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Celery: A Brief History

The month of November brings with it Thanksgiving and memories of the (usually) hectic preparation of the traditional Thanksgiving dinner. The aroma of celery busily being diced is one of those memories for most people. Although turkey, pumpkin pie, candied sweet potatoes and cranberry sauce might dominate the Thanksgiving meal, it simply is not complete without celery to add flavor to the dressing or crunch to a salad.

Unlike turkey, pumpkin, sweet potato and cranberry, celery is not native to the Americas and was not present at the first Thanksgiving feast. As a matter of fact, it was not until the early 1800's that celery found its way into American gardens. Today, however, it ranks as one of our most popular vegetables and is used in many ways throughout the year.

Celery (*Apium graveolens* var. *dulce*) is a member of the *Umbelliferae* or parsley family. Additional familiar vegetables in this family include carrot, parsley and parsnip. Celery's common name comes from the French word *celeri* and the Italian *seleri*. Both were derived from the Greek word *selinon*, meaning parsley. Indeed, in Homer's *Odyssey* reference is made to selinon.

The parent to our modern celery is believed to have originated in the Mediterranean region of Europe and was used by early civilizations for the medicinal properties they thought it contained. Medieval books on herbal remedies suggested using celery for controlling hysteria, soothing nerves, and promoting restful sleep. Even though the presumed medicinal properties of celery have been disproven, it still is considered a "health food" (of sorts) because of its low caloric value and significant fiber content.

Celery was probably first used as a food by the French around 1623. For about the next century its use was confined to flavoring because of the pungency of early types. The late 17th and early 18th century saw

improvements of the wild types of celery making its stalks (petioles) better for use in salads. Gardeners also found that growing celery during cooler parts of the year tended to reduce its pungency.

By the middle part of the 18th century celery stored in cellars was enjoyed by the more affluent people of northern Europe during the winter. Its use as a food spread rapidly after that time. It most likely was introduced to America by the colonists and, by 1806, four cultivated varieties were listed. In the United States today, the variety 'Pascal' dominates commercial production.

Celery is a biennial plant. This means it produces lush, leafy growth the first year, goes dormant during the winter, and flowers and bears seeds the second year. As a vegetable crop, it is grown for only the first year until plants are large enough to harvest. In Missouri, celery is planted early in the spring as soon as the soil is workable. Since celery is susceptible to damage by late spring frosts, hot caps or floating row covers may be necessary to protect it. Plants should be spaced seven inches apart within rows that are 24 inches apart. Started plants can be purchased from retail outlets or gardeners can grow their

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own transplants from seeds planted indoors or in cold frames.

Celery grows best where temperatures are cool and soils are deep and fertile. Unless soil has an inherently high organic matter content (a rare occurrence in Missouri), the addition of about three to four bushels of compost or well-decomposed manure to each 100 square feet of garden area is recommended for celery production. Organic matter should be incorporated thoroughly into the soil to a depth of about eight inches.

Celery also needs plenty of moisture. This especially is true when it is grown in warmer areas such as Missouri. Moisture supply must be constant although soil drainage must be good at the same time. The ability to irrigate celery during time of drought stress is very important, even when the stress lasts only a few days.

As with other vegetables, celery requires adequate nutrition. When preparing soil for planting celery a general purpose garden fertilizer should be incorporated. Two to three pounds of 12-12-12 per 100 square feet of garden should suffice. Additional side-dressing with nitrogen several times during the growing season also is necessary to promote vigorous growth.

Insect pests of celery include aphids, armyworms, flea beetles, leaf hoppers and cabbage loopers. Common diseases include root rot, pink rot, early and late blight, bacterial blight, asters yellows, and fusarium yellows, along with several virus diseases vectored by leaf hoppers. Good soil drainage along with strict sanitation and leaf hopper control helps greatly to prevent diseases from occurring.

Newer varieties of celery are fairly upright in their growth habit and another procedure in celery production

is known as blanching. The latter helps to reduce the green color (chlorophyll) in the stems which results in superior quality. Blanching can be accomplished simply by tying the tops of the stems together or covering the plants with a cylinder formed out of several sheets of newspaper. Yet a third method involves placing boards supported by stakes on either side of the row, covering the stems. With any method, blanching usually requires 10 to 14 days.

