Hello Northeast Ohio Counties!

We finally have had a week with some dryer weather at least here in Portage County. Crops are moving along. Earlier planted corn has been pollinated, beans are starting to set pods, double crop beans that were planted are well out of the ground, and a lot of hay has been made.

Check out this week's newsletter for an interesting read on stinkweed.

Have a great week!

Lee Beers  
Trumbull County Extension Educator

Andrew Holden  
Ashtabula County Extension Educator

Angie Arnold  
Portage County Extension Educator
Don’t Get Burned by Hopperburn - Check Alfalfa for Potato Leafhoppers

By: Andy Michel, Mark Sulc, Curtis Young, CCA, Kelly Tilmon


Potato leafhopper (PLH) adults arrived in Ohio during the last week of June and first week of July. Since then, the eggs have hatched and we are now seeing late stage nymphs and adults infesting alfalfa fields. A few fields are showing the typical “hopperburn”, which is a triangular yellowing from the center of the leaf to the leaf margin. The more mature the crop of alfalfa is since the last cutting, the more the hopperburn symptoms will be showing. Hopperburn will also become more pronounced in areas of the state that are short on rain or are predicted to become drier because the alfalfa will not be able to outgrow the feeding activity of PLH. Scouting now and making appropriate management decisions based on the scouting can help avoid serious damage to the crop.

Sweep netting is the best way to scout for PLH. If alfalfa is more than seven days from a cut and plants are under normal stress, a good rule of thumb for an action threshold for treatment is when the number of PLH (nymphs+adults) in a 10-sweep set is equal to or greater than the height of the alfalfa. For example, if the alfalfa is 10 inches tall, and the average number of PLH per sample is 10 or higher, treatment is warranted. If the average is nine or lower, the grower should come back within a few days to see if the population is continuing to increase (treatment warranted), staying the same (come back again in a few days), or declining (treatment not warranted). Vigorous alfalfa can tolerate higher

Figure 1 hopperburn on alfalfa. Photo credit: Curtis Young.
numbers, and stressed alfalfa can tolerate fewer, so you may need to adjust your action threshold based on the condition of the alfalfa. Keep in mind that an early cutting may also be an option.

For videos on potato leafhopper scouting and management see:

https://forages.osu.edu/video/scouting-potato-leafhopper-alfalfa

https://forages.osu.edu/video/potato-leafhopper-identification-and-damage-alfalfa

And our fact sheet: https://ohioline.osu.edu/factsheet/ENT-33

**Measuring Nitrogen in Green Manures**

By: Emily Matzke and CSSA Staff


Both chemical fertilizers and cover crops can help build the nitrogen content in soil. But cover crops come with many other benefits, like improving soil structure and boosting beneficial microbes.

Researchers at Cornell University are looking at ways to help breed better cover crops, also known as green manures, that could help farmers in their quest to grow crops in the most sustainable way. Their results were published in *Crop Science*, a publication of the *Crop Science Society of America*.

Katherine Muller and her team are working on strategies to measure nitrogen fixation in breeding programs for two common cover crops: crimson clover and hairy vetch. Both crops can pull nitrogen from the air to help them grow. This is called nitrogen fixation.

“Green manures are crops used to improve soil fertility,” says Muller. “They help the soil by adding nutrients. We look at legumes, which bring nitrogen into the soil due to their symbiotic relationship with bacteria.”
The use of legume green manures has been around for thousands of years. However, after the 1950s, chemical fertilizers became the main nitrogen source for farmers in developed countries. This is because two scientists, Haber and Bosch, found a way to pull nitrogen from the air, and make chemical fertilizer.

Though this type of fertilizer is productive, it also takes energy to make it – and it can easily slip into water bodies if not managed correctly.

“Cover crops are important ecological management tools,” says Muller. “They foster microbial communities and put nutrients in the soil. Essentially, they help build fertile soil that can supply nutrients when plants need them.”

The use of cover crops can be risky to farmers because they cannot determine the exact amount of nitrogen supplied to the soil. Chemical fertilizers allow for the exact calculation of the amount of nitrogen applied to a crop. But how much nitrogen is provided by each type of cover crop isn’t a known number.

The amount of nitrogen supplied by a legume cover crop depends on how well it grows and how much of its nitrogen comes from fixation versus uptake from soil. Currently, cover crop seeds available do not have selective breeding for nitrogen fixation – a valuable trait.

Plant breeders are working to develop cover crop varieties that reduce the risks and increase benefits to farmers. They hope that better varieties will increase the use of cover crops as an alternative to chemical fertilizer. Nitrogen fixation is one of their top priorities for legume green manures.

