OHIO STATE UNIVERSITY EXTENSION

NORTHEAST OHIO AGRI-CULTURE NEWSLETTER

Your Weekly Agriculture Update for Ashtabula, Portage and Trumbull Counties

July 28, 2020

Cherry tomatoes growing in NE Ohio

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Hello Northeast Ohio Counties!

We are still below normal on July’s precipitation totals, but we were fortunate to catch a rain shower yesterday. It looks like cooler weather is to come in the next week. This will be helpful as our corn continues through pollination.

If anyone has received unsolicited packages of seed be sure to report it. Details on how to report this information can be found in the first article.

Have a great week everyone!

Lee Beers
Trumbull County Extension Educator

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**ODA Asks Public to Not Plant any Unsolicited Packages of Seeds**

By: Stephanie Karhoff  

The Ohio Department of Agriculture (ODA) has been notified that several Ohio residents have received unsolicited packages in the mail containing seeds that appear to have originated from China. The types of seeds in the packages are currently unknown and may contain invasive plant species. Similar seed packets have been received recently in several other locations across the United States.

If you receive a package of this type, please **DO NOT** plant these seeds. If they are in sealed packaging, do not open the sealed package. You can report the seeds to [ODA online here](https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/resources/seed-reporter) or you may contact the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Anti-smuggling Hotline by calling 800-877-3835 or by emailing SITC.Mail@aphis.usda.gov. Also, **if possible, please retain the original packaging, as that information may be useful to trade compliance officers as they work through this issue.**

Unsolicited seeds could be invasive species, contain noxious weeds, could introduce diseases to local plants, or could be harmful to livestock. Invasive species and noxious weeds can displace native plants and increase costs of food production. ODA and APHIS work hard to prevent the introduction of invasive species and protect Ohio agriculture. All foreign seeds shipped to the United States should have a phytosanitary certificate which guarantees the seeds meet important requirements.

We will have the latest information regarding this investigation at [https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/resources/seed-reporter](https://agri.ohio.gov/wps/portal/gov/oda/divisions/plant-health/resources/seed-reporter).

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**Climate and Hydrology Patter to Relax in August**

By: Jim Noel  
The overall drier pattern in many but not all places in Ohio this summer appears like it will relax closer to normal in August. The greatest uncertainty with the outlook will center around how the tropical moisture impacts the eastern United States.

The August outlook for temperatures indicates 1-2F above normal but a lot closer to normal than what we have seen this summer with the heat. The last time we have seen this much hot weather was 2015 and 2012. The good news is the worst of the heat for 2020 appears over. What this means is we should see a lot more maximum temperatures in the 80s with some 90s thrown in. Expected minimum temperatures mostly in the 60s to lower 70s.

The August outlook for rainfall indicates somewhat improving conditions. There is uncertainty here due to tropical moisture and where it flows. Normal rainfall is in the 3-4 inch range and rainfall is expected to average in the 2-4 inches range with a few higher totals. This will put us a lot closer to normal wetness. The 2 inch totals are more likely in northern Ohio and the 4 inches totals are more likely in southern Ohio.

It appears that the scattered drought conditions in Ohio are likely peaking and some improvement is possible over the next several months.

The outlook for September to November for the end of growing season into harvest season suggests warmer than normal weather will persist and low chances for an early freeze. Rainfall is shaping up to not be too far from normal.

**Studying Interactions Between Ground-Nesting Bees and Soils**

By: Susan V. Fisk
Many living creatures live in soil. Though their sizes range from microscopic soil microbes to larger animals like gopher turtles, they all call soil their “home.” Included in these ground-dwelling species are bees – vital in the pollination cycle of about 90% of plant life.

Rebecca Lybrand and her team at Oregon State University are studying the interaction between the bees and soil in agricultural settings.

According to the recently-published paper, bees contribute $15 billion to crop value annually. They pollinate about three-quarters of the fruits, vegetables, and nuts within the United States alone. Declines in honeybee colonies are a critical threat to agriculture and the global food supply.

“Growers who are interested in attracting alternative pollinators, such as wild bees, face a major challenge,” says Lybrand. “There are not many studies about what habitats are best for these wild bees.”

Pollinators are widely affected by human land use. Creating buildings, parking lots and other “anthropogenic changes” disrupt the natural habitats of animals and plants. Agricultural disturbance also affects bee communities. Interestingly, above-ground bee species are nine times more affected by agricultural intensification than ground-dwelling species.