Celery is considered ready for harvest when its stalks are at least six inches in length between soil line and first node. Given its high water content, it should be refrigerated immediately after harvest and kept at a relative humidity of 95%. Plastic bags can help to accommodate the latter.

Since celery contains only 18 calories per serving of 110 grams (3.9 ounces), it has long been considered a "diet food" whose consumption imparts a feeling of "fullness" without ingesting a significant number of calories. While this may be true, it does not give celery the credit it deserves as a source of essential nutrients. That same 110 grams can supply as much as 44 percent of the average adult's minimum daily requirement of vitamin K as well as 10 percent of the vitamin A and 6 percent of the vitamin C requirement. Celery also serves as a good source of riboflavin, vitamin B6, pantothenic acid, calcium, magnesium and phosphorus.

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Primocane-Fruiting Black Raspberries May Be Coming Back!

Primocane-fruiting (PF) is the ability of bramble plants to produce fruit on the tips of first year canes. The PF trait was recognized in red raspberry plants over 200 years ago. In the last 50 years, PF red raspberry cultivars such as 'Heritage', 'Autumn Bliss', 'Amity', 'Summit', and 'Caroline' have become popular for home and commercial fruit production. The more recent releases of 'Prime-Jim', 'Prime-Jan', and 'Prime-Ark-45' PF blackberries has allowed season extension of fruit using new production systems. In fact, PF berry plants have significantly changed worldwide production and the availability of these fruits to consumers year-round.

The PF trait also occurs in black raspberry. The first

black raspberry cultivar, 'Ohio Everbearer' was selected from a wild plant growing near the shore of Lake Erie and was released in 1832. By 1920, at least 19 other cultivars were named, including 'Grigg's Daily Bearing', 'Miller's Daily Bearing', and 'Lum's Autumn Black'. Because most of these cultivars produced small poor quality fruit, they fell out of favor until 1973 when 'Black Knight' was introduced.

Over time, PF black raspberry germplasm was lost until a recent renewed interest in studying this trait. The most recently released PF cultivar is 'Explorer', but it is

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limited by poor pollen fertility. However, the release of this cultivar has rekindled the collection and evaluation of wild black raspberry germplasm throughout the United States. Because some plants erratically produce primocane fruit on the tips of some branches of all or just a few branches on plant canes, thorough evaluation of germplasm is necessary. Also, some plants express PF in some, but not all years. As with red raspberry and blackberry, environment may also affect the expression of PF in black raspberry. Currently, the USDA-ARS/Oregon State University cooperative breeding program and a private breeding program in Longmont, Colorado are leading the effort to find cultivars that strongly express the PF trait. One of the most advanced selections, PT-2A4 is in trial at several locations across the U.S. and purportedly produces larger fruit with smaller seeds than that of 'Explorer'. Also, experiments are in progress to determine if cane tipping (to produce more branching and delay harvest) is advantageous and to evaluate disease susceptibility of plants. Until a modern, promising PF black raspberry cultivar is released, the older summer fruiting cultivars are com-

mercially available such as 'Black Hawk', 'Jewel', 'Bristol', 'Munger', and 'Mac Black'. Cultivars with anthracnose resistance ('Black Hawk' and 'Jewel') most likely perform better than others during rainy growing seasons. While the flavor of these black raspberries is unique, fruit size remains small when grown in Missouri and plants growth may be suppressed due to warm summer temperatures. The rediscovery of black raspberry and renewed interest in breeding for this trait promises to rejuvenate the culture of this crop. As improved cultivars are released and production acreage is expanded, it may be possible for consumers to purchase delectable black raspberries at local grocery stores throughout the year.

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One Crazy November Day

For many climate enthusiasts, November 11, 1911 is a date that generates much interest in regard to the extreme weather conditions that were experienced that day in Missouri and surrounding states. During sunrise, on 11/11/11, temperatures were unseasonably warm and had already climbed into the lower 70's across mid-Missouri. A southerly breeze had increased to 25-30 mph by noon as the mercury climbed into the lower 80's. By early afternoon, record high temperatures were broken in several locations including Kansas City, Springfield, Hannibal, Columbia and St. Louis.