“We aim to help plant breeders develop strategies to target nitrogen fixation in cover crops,” explains Muller. “Because nitrogen fixation is a complicated trait that changes as plants grow, the timing of measurements is important.”

For farmers, the most important measurement of nitrogen fixation is when the crop is terminated. Legume green manures are usually terminated in the late flowering stage.
Earlier termination means the crop is likely to resprout and become a weed. However, breeding programs for hairy vetch and crimson clover cannot take that measurement, as they need to remove the plant before cross-pollination.

“Our team did a field experiment with an active breeding program,” says Muller. “We collected plant tissues and measured nitrogen fixation. We were able to tell how much of the plant’s nitrogen comes from fixation versus the soil.”

The team tested three kinds of samples that a plant breeder may take to compare them to the sample most relevant to farmers. They then measured nitrogen fixation by sending their samples to a lab that measures total nitrogen content and the abundance of a naturally occurring stable isotope.

Nitrogen from soil usually has a higher abundance of the nitrogen stable isotope than nitrogen from fixation. This allows researchers to estimate the proportion of nitrogen a plant obtains from soil versus fixation.

“Our recommendation is to collect stems from each plant in the early flowering stage to measure the nitrogen fixation via stable isotopes,” says Muller. “This provides a good proxy for nitrogen fixation in whole plants, measured in the late flowering stage that is more relevant to farmers.”

According to Muller, if breeders are going to add one measurement, it should be this. The proportion of nitrogen obtained by fixation often does not correlate with plant size or other measurements.

“It is important to measure actual nitrogen fixed in the cover crop because it can vary,” says Muller. “Farmers want to know how much nitrogen they are bringing into their fields. We need to accurately measure and provide this information to help farmers make decisions. We hope our research will encourage more farmers to adopt legumes cover crops as a nitrogen source.”

Katherine Muller is a postdoctoral researcher at Cornell University. This research was done in conjunction with the Legume Cover Crop Breeding Project, funded by the United States Department of Agriculture.

Figure 3 Hairy vetch ripe seeds, which were used in the study to display kinds of samples and measurements available to breeders. Credit: Sandra Wayman
Western Bean Cutworm Update


Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2021-25/western-bean-cutworm-update

Statewide western bean cutworm (WBC) numbers declined for the week-ending August 1 resulting in an overall average of 10.2 moths per trap. Ten counties remained above scouting threshold and include Ashtabula, Defiance, Fulton, Geauga, Huron, Lake, Lorain, Paulding and Trumbull. For more information on WBC monitoring and scouting please visit the agronomic pest website: https://aginsects.osu.edu/
Average Western bean cutworm adult per trap (in white) followed by total number of traps monitored in each county (in blue) for week ending August 1, 2021. Map developed by Suranga Basnagala, Ohio State University, using ArcGIS Pro.
A common farm weed could make a “greener” jet fuel with fewer production-related environmental impacts than other biofuels, a new study indicates.

Growing the weed, pennycress – often called stinkweed – as a crop requires less fertilizer and fewer pesticides than other plants that can be used to make renewable jet fuel, according to the study. Pennycress also requires fewer farm operations, such as soil tilling, than other potential biofuel crops, reducing the associated environmental costs. Those costs include carbon dioxide emissions that cause the climate to change, as well as other emissions that pollute the air.

Environmental impacts could be further mitigated through farm management techniques that keep fertilizer on fields, rather than allowing it to run off into nearby watersheds, the study suggests. Such techniques can add to the financial cost of growing crops, but reduce their environmental footprints.

“Reducing greenhouse gas emissions from air travel will mean not just incremental changes, but a fundamental change in how we have been producing fuel and where that fuel comes from,” said Ajay Shah, senior author of the study and associate professor of food, agricultural and biological engineering at The Ohio State University in Wooster. “And what we found is that pennycress might make a very good alternative fuel, especially when you consider the environmental costs of producing it.”

The study was published recently online in the journal Applied Energy.

For this study, the researchers estimated the environmental impacts of growing pennycress, transporting it to a biorefinery and converting it to a usable jet fuel. They also accounted for the environmental costs of burning leftover byproducts of refining the pennycress seed into fuel.
Those environmental costs include fertilizer and pesticide use, water consumption and the energy required to harvest and transport pennycress seeds from a farm to a biorefinery and process them into usable fuel.

The researchers built computer models to determine how much total energy it would take to produce jet fuel from pennycress seeds and compared those estimates with the energy needed for producing biofuels from other crops. The data for the models came from existing studies about biofuel production.