In some cases, growers have been able to build “bee beds” in their farm setting. In the 1950s, they started to design moist, salty soil areas to attract ground-nesting bees that helped increase alfalfa yields in Washington state.

Lybrand’s study looked at physical and chemical properties of soils collected from active bee and sand nest wasp sites in the Willamette Valley of western Oregon. They compared soil properties among seven farm sites to identify similarities and differences.
The Willamette Valley has wet winters with warm, hot summers. The team first found agricultural sites that contained ground-nesting bees. They collaborated with farmers who observed ground-nesting bee activity around their fields.

The nests are only identified by rather small holes (only 3-5mm). The team only collected data if the observed bees entering the nest. Nests and holes can remain even after the bees leave. At the study site, they specified the type of bee to the family level (i.e. “bee” versus “genus” and “species”). But they also collected some bees to bring back to the lab for further identification.

The data the team collected in the field included soil temperature, pH, and soil texture. They also collected soil samples to bring back to the lab for analysis.

Findings from the study included that active nesting sites were present in locations with little to no rock cover and low vegetation. Nesting sites were found in areas with low organic matter coverage. The slope of the land didn’t seem to have any influence, nor did a north/south-facing aspect.

“One of our observations confirmed that active emergence holes remained open throughout the year,” says Lybrand. “They didn’t swell shut during the wetter, cooler seasons – despite having clay in the soils that might cause shrinking and swelling.” An interesting finding from the research is that the team found lipids in the soil nest linings. The lipids may provide a type of waterproofing for the nests and their inhabitants.

“Because the large majority of wild bee species nest in the soil, studies about how to best attract them to farms are important,” says Lybrand. “Soil scientists and entomologists can partner with growers to identify soil habitats that support and attract more of these pollinators to agricultural

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Holes from abandoned nests can remain in farm field but are subject to water and wind erosion. This photo was taken during the winter months. Credit: Jennifer Fedenko

One of the ground-dwelling bees collected for identification. These bees contribute to the farm ecosystem. Credit: Jennifer Fedenko
Northeast Ohio Agriculture

Improve our understanding of the connections between agriculture and the soils that bees, crops, and living organisms rely on to survive is important. Our research also provided a framework for studying ground-nesting organisms—an area of soil science that is underrepresented.

Looking to the future, Lybrand says, “future research should also integrate methods that identify bees and/or wasps to the species level. That would allow for interpretations of the results from an ecological point of view. Another question to follow up on could be the nature and purpose of the lipids found in the soil nest linings, to confirm their actual role.”

This research was published in *Soil Science Society of America Journal*, a publication of the Soil Science Society of America. Funding for this project came from an Agricultural Research Foundation grant via Oregon State University.

**It’s in the science: court allows Enlist Duo registration but requires closer look at monarch butterflies**

By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law

Source: [https://farmoffice.osu.edu/blog/thu-07232020-417pm/it%E2%80%99s-science-court-allows-enlist-duo-registration-requires-closer-look](https://farmoffice.osu.edu/blog/thu-07232020-417pm/it%E2%80%99s-science-court-allows-enlist-duo-registration-requires-closer-look)

In a decision that turns largely on scientific methodology and reliable data, the Ninth Circuit Court of Appeals yesterday allowed continued registration of the Enlist Duo herbicide developed by Dow AgroScience (Corteva). Unlike last month’s decision that vacated registrations of three dicamba herbicides, the two-judge majority on the court held that substantial evidence supported the EPA’s decision to register the herbicide. Even so, the court sent one petition back to the EPA to further consider the impact of Enlist Duo on monarch butterflies in application areas. One dissenting judge would have held that the science used to support the Enlist Duo registration violates the Endangered Species Act.

