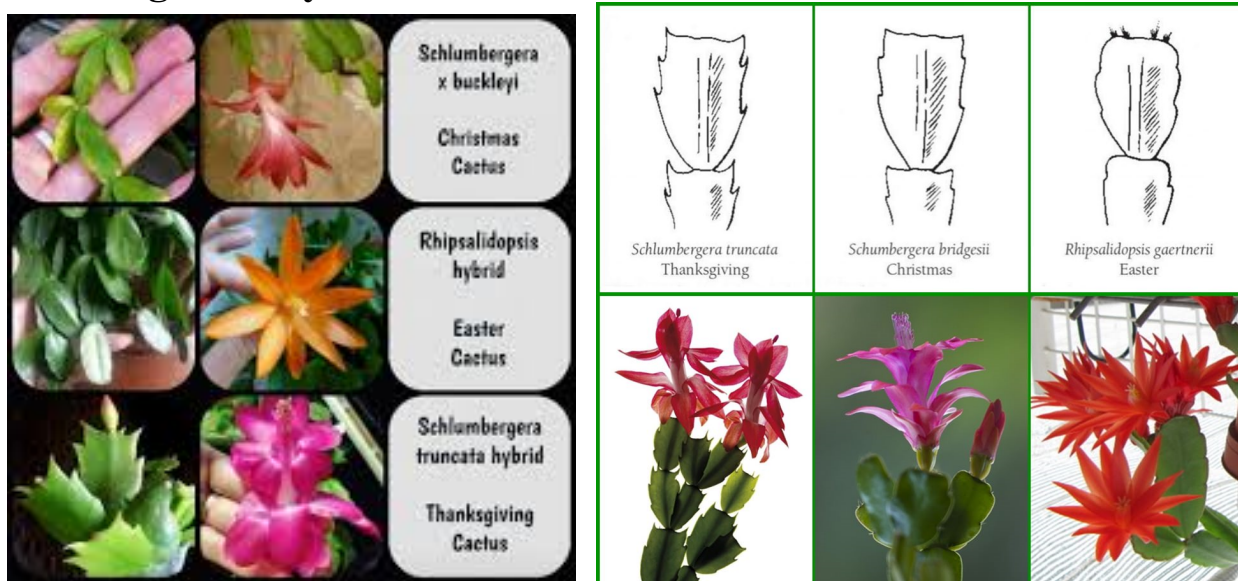


## OSU Extension - Auglaize County Weekly Horticulture Newsletter – 12-6-19

### Growing Holiday Cacti



With Christmas right around the corner you may be interested in purchasing a beautiful flowering Christmas cactus for someone. There are actually three different holiday cacti, Thanksgiving (*Schlumbergera truncata*), Christmas (*Schlumbergera bridgesii*) and Easter (*Rhipsalidopsis gaertnerii*). Holiday cacti have no leaves just stem segments. The Thanksgiving cactus has two to four sawtoothed stem margins pointing upwards, the Christmas cactus have two to four stem margins more rounded, and the Easter cactus has four to six rippled stem margins and brownish hair-like bristles at the stem tips. Thanksgiving cacti flower from Thanksgiving to Christmas and has the greatest variation in flower color. The Christmas cacti flower from late December to March having rosy-red flowers. The Easter Cacti flower from March thru May having pink or red flowers. Holiday cacti are native to Brazil. They grow among tree branches in shady rain forests.

Holiday cacti are relatively easy to grow. If purchasing new plants keep the potting media evenly moist to encourage additional flowers. Holiday cacti need more water than most cacti, but do not saturate the potting media! Water plants when the potting media is dry to the touch. Fertilize plants monthly from the time new growth starts in late winter and until August with a 20-10-20 or 20-20-20 soluble fertilizer at half strength. Holiday cacti require high levels of magnesium during the growth phase so apply magnesium monthly by applying Epsom salt at one teaspoon per gallon of water, although not the same week as the other fertilizer. Keep plants near 68 degrees F when flowering to encourage additional flowers. Plants can be grown between

70 and 80 degrees F during the growth phase. Keep plants in full sun during the fall and winter. During the summer months keep the plants in partial shade, especially if placed outside to grow. Pinch back the stems in early June to promote branching and to have more terminals for production of flowers.

