was no exception. What I read about the cultivation of turnips in the United States in 1801 is similar to the current instructions I encountered. In one instance, the following cultivation is recommended to Americans growing turnips in the 1800s:

Two bushels of Plaister of Paris should be applied to each acre of Turnips. The turnips should be drilled and then compost should be added to the garden. The particular variety highlighted in this account by Richard Parkinson is Turnip-Fallows. The author recommends that the soil on the land be prepared for its crops by a fallow (a period of time when an area is plowed but left unseeded during a growing season), and Turnips were used in the first year of planting before being pared and burnt and the ground used for Barley and Clover feed the next year. To Parkinson, turnips were a more efficient crop than potatoes, and they were cheaper to cultivate as well.

In 1801, Parkinson claimed turnips were not used to feed livestock in America. However, he proposed Americans do so. Turnips used for feed were sown by the first week in August.[22]

The consumption of vegetables and growing of different vegetable varieties was not practiced in all households in 1812. In fact, even by the 1830s the idea of vegetables as a culinary interest was still somewhat of a new idea. Many families found out too late they were eating too much meat, but those who fortunately varied their diets grew and ate vegetables including the Early Blood Turnip Beet.[23]

An 1816 Catalogue of Kitchen-Garden, Field, and Flower-Seeds, and Plants includes the following varieties of turnips for sale: Long, Yellow, Stone, Tankard, Norfolk Field, Russia, and Swedish. This document advocates April and May as the appropriate time for sowing early crops and all the summer months for succeeding crops.[24]

The Early Dutch Turnip is advertised for sale in an 1809 Trenton, New Jersey newspaper.[25].

## Final Facts About Turnips

The town of Eastham, Massachusetts sponsors the Eastham Turnip Festival, an annual event encompassing a Turnip Cook-Off, Turnip Bowling, Turnip Shucking Contest, and Crowning of the Annual Turnip Queen[26]. Festival-goers share art and recipes at this gathering,

which a man by the name of Geoffrey Antoine attended for the first time in 2005. Antoine heard an advertisement for the turnip recipe contest on the radio, and ended up winning for a turnip pie he successfully baked after many woeful tries. Antione, along with others who are familiar with Eastham turnips, believe this particular variety is rare and there isn't any other turnip like it.[27]

[1] Image available at: http://www.hort.purdue.edu/ext/senior/vegetabl/turnip1.htm

[2] Selsam, Millicent E. and Jerome Wexler. The Carrot and Other Root Vegetables. Morrow Junior Books: New York, 1971.

[3] http://www.vplants.org/plants/species/species.jsp?gid=5442

[4] Turnip and Its Hybrid Offspring. Available http://plantanswers.tamu.edu/publications/vegetabletravelers/turnip.html 27 January 2008.

[5] The Oxford Encyclopedia of Food and Drink in America. New York: Oxford University Press, 2004: page 565.

[6] Hirst, Gillian. "Turnip Patch." The Courier Mail [Australia] 01 Aug 2006: Good Life 35.

[7] The Cambridge World History of Food. New York: Cambridge University Press, 2000: page 294.

[8] The Oxford Encyclopedia of Food and Drink in America. New York: Oxford University Press, 2004: page 565.

[9] The Cambridge World History of Food. New York: Cambridge University Press, 2000: page 295.

[10] http://www.nal.usda.gov/fnic/foodcomp/search/

[11] Golub, Catherine. “Be Thankful for Turnips: November Nutrition.” Environmental Nutrition Nov 2007: 8.

[12] Golub, Catherine. “Be Thankful for Turnips: November Nutrition.” Environmental Nutrition Nov 2007: 8.

[13] http://www.hort.purdue.edu/newcrop/afcm/turnip.html

[14] Pleasant, Barbara. “Triumphant Turnips.” Mother Earth News. October/November 2007: pages 107-109.

[15] http://www.uga.edu/vegetable/turnip.html

[16] Klein, Carol. “How to be a gourmet gardener;…”. Daily Mail [London] 19 May 2007: Weekend 90.

[17] The Cambridge World History of Food. New York: Cambridge University Press, 2000: page 294.