The case began in 2014, when the same organizations that challenged the dicamba registrations (National Family Farm Coalition, Family Farm Defenders, Beyond Pesticides, Center for Biological Diversity, Center for Food Safety and Pesticide Action Network North America) and the Natural Resources Defense Council each filed petitions challenging the EPA’s registration of Enlist Duo. The EPA later amended the registration in 2015 and 2017, eventually allowing use of the herbicide on corn, soybeans and cotton in 34 states. The petitioners challenged the 2015 and 2017 registrations as well, and the Ninth Circuit consolidated the challenges into the case at hand.
The court’s opinion begins with an explanation of why it agreed with the parties who brought the challenges that they had the legal right to do so, or had “associational standing.” Likely of higher interest to our readers is how the court answered the questions of whether the EPA adequately examined the potential impacts of Enlist Duo under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the federal Endangered Species Act (ESA). Here’s what the court had to say about the petitioners’ claims under each law:

**The FIFRA claims.** The monarch butterfly issue was the only successful FIFRA claim advanced by the petitioners. The court agreed that the EPA didn’t properly assess adverse harm to monarch butterflies that would result from increased 2,4-D use on milkweed in application fields, despite evidence suggesting that the butterflies might be adversely affected. The EPA stated that it didn’t do so because the approval of Enlist Duo would not change the amount of milkweed being controlled by herbicides—those milkweeds would still be controlled with or without Enlist Duo. The court disagreed, stating that FIFRA required the agency to determine whether any effect was “adverse” before then determining whether the effect on the environment was unreasonable, which EPA didn’t do in regard to the monarch butterfly.

The court rejected all of the petitioners’ other arguments under FIFRA:

**Applicable standards.** Several claims that the EPA applied the wrong FIFRA registration standards failed. The agency correctly used the broader and more stringent standard, which was to determine whether the registration would cause any unreasonable adverse effects on the environment.

**Increased glyphosate use.** Petitioners also argued that the EPA erred in determining that approval of Enlist Duo would not cause unreasonable adverse effects on environment because glyphosate was already being used. The registration would only impact which glyphosate was being used but not how much glyphosate was in use. The court agreed with EPA’s assertion that due to the “nearly ubiquitous use” of glyphosate across the country before the approval of Enlist Duo registration, there would not be an increase in overall glyphosate use and no increased risks. Interestingly, the court distinguished increased use from new data about glyphosate use, stating that “this does not mean, of course, that new data about glyphosate will go unconsidered….”

**Volatility risk.** The court also rejected volatility risk arguments, one of the science-heavy parts of the opinion (begin at page 37 for a good read). The EPA had concluded the type of 2,4-D in Enlist Duo exhibits lower volatility and off-site vapor drift than other forms of 2,4-D. EPA reached this conclusion based several studies and data points: a laboratory study that examined degree of visual damage, six publicly available studies assessing plant growth and survival damage, data from a vapor flux study used to
perform computer modeling to determine dose level and air concentration in order to predict adverse damages to plants off-field, a second type of modeling that assesses drift of wet and dry depositions, and atmospheric monitoring data. Petitioners claimed limitations to the studies and methodology used, contradictions between EPA scientists, failure to follow regulatory guidelines and to consider large enough field sizes in its modeling. The court commented that the evaluation of volatility “probably could have been better,” but found no evidence showing that EPA’s conclusion was wrong or that volatility fears had materialized since approval of the herbicide. The court explained that the agency may apply its expertise to draw conclusions from probative preliminary data and “it is not our role to second-guess EPA’s conclusion.”

**Mixing risks.** Petitioners also argued that Dow intended to mix Enlist Duo with glufosinate and EPA failed to account for the synergistic effect of such mixing. With no evidence other than an abandoned patent application for a mixed product by Dow, the court held that FIFRA doesn’t require an analysis of theoretical tank mixing but only that which is contemplated on the label.

Nearly all of the EPA’s FIFRA decisions were supported by substantial evidence, the court concluded, with the exception of the monarch butterfly analysis.

**The ESA claims.** Science is a recurring theme in the court’s analysis of the petitioners’ ESA arguments, and also the source of sharp disagreement on the court. ESA’s section 7 requires a determination of the biological impacts of a proposed action. ESA consultation among the agencies is required if determined that an agency’s action “may affect” a listed species or critical habitat in an “action area.” The petitioners claimed that EPA failed in its determination on several grounds, requiring the court to review whether the EPA’s determination was arbitrary, capricious, an abuse of discretion, or contrary to law. Here are the arguments, and the court’s responses:

**“No effect” finding.** The petitioners argued that the EPA erred in determining that Enlist Duo approval would have “no effect” on plant and animal species and the court responded with another lengthy science-heavy discussion of “risk quotient” methodology and legal requirements to use the “best scientific and commercial data available.” The EPA employed a risk quotient methodology to conclude that there would be exposure to the herbicide but that such exposure would not lead to an effect on plants and animals. The two judges in the majority were willing to defer to the agency on this conclusion and its dependence on the risk quotient methodology, but Judge Watford strongly disagreed. Pointing out that the National Academy of Sciences had advised the EPA that the risk quotient method was “scientifically unsound,” the dissent concluded that the data derived from the methodology did not qualify as “scientific data” and therefore violated the ESA. The majority stated that the risk quotient methodology doesn’t violate the duty to use the best scientific and commercial data available, which means that the EPA must not disregard available scientific
evidence that is better and does not require the agency to conduct new tests or make decisions on data that doesn’t exist. Deference to the agency was warranted, said the majority, and restraint against second guessing or using the court’s judgment.

**Action area.** For its ESA determination, the EPA limited the “action area” to treated fields, while petitioners argued that the herbicide would drift beyond treated fields. Again turning to the EPA’s science, the court held that the agency had science-based reasons for limiting the target area. The EPA had appropriately accounted for drift through empirical data, mitigation measures, and label restrictions and no evidence in the record supported that the agency had made an error.

**Critical habitat.** The final argument advanced by petitioners was that EPA did not meet its duty to insure that there would be no “adverse modification” of critical habitat from the registration. Although there were 154 species with critical habitats in the states where Enlist Duo would be approved, EPA concluded that 176 of the species would not be in corn, cotton or soybean fields. Of the eight species remaining, the agency determined that there would be no modification to their critical habitats as a result of Enlist Duo registration because none of the species’ essential features or “primary constituent elements” were related to agriculture. Petitioners challenged the methodology EPA employed to reach this conclusion, but the court once again disagreed and deferred to the agency.

**What remedy?**

With only the monarch butterfly impact analysis in need of further study, the Ninth Circuit declined the petitioners’ request to vacate the Enlist Duo registration. The court chose instead to remand the petition without vacating the registration, stating that the EPA’s failure to consider harm to monarch butterflies was technical and not a “serious” error. Pointing also to the “disruptive” consequences of removing a pesticide that has been in use for over five years, the court stated that vacatur was not warranted when the EPA had substantially complied with FIFRA and fully complied with the ESA.

**What’s next?**

Enlist Duo registration will continue. The EPA must address evidence that its destruction of milkweed in fields harms monarch butterflies, however. The court advised the agency to “move promptly” in doing so.

Further action by the petitioners is likely. According to correspondence with DTN, the petitioners are disappointed and will fight the decision. They will likely also follow the EPA’s science quite closely as it reexamines the monarch butterfly issue.
PESTICIDE COLLECTION DAY:  
ODA CLEAN SWEEP

Tuesday, August 25th, 2020 - 9:00 AM to 3:00 PM

Location: Perry Coal and Feed  4204 Main St, Perry, OH 44081

Cost: Free

Details: Pesticide Collection for all Commercial and Private Agricultural Applicators (Nurseries, Farms, Grape Growers, Christmas Tree Growers)

Not intended for homeowners

Contact information: Thomas deHaas – OSU Lake County Extension, ANR Educator dehaas.2@osu.edu or 440-853-2630
The census counts everyone in the United States. Census results help determine how more than $675 billion in Federal funding is distributed to each state to support vital programs across the country EVERY YEAR! These funds shape local health care, housing, education, transportation, employment, and more. Census data is safe, secure, and protected by law.

Help us shape Ashtabula County and participate in the 2020 Census!

Respond by ONE of the following three ways:

**RESPOND ONLINE**
Visit [www.my2020census.gov](http://www.my2020census.gov) to fill out the online questionnaire. COVID-19 has affected hours of operation and availability of local libraries. Call 2-1-1 for current location operating information.

- Andover Public Library
- Ashtabula Center for Active Living
- Ashtabula County District Library
- Conneaut Public Library
- Geneva Public Library
- Grand Valley Public Library
- Harbor Topky Library
- Henderson Memorial Library
- Kingsville Public Library
- Rock Creek Public Library

**RESPOND BY PHONE**
You can call the assistance center toll-free at 1-844-330-2020 (English) or 1-844-468-2020 (Spanish).

**RESPOND BY MAIL**
A paper questionnaire should have been mailed to you. Complete and return this questionnaire to complete your census by mail.

For more information visit [www.my2020census.gov](http://www.my2020census.gov) or [www.ashtabulacounty.us/census](http://www.ashtabulacounty.us/census)