To get a cactus to flower next year involves temperature or light. Plants must be held at a nighttime temperature of 50 to 55 degrees Fahrenheit for six to eight consecutive weeks prior to when you want them to flower. If placing outside during the night do not let the temperature get below 40 degrees. Place the cactus in 65 to 70 degree F temperatures during the day. The other method involves light. Place plants in a dark area or room for a period of 14 hours each day and allow plants to be in bright to medium sun for the other 10 hours of the day. It is extremely important when using the light method to get the full amount of 14 hours of darkness that is uninterrupted. Just a shimmer of light one time during the six to eight week period will stop the plant from flowering. Individual plants do vary in the requirements to flower. It is possible to get some flowers doing nothing, but they will be few and most plants will not flower on their own. Enjoy these beautiful flowering cacti for years to come.

## Local Observations

Good afternoon! I pray you are well! Rainy week!

It rained 5 days this past week, but only three were mostly measurable. Rainfall on Friday, November 29<sup>th</sup>, ranged from a Trace at about 1 miles north of St. Marys, at about 6 miles northwest of St. Marys, and at Kettlersville and Santa Fe – New Knoxville Roads to 0.08” at about 3 miles west of St. Marys. Rainfall on Saturday ranged from 0.1” near Bloody Bridge, at about 6 miles northwest of St. Marys, and at about 5 miles east of New Hampshire to 0.3” at about 1 mile northeast of Fryburg. Rainfall on Sunday ranged from a Trace at about 3 miles west of St. Marys to 0.2” at about 5 miles east of Waynesfield. Rainfall for the week ranged from 0.12” near Bloody Bridge to 0.4” at about 1 mile northeast of Fryburg. The average rainfall for the week was 0.26”. Temperatures were nearly equally above and below normal for the week.

On Sunday, I cleaned up my garden for the winter.

## VegNet

No news this week

## BYGL

No news this week.

## Other Articles

### Weeping Nootka Cypress Is a Dramatically Droopy Evergreen

December 4, 2019 | [Meghan Shinn](#)

Source: <https://www.hortmag.com/plants/plants-we-love/weeping-nootka-cypress-is-a-dramatically-droopy-evergreen>



**Virtues:** The weeping Nootka cypress (*Cupressus nootkatensis* ‘Pendula’) is an evergreen tree with lots of personality, thanks to its draping, drooping branches that would fit right into a Dr. Seuss book. This award-winning conifer makes a dramatic addition to the garden where it can add valuable winter interest.

**Common name:** Weeping Nootka cypress, Weeping yellow Alaska cedar

**Botanical name:** This tree can be found listed as *Cupressus nootkatensis* ‘Pendula’; *Chamaecyparis nootkatensis* ‘Pendula’; and *Xanthocyparis nootkatensis* ‘Pendula’. Read about the dispute over this plant’s name at the American Conifer Society. <https://conifersociety.org/conifers/cupressus-nootkatensis-pendula/>

**Exposure:** Full to part sun

**Season:** Year-round for foliage and form

**Foliage:** The needles range from light green to dark gray-green depending on their maturity. The variety of colors highlights the tree’s form.

**Habit:** As its name suggests, weeping Nootka cypress has a gently weeping form, with its evergreen branches that dip and swoop downward off its upright trunk. It can slowly reach a height of 25 feet or taller and a width of 12 to 15 feet at the base. Its branches taper toward the top of the tree, creating a pyramidal shape.

**Origins:** ‘Pendula’ is a variety of *Cupressus nootkatensis*, a species native to streams and ravines of southeastern Alaska south down the coast through Canada and the US Pacific Northwest into northern California.

**How to grow weeping Nootka cypress:** Site this conifer in full to part sun in neutral to acidic soil with good fertility and drainage. It does best with regular moisture but once it is established it can cope with dry spells. USDA Zones 4–8.

*University of Cordoba – partnered with USDA*

## **New gene identified for strawberry fruiting times**

Source: <https://www.hortidaily.com/article/9170293/new-gene-identified-for-strawberry-fruiting-times/>

The world market for strawberries, rich in antioxidants and vitamin C, exceeded 9 mln tons in 2016. According to the latest report by the UN's Food and Agriculture Organization (FAO), Spain is the top producer of this food within the European Union, while China and the US are the largest producers worldwide.