Many people were outside enjoying the warm conditions including several hunters who had walked miles from home wearing only lightweight clothing. Unknown to many early that afternoon was that an arctic cold front had entered northwestern Missouri and was diving southeastward. Eyewitness reports that day describe the arctic boundary as a rapidly moving dark boiling mass of clouds accompanied by lightning, thunder, rain, hail that eventually turned to sleet and snow. Some of the hunters, unaware of the impending cold blast, were caught out in the elements and perished.

Hourly wind reports from the Columbia weather service office reported a southerly wind gusting to near 40 mph at 2 p.m. shifting to northerly winds gusting to over

40 mph about an hour later. The temperature in Columbia reacted to the wind shift and dropped from a toasty 82° at 2 p.m. to a cold, rainy and windy 38°F one hour later; an incredible 42° temperature drop in 60 minutes! One hour later the temperature was 30° in Columbia and the rain had changed to sleet with a wind chill of 16°. By midnight it was a frigid 13°, which set a record low for the day. In one day the temperature fell a whopping 69°, a record that still stands today for Columbia.

On November 11, 1911, many locations in Missouri established a record in terms of the largest daily temperature swing and this remarkable occurrence remains unprecedented today. Generally, for Missouri, the temperature drop was 50° in less than 3 hours and 65-70° in 18 hours. Maximum and minimum temperatures for some Missouri locations on 11/11/11 include Kansas City, 76°/11°; Springfield, 80°/13°; Columbia, 82°/13°; Hannibal, 82°/16°; and St. Louis, 78°/18°.

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December Gardening Calendar

Houseplants

- **Weeks 1-4:** Water houseplants with tepid water. Cold tap water may shock plants.
- **Weeks 1-4:** Be sure newly purchased indoor plants are well protected for the trip home. Exposure to icy temperatures for even a few moments may cause injury.
- **Weeks 1-4:** Overwintering geraniums like bright light and cool temperatures. Keep soils on the dry side.
- **Weeks 1-4:** On cold nights, move houseplants back from icy windows to prevent chilling injury.
- **Weeks 2-4:** Holiday poinsettia plants do best with sun for at least half the day and night temperatures in the 50's or 60's. Keep plants away from drafts, registers and radiators and let the soil should dry only slightly between thorough waterings. Be sure to punch holes in decorative foil wraps to prevent soggy soil conditions.
- **Weeks 1-4:** Hairspray works well to keep seed heads and dried flowers intact on wreaths and arrangements.
- **Weeks 1-4:** If you plan to have a live Christmas tree, dig the planting hole before the ground freezes. Mulch and cover the backfill soil and the planting hole to keep them dry and unfrozen. When you get the tree, store it outdoors in a cool, shady, windless area until the last minute and mulch the roots to prevent cold injury. Don't allow the tree's roots to become dry and spray the needles with an anti-transpirant to reduce moisture loss. Set the tree up in your coolest room. Don't keep the tree indoors for more than one week and plant outdoors promptly.
- **Weeks 1-4:** Be sure the root zones of azaleas and rhododendrons are thoroughly mulched. Any organic material will do, but mulches made from oak leaves, shredded oak bark, or pine needles are preferred.
- **Weeks 2-4:** Christmas trees hold needles longer if you make a clean, fresh cut at the base and always keep the trunk standing in water.
- **Weeks 2-4:** Only female holly trees bear the colorful berries. There must be a male tree growing nearby for pollination, if fruits are desired.
- **Weeks 2-4:** Hollies may be trimmed now and the prunings used in holiday decorations.

Miscellaneous

- **Week 1:** Apply mulches to bulbs, perennials and other small plants once the ground freezes.
- **Week 1:** All power equipment should be winterized before storage. Change the oil and lubricate moving parts. Either drain fuel systems or mix a gas stabilizing additive into the tank.
- **Week 1:** Clean and oil all garden hand tools before storing for winter.
- **Week 1:** If you feed rabbits corn or alfalfa, they may leave fruit tree bark unharmed.

Gardening Calendar supplied by the staff of the William T. Kemper Center for Home Gardening located at the Missouri Botanical Garden in St. Louis, Missouri. (www.GardeningHelp.org)