

OSU Extension - Auglaize County Weekly Horticulture Newsletter – 11-1-19

Why are the Evergreen Needles Falling?

The term “evergreen” is not exactly accurate when describing conifer trees. The needles of conifer trees do not stay on the trees for the life of the tree. It is normal for some of the needles to turn yellow or brown and fall from the tree in the autumn. This process is called fall needle drop. Some of the oldest (innermost) needles eventually drop from the trees of pine, spruce, and fir. The eastern white pine trees lost their needles a few weeks ago. This discoloration can be alarming as some individuals think a disease is suddenly occurring.

Seasonal needle loss is especially striking on bald cypress and larch trees. For these species all of the needles turn brown or reddish in color and drop from the tree. Some individuals have been known to remove such trees as they believe they have died from a rapid disease.

Environmental stresses, such as drought and hot temperatures and excessive moisture, may cause greater-than-normal loss of needles. The usual pattern of seasonal needle loss is a gradual discoloration and eventual loss of the inner needles from the top to the bottom of the tree. In contrast, fungal diseases often cause browning of the newer (outermost) needles, death of branches, or thinning of the needles on just the lower branches. Two common needle diseases of spruce cause death of the oldest needles, not the youngest needles. Knowing what is normal for landscape plants at different times of the year is the first step in diagnosing possible problems.

Fall weed management

The fall is a great time to control winter annual, biennial, and perennial weed species around the landscape. Some key species include Canada thistle, poison hemlock, wild carrot, and many more. The cool temperatures and shorter day length trigger plants to send nutrients down to the plant structures that make them perennials. Perennial plant structures include rhizomes, creeping roots, bulbs, tubers, and corms. These structures store energy for the plant to produce shoots for next year. If herbicides are applied at this time of the year, the herbicides travel with the nutrients killing next year's plants.

Frost and a light freeze has already occurred, so apply herbicides at any point in time. Apply the herbicides in as warm and sunny conditions as possible for 2 days before and after the application. Try to apply the herbicides when temperatures are above 50 degrees F for the day, however spraying can still occur at temperatures as low as 35 degrees F. Spraying at cooler than desired temperatures usually does not decrease

control too much, but can. Spraying at cold temperatures will certainly slow down the activity of the herbicide. For weeds that should be controlled in the fall, spraying at cooler than normal temperatures is still usually more effective than waiting until the spring to apply the herbicides. Fall herbicide applications are the only way to ensure no seeds will be produced on winter annual weeds, because seeds may be produced by late winter!

For non-crop areas apply glyphosate at 1.125 to 1.5 pounds acid equivalent per acre (32 to 44 fluid ounces per acre of a Roundup branded product). For spraying small non-crop areas, add a glyphosate product at three to four fluid ounces per gallon of water. For areas where grass vegetation is desired, but weeds are still present, a combination of 2,4-D ester (1 quart per acre) plus dicamba (Clarity/Banvel) (1 pt/A) should control most broadleaf species. One species that will likely not be controlled by this combination is common chickweed. For spraying small areas add 2,4-D ester (4.0 pounds active ingredient per gallon) at 1.6 fluid ounces per gallon of water and dicamba at 0.8 fluid ounces per gallon of water.

Local Observations



Fall foliage from the Great Wall of China this past week

Good Evening! I pray you are well! What a weather week! Lots of rain and a killing freeze and some snow!

It rained 3 days this past week. Rainfall on Saturday, October 26th, ranged from 0.64" at Wapak-Fisher and Townline-Lima roads to 1.5" at about 5 miles northwest of St. Marys. Rainfall on Wednesday ranged from 0.7" at about 1 mile north of St. Marys to 1.3" at about 5 miles northwest of St. Marys. Rainfall on Thursday ranged from 0.06" at Santa Fe-New Knoxville and Kettlersville Roads to 0.7" at about 5 miles northwest of St. Marys. Rainfall for the week ranged from 1.73" at Santa Fe-New Knoxville and Kettlersville Roads to 3.5" at about 5 miles northwest of St. Marys. The average for the week was 2.45". October's rainfall ranged from 2.35" at about 2 miles southeast of Fryburg to 4.4" at about 3 miles west of St. Marys. The monthly average was 3.49". The year to date average is 44.10", which is 7.1" above normal. Temperatures were above normal and below normal this past week.