Their models showed that it took about half as much energy to produce jet fuel from pennycress as it did to produce jet fuel from canola or sunflowers, two other potential bio-jet fuel crops. Pennycress oil production used about a third as much energy as soybean oil production, the researchers found, and the energy needed for turning pennycress into jet fuel was about the same as that used to produce fuel from the flowering plant camelina, another biofuel crop.

Renewable jetfuels are not yet financially competitive with fossil fuel-based fuels, Shah said. But calculating the environmental impacts of alternative bio-based fuels should help both farmers and policymakers as they try to limit carbon dioxide in the Earth’s atmosphere and, hopefully, to slow or stop climate change.

“Pennycress also makes an appealing alternative jet fuel because of its growing season,” Shah said. “It is a winter cover crop that can be grown between corn season and soybean season, giving the same body of farmland an extra production cycle each year.

“Pennycress can be planted when corn is still standing in the field, before the corn harvest,” he said. “And it can be harvested before the soybean crops are planted. The bottom line is it can be used as a cover crop, it doesn’t divert any agricultural production land, and it has suitable properties for renewable jet fuel production.”

Greenhouse gas emissions from air travel contribute to climate change, accounting for about 2% of all human-induced carbon-dioxide emissions, according to various groups that study the effects of transportation on climate change.

“Reducing those emissions will almost certainly mean finding cleaner alternatives to jet fuels made from fossil fuels,” Shah said. “Studies like this one can help determine the best alternative.

“When it comes to pennycress, production and logistics are the big contributors to both the environmental impacts and the costs, and those are the challenge areas – they have to be streamlined and solved to make it more efficient,” he said. “If we could improve those areas,
we could make production more energy-efficient and substantially lower the costs and environmental impacts.”

This work was supported by funding from the U.S. Department of Energy.

Extension Talk – Ashtabula County Dairy Awards Presented
By: Andrew Holden

Hello Ashtabula County! The sweet corn is ripening, Fair week is just days away, and the thunderstorms are rolling through, it must be the start of August. Today, I am sharing the results of the 2020 Dairy production awards presented by The Ashtabula County Dairy Service Unit at the Farm Bureau’s Ice Cream Social on Tuesday, July 27th. While at the fair next week, I encourage to survey the dairy cows being shown, mind a milking at the milking parlor, and certainly snag a milkshake at the Holstein Club’s booth!

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The Ashtabula County Dairy Service Unit and the Ashtabula County OSU Extension Office is proud to announce the 2020 production awards for our local dairy producers. The award ceremony was held at the Ashtabula County Farm Bureau Ice Cream Social at the fairgrounds. In addition to the awards, attendees were able to listen to a presentation from Ohio Farm Bureau’s Senior Director of State and National Policy, Brandon Kern, and of course, eat ice cream while socializing with other community members. A special thanks to Denmandale Dairy from Cortland, Ohio, who brought their locally bottled milk for everyone to enjoy. If you missed your chance to try their delicious milk, it is showing up in more and more stores here in Ashtabula County, visit https://www.denmandaledairy.com/products for locations. The Dairy Service Unit and I would also like to thank the elected officials who attended the social and celebrated the production awards. Those included were all three of our County Commissioners, Kathryn Whittington, J.P Ducro, and Casey Kozlowski, our auditor David Thomas, and our State Representative Sarah Fowler Arthur. Finally, thank you again to Ashtabula County Farm Bureau for having us join in their event. The event was an excellent celebration of our dairy farmers, as well as a great chance to catch up with those who we haven’t seen recently.

The 2020 dairy awards ceremony began with recognizing two farms that made the Ohio Honor Roll. The two farm families were recognized for being two of the best in Ohio. Bossy’s Way Farm of New Lyme Township received their award for being ranked the 13th placed Holstein herd in the entire state. Alfa-Creek Brown Swiss Farm of Andover Township received an award for having the 1st place Brown Swiss herd in...
state of Ohio in 2020. Congratulations to both farms on their incredible achievements! We are proud to have such high-ranking dairies here in Ashtabula County.

The top Ashtabula County Energy Corrected Milk Award went to Bossy’s Way Farm of New Lyme Township with an average of 33,056 pounds. Alfa-Creek Farms of Andover Township received the 2020 award for Low Somatic Cell Milk Quality with an average count of 76,000. The Most Improved Herd Award was presented to the Brinker Dairy of Rock Creek Township. The Brinker herd improved over 2,500 pounds of milk per cow last year.

2020 Best of the Month Herd Awards were presented to Bossy’s Way Farm for the months of January, April, May, June, July, August, October, November, & December and to Alfa-Creek Farms for the months of February, June, & September.