A University of Cordoba research group, in partnership with the USDA, identified a new gene involved in the fruiting duration of this fruit. As explained by the researcher leading the project at UCO, Patricia Castro, there are some strawberry genotypes that produce fruit just once a year, whereas others bear fruit several times over a longer period of time, hence their strawberry production cycle is longer. Understanding how this trait is regulated and inherited is key to increasing efficiency in improvement programs.

This research, published in BMC Plant Biology, specifically studied the genetic mechanisms in charge of making some strawberry varieties produce fruit over a longer period of time. In order to do so, they crossed different strawberry genotypes and analyzed how to segregate this trait in their offspring. In addition, they characterized all the genotypes with molecular markers associated with this trait.

Up to now, as pointed out by researcher Patricia Castro, it was thought that there was only one gene in charge of a longer strawberry fruiting period. Now, and in view of the results, the study concluded that, besides that gene, there is at least one other gene involved in the process.



Though this DNA sequence has not been isolated yet (to do so performing a later study would be necessary), the research was able to determine which gene acts as the suppressor, as in which gene suppresses the ability for the plant to fruit for a longer time. "We observed that some of the families we analyzed have a molecular profile corresponding to genotypes of longer fruiting periods, but only bear fruit once due to the involvement of this gene," points out Castro.

### **A new opportunity for genetic improvement**

Having demonstrated that there is more than one gene involved in the fruiting process of strawberry plants means "that the way we approach genetic improvement will change," says Patricia Castro. For now, the finding gives greater insight into the fruiting mechanism of one of the world's most popular berries but there is still a long way to go. New molecular markers must be developed that allow for the identification of desired traits in plant material and thus strawberry varieties can be developed more efficiently.

According to [phys.org](http://phys.org), the aim is to lengthen the production period and markets of this popular fruit that used to be a sign of spring starting but is now more and more commonly eaten all year round.

## **"Why CRISPR is so incredibly necessary"**

Source: <https://www.hortidaily.com/article/9168905/why-crispr-is-so-incredibly-necessary/>

Cultivated potato (*Solanum tuberosum*) is a tough nut to crack in terms of plant breeding. It is a tetraploid crop, which means it has four sets of chromosomes and it is largely a heterozygous crop, which makes potato research and breeding through traditional crossbreeding a huge challenge. But help is on the way: by specific applications of genome editing, one or a few traits can be added to a commercial potato variety, hence the time-consuming and costly crossbreeding can be avoided. In recent years, genome editing through either TALEN or CRISPR-Cas9 has been used to study and develop commercially important traits in potato and these are traits which would otherwise be very difficult and time consuming to include through traditional breeding technologies.

Now, before going into the benefits, first this: regular potato starch contains two types of molecules: amylopectin (approx. 80 per cent) and amylose (approx. 20 per cent). And it is the mix of these two and the resulting problems of starch retrogradation, that blocks optimal utilization of these two different polymers. Till now, to deal with this, the native starch needs to be chemically modified.

**No foreign DNA**

In the Swedish CRISPR Potato Starch project, amylopectin starch potatoes were developed by eliminating the amylose formation by knocking out the sole enzyme responsible for synthesis of amylose. This was done with the help of CRISPR (Clustered regularly interspaced short palindromic repeats) and CRISPR-associated protein-9 (CRISPR-Cas9). The beauty of this project is that transgene-free genome edited plants have been produced using the technique. For potato, a system that is yielding no foreign DNA integration would clearly be the preferred method, because it would allow the plant breeder to avoid any crossbreeding of this highly heterozygous tetraploid crop, which in addition could also result in inbreeding depression.

European Seed has reported on plant breeding innovation on many occasions in the recent past, with their tombstone cover (Oct. 2018) as a strong reminder of the dire straits they consider Europe to be in as a continent. To learn more about this project, they asked Hans Berggren from the Lyckeby Starch company and Mariette Andersson from the Swedish University of Agricultural Sciences for their take on their achievements.

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