The garden is done and I have not checked the bees since I returned home.

VegNet

No news this week

BYGL

No news this week

Other Articles

Complex potato genome further unveiled

by [Wageningen University](#)

Source: <https://phys.org/news/2019-10-complex-potato-genome-unveiled.html>



Credit: Solynta

Scientists from Wageningen University & Research (WUR) and scale-up Solynta, the inventor of hybrid potato breeding, have published the most complete genome sequence for potatoes to date. A unique aspect is that both sequence and plant material are made available for research (under specific conditions). This may in the future result in a potato that is more resistant to heat or drought or has a greater resistance to diseases.

The potato is one of the most important food crops worldwide. Improvements to its traits can therefore have a major impact. Reading the genome structure of the potato is extremely tricky, however, as a regular potato consists of four genomes, which makes it difficult to determine the position of the genes. The recent research applied a diploid real potato plant with only one genome, a so-called homozygote, which makes it easier to read and compare the DNA base sequence. This plant, *Solyntus*, was produced as part of Solynta's hybrid potato breeding program.

[The genome sequence is available via: www.plantbreeding.wur.nl/Solyntus](http://www.plantbreeding.wur.nl/Solyntus)

From 125,000 to 185 segments

Richard Visser, professor at the department of Plant Breeding at WUR, is enthusiastic about the new sequence: "The previously available genome sequence, which I also helped establish,

consisted of approximately 125,000 small segments. The genome we are presenting now comprises 185 large segments. This is a significant improvement which was achieved via a combination of unique plant material and new sequencing and analysis techniques. While the previous sequence involved a wild variety of the potato, we have now used an actual potato plant. I hope—and expect—that our work will eventually lead to a more efficient and faster potato breeding process."

Solynta's R&D director Pim Lindhout is also pleased with the collaboration: "This concrete result of a public-private partnership proves that we can describe and cross-breed new properties faster together. Two years ago, we showed that we could make a potato plant that is disease-resistant within two years. This latest breakthrough means we can also explore and utilize other traits more quickly. I am convinced that this will lead to more sustainable potato production far sooner."

Faster and more focused breeding

Various research projects within WUR use both the plant and the sequence, enabling scientists to link experimental results to the genetic code. The very accurate genome sequence allows faster and more focused breeding, as it is easier to find in the DNA which cross-breeds with other varieties might be of interest, and where the exchange of genetic material between "father" and "mother" should ideally take place. This means scientists know at an early stage whether the potato has the desired traits, such as resistance to specific diseases.

"Jointless tomato has the potential to boost production"

Source: <https://www.hortidaily.com/article/9156624/jointless-tomato-has-the-potential-to-boost-production/>

The first jointless tomato variety has been announced in the Rijk Zwaan range. Last year, Santiana RZ was trialled on a small scale for the first time. This variety proved to be a nice open crop, making it easy to work with. Santiana produced a high fruit weight which it maintained all the way through to the end of the season. This year, in larger trials, the results until mid-August have been very positive.



'Very promising'

This year, Santiana is being trialled on a large scale at various sites in both the Netherlands and North America, including under artificial lighting. The results so far are very promising, according to Rijk Zwaan. "On the basis of the findings, Santiana RZ produces a higher fruit weight than the reference variety for large TOV tomatoes. It also performs well in terms of shelf life, and Santiana's nice red tomatoes with excellent green parts are visually eye-catching.

"It is a generative, open crop with horizontal leaves. The variety delivers nice trusses with evenly spaced fruit. The plant has sufficient strength and flower production to allow pruning to six fruits during some parts of the season. Santiana also responds well to increasing light; whereas some varieties struggle, it actually makes Santiana stronger."

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