[18] Turnip and Its Hybrid Offspring. Available http://plantanswers.tamu.edu/publications/vegetabletravelers/turnip.html 27 January 2008.

[19] http://www.hort.purdue.edu/newcrop/afcm/turnip.html

[20] The Oxford Encyclopedia of Food and Drink in America. New York: Oxford University Press, 2004: page 565.

[21] The Cambridge World History of Food. New York: Cambridge University Press, 2000: page 294.

[22] Parkinson, Richard. "Of turnip & pea fallows, with a design of a rotation of crops, recommended to the farmers and planters of the United States of America." Washington Printed by Charles Cist, 1801. From Early American Imprints, Series 2, no. 1093.

[23] White, Christie. "Documenting and Interpreting Early 19th-Century Rural Gardens at Old Sturbridge Village." OSV Research Paper, available http://www.osv.org/explore_learn/document_viewer.php?DocID=747 08 March 2008.

[24] "A Catalogue of Kitchen-Garden, Field, and Flower-Seeds, Plants,… for sale by S. Grundy." Document available from Early American Imprints Series 2, #37764 (1816).

[25] "Advertisements." The True American [Trenton] 27 March 1809 (Volume IX, Issue 421): 4.

[26] "Eastham Turnip Festival." Available http://www.easthamchamber.com/Activities.cfm 31 March 2008.

[27] Clark, Edie. "The Turnip King." Yankee. Jan/Feb 2008: 76-77.

## Works Cited

"A Catalogue of Kitchen-Garden, Field, and Flower-Seeds, Plants,… for sale by S. Grundy." Document available from Early American Imprints Series 2, #37764 (1816).

"Advertisements." The True American [Trenton] 27 March 1809 (Volume IX, Issue 421): 4.

"Brassica Rapa" available http://www.vplants.org/plants/species/species.jsp?gid=5442 21 April 2008.

Clark, Edie. "The Turnip King." Yankee. Jan/Feb 2008: 76-77.

"Eastham Turnip Festival." Available http://www.easthamchamber.com/Activities.cfm 31 March 2008.

Golub, Catherine. "Be Thankful for Turnips: November Nutrition." Environmental Nutrition Nov 2007: 8.

Hirst, Gillian. "Turnip Patch." The Courier Mail [Australia] 01 Aug 2006: Good Life 35.

Image available at http://home.howstuffworks.com/turnips.htm (21 April 2008).

Image available at http://straightfromthefarm.wordpress.com/2007/06/20/roasted-vegetable-medley/ (21 April 2008).

Klein, Carol. "How to be a gourmet gardener;…". Daily Mail [London] 19 May 2007: Weekend 90.

Nutrient Data Laboratory. "Search the USDA National Nutrient database for Standard Reference." Available http://www.nal.usda.gov/fnic/foodcomp/search/ 21 April 2008.

Parkinson, Richard. "Of turnip & pea fallows, with a design of a rotation of crops, recommended to the farmers and planters of the United States of America." Washington Printed by Charles Cist, 1801. From Early American Imprints, Series 2, no. 1093.

Pleasant, Barbara. "Triumphant Turnips." Mother Earth News. October/November 2007: pages 107-109.

Selsam, Millicent E. and Jerome Wexler. The Carrot and Other Root Vegetables. Morrow Junior Books: New York, 1971.

The Cambridge World History of Food. New York: Cambridge University Press, 2000.

The Oxford Encyclopedia of Food and Drink in America. New York: Oxford University Press, 2004.

"Turnip" Available http://www.hort.purdue.edu/newcrop/afcm/turnip.html 21 April 2008.

Turnip and Its Hybrid Offspring. Available http://plantanswers.tamu.edu/publications/vegetabletravelers/turnip.html 27 January 2008.

"Turnip: Brassica rapa" Available http://www.uga.edu/vegetable/turnip.html 21 April 2008.

White, Christie. "Documenting and Interpreting Early 19th-Century Rural Gardens at Old Sturbridge Village." OSV Research Paper, available http://www.osv.org/explore_learn/document_viewer.php?DocID=747 08 March 2008.