Finally, five farms were recognized for having top cows in Ashtabula County by breed and age. Alfa Creek Brown Swiss received all four Brown Swiss awards and Alfa-Creek Farms won three Crossbred awards, one Holstein Awards and one Red & White Holstein awards. Brinker Dairy won all the Jersey awards, Springer Dairy won one crossbred award, and Bossy’s Way Farm won three Holstein awards, and three Red & White Holstein awards. Congratulations to Bossy’s Way Farm for also having the top producing cow in 2020 that produced 43,984 pounds of milk!

2020 was a challenging year, especially for our dairy farmers. Despite the adversity, our producers persevered, and continued to perform at some of the highest levels in the state. It was an honor recognizing the achievements made in 2020 and we look forward to 2021. I'd like to thank our directors for helping plan the award ceremony and everything else they do for our dairy industry. We hope to see you all at next year's award ceremony!

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Andrew Holden is an Agriculture & Natural Resources Extension Educator for Ohio State University Extension. Andrew can be reached at 440-576-9008 or Holden.155@osu.edu

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Support Youth Livestock Producers Aug. 14 at the Sale
By: Jenna C. Hoyt, Extension Educator, 4-H Youth Development

Northeast Ohio Agriculture

OHIO STATE UNIVERSITY EXTENSION
Ashtabula, Portage and Trumbull Counties
The 4-H and FFA Youth of Ashtabula County, invite you to attend the 2021 Market Animal Sale on Saturday, August 14 at 10:00 a.m. in the grandstands at the Ashtabula County Fairgrounds.

Market animal projects are offered in 4-H and FFA to help members learn the science of raising marketable animals as food. The projects involve raising a young or feeder animal to the appropriate market weight. These projects involve raising and keeping records of one or more meat animals to the appropriate market weight. Market animals include beef feeders, dairy beef feeders, goats, hogs, lambs, rabbits, steers, dairy steers, chickens, ducks and turkeys. All youth are taught how to use best practices that support the production of quality and safe animal products for consumers, as well as responsible animal handling, care and welfare in not only farm animal production, but also with companion and performance animals. They also pledge or promise to 1) provide a food animal product preferred by consumers, and 2) provide a safe, wholesome food animal product. Food animals are those whose products (meat, milk, and eggs) have the potential to become part of the food chain. Members are judged on the quality of the animal produced, their ability to show the animal, and on the knowledge gained from the project.

The Market Animal Sale is the optimum opportunity for the community to buy and support local youth. Buyers are invited to walk through the barns throughout the week to learn more about the project work and the projects being auctioned on Saturday. The 2021 sale order is: Cheese Basket, Ducks, Rabbits, Goats, Turkeys, Chickens, Beef Steers, Dairy Steers, Beef Feeders, Lambs, Hogs and Dairy Beef Feeders. Registration begins at 9:00 a.m. Saturday. The auction is open to everyone, and quick registration cards are available at the Extension Office prior to Fair.

We look forward to seeing you at the 2021 Ashtabula County Fair August 10-15 and at the Sale on Saturday.

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Jenna Hoyt serves as Ashtabula County’s 4-H Youth Development Extension Educator for Ohio State University Extension and may be reached at 440-576-9008 or hoyt.88@osu.edu

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Thursday, August 5th, 6:30 P.M.

The Ashtabula County Cattlemen’s Association and the Ohio State University Extension invite you to join us for the 2021 Beef Twilight Tour on August 5th, in Gustavus, Ohio. Auchsu Lenno Farm has been raising black and red Angus cattle in Gustavus for over 17 years after transitioning from dairy farming. The tour will showcase their cow-calf operation and the various production practices used at their facility. All beef producers and industry individuals are invited to attend. No reservations are required. Do not miss this opportunity to visit this outstanding local beef operation. We hope to see you there!

A Free Beef Hamburger and Hotdog Meal will be served at the conclusion of the program, compliments of Cherry Valley Slaughtering & Processing.

Thank you to the Chad & Cheryl Wildman for hosting this event!

Location: 10023 St. R-193, Farmdale, OH 44417
Contact information: Call Andrew Holden at 440-576-9008 or Email Holden.155@osu.edu for more info

Cost: Free
NE Ohio Hay Day

Please join us on August 21st for a 'Day in the Hay' at Goodell Family Farm! We have a great program lined up for the day! Some of our program topics include baleage and storage, dry hay, forage quality, and more.

DATE: Saturday August 21st
TIME: 11AM – 3PM
LOCATION: Goodell Family Farm, 10220 Peck Rd, Mantua, OH 44255
COST: FREE - Lunch included (RSVP Required)

For more information and to RSVP: Scan the QR code, go to https://go.osu.edu.neo2021hayday or call the Portage County Extension Office at 330-296-6432