

Auglaize County OSU Extension Weekly Agriculture Newsletter – June 17, 2020

Scouting and Latest Information



Soybean



Corn

Hello!! Good morning! I pray you are well.

What a good Ag Breakfast/Farm Talk meeting. Every Tuesday from 8:30 to 9:30 AM we will be hosting a virtual meeting via Zoom that can also act as a simple conference call for those of you not able to get online to view live. The meeting will be set up to discuss key, timely information for your operation and to open the floor for questions and sharing of information. You may propose topics for the next meeting at anytime during the week by e-mailing or calling me. **Next week's topics will be weather and other.** Please join use every Tuesday for Auglaize County Farm Talk.

If you are a buyer or seller of hay or straw, let me know and I can keep a list to share with others.

List of individuals searching for hay or straw: None

List of individuals selling hay or straw:

1. About 200 3' X 3' wheat straw bales for sale. This same individual is willing to sell his winter cover crops as forage to anyone interested.
2. At least 500 small square wheat straw bales for sale.

Call the OSU Extension office at 701-541-0043 or e-mail me at stachler.1@osu.edu to get the contact information.

Joke: Why do cows like being told farmer jokes??

Agricultural Fun Fact: Total U.S. corn yield (tons per acre) have increased more than 360% since 1950!

Rain fell only 2 days this past week. It is getting quite dry in areas of the county. I saw corn shriveled today in the afternoon. Rainfall on Wednesday, June 10th ranged from a trace near Mercer Line and St Rt. 197 roads to 0.75" near Wapak-Fisher and Townline-Lima roads. Rainfall on Saturday ranged from 0.1" near Sommers and Minster-Ft. Recovery roads to 0.41" near Brown and Pusheta roads. Rainfall for the week ranged from 0.2" near Sommers and Minster-Ft. Recovery roads to 1.06" near Wapak-Fisher and Townline-Lima roads. Rainfall for the week averaged 0.58", 0.18" less than last week. Rainfall is forecasted at least at 40% for Thursday, Friday, Sunday, and Monday if you are lucky.

The average high temperature now is 81 degrees F, only one degree more than last week. Temperatures were above normal for **3** days of the week and below normal for **4** days of the week. The range in high temperature for the week was 68 to 88 degrees F. The average high temperature for the week was 77.4 degrees F, which is 7.2 degrees F cooler than last week and 3.6 degrees F **cooler than** the current normal high temperature! Temperatures for the next 7 days will be above 81 degrees F with Saturday and Sunday 90 degrees F.

Wheat



Wheat with some Fusarium head blight



Field of wheat

Wheat is slowly turning color. All wheat is in the milk stage. Now we just wait for harvest. I did not change the wheat condition for the week, so it is: 10% excellent, 42% good, 43% fair, 5% poor and 0% very poor. Last week's rating was 10% excellent, 42% good, 43% fair, 5% poor, and 0% very poor. Leaf diseases changed drastically this past week in some fields!! Stagonospora leaf blight and sometimes glume blotch can be found in fields. Most of the flag leaf was brown in one field due to Stagonospora! I found Fusarium head blight in some fields. The field with the greatest frequency of damaged heads was at 11%. Most fields had none or less than 5%. Fortunately the heads showing the Fusarium head blight was not showing the typical salmon colored pathogen, so maybe vomitoxin will not be so bad in these fields, but only time will tell.

Alfalfa



Most alfalfa hay has been harvested

Most first cutting alfalfa has been harvested. One field has up to is at the bud stage already. Alfalfa is looking pretty good with little to no h. Check alfalfa for potato leafhopper.

Corn



Current stage of corn (V6)



A corn field

Corn planting is completed! More spot planting was done early in the past week. Corn has really taken off. Corn is gaining color, but is still chlorotic in some fields. I'm estimating that 100% of the corn was planted in the county as of this past Sunday. Last year at this time we had only 66% of the corn planted in the county! We should be at 100% planted now in Ohio, so we are on schedule. I downgraded the quality of the corn crop again this week! It is not that great. I rated the corn crop as 3% excellent, 32% good, 52% fair, 10% poor, and 3% very poor. Last week I rated the corn crop at 4% excellent, 43% good, 41%, fair, 10% poor, and 2% very poor. The largest corn at this time is at the V7 stage (7th collar visible). Most corn is in the V5 (fifth collar) to V6 (sixth collar). The corn is still short for its age. No leaf diseases yet.

Soybean



Most developed soybean (v4)



Field of soybean

Soybeans are at that in between stage of picking up enough nitrogen versus making their own nitrogen, so they do not look that green. My estimate is that 99% of the soybeans have been planted in the county as of Sunday and 96% is emerged. At this time last year only 65% of the soybeans had been planted in the county! We should be at 94% planted now in Ohio, so we are ahead of historical planting. I downgraded the soybean crop again this week. The current condition of soybean in the county is 16% excellent, 40% good, 33% fair, 10% poor, and 1% very poor. Last week's crop condition was 23% excellent, 45% good, 26% fair, 3% poor, and 3% very poor. The most advanced soybean is at the V4 stage (4th trifoliate leaf unrolled), but most are at V2 (2nd trifoliate leaf unrolled) to V3 (3rd trifoliate leaf unrolled).

Weeds



Lots of volunteer corn



Waterhemp in soybean

The biggest topic again this week is the cancellation of the registration of dicamba products applied to dicamba-resistant soybean! The group that filed the lawsuit asked the judge to make EPA stop the use of the dicamba products, but that did not work. So at this time if a retailer or farmer has the dicamba products in stock, you can apply them at least until June 30th or until otherwise notified. There are many soybean fields with high densities of volunteer corn. Please take them out in the first herbicide application. Waterhemp is present in most fields this year and is taking off now in height. Even fields with preemergence herbicides, the waterhemp is emerging, but obviously at lower numbers than where no preemergence herbicide was applied. There are more Canada thistles in fields than I have seen in a few years, so make sure you are using products to control them. Some fields of corn showed herbicide damage on Sunday.

Insects/Other



Armyworm is still here

The biggest insect news is still the armyworm. At the middle of last week armyworm was being found in wheat fields as well. The armyworm is still around yet and have marched into some fields. The non-transgenic corn in one field was completely eaten by the armyworm and replanted while the insect-traited corn was barely eaten. Unless the armyworms are marching, then the population is likely not large enough to require spraying of corn or soybean. Leafhoppers are still present at moderate levels, not requiring any spraying at this time, however keep scouting. I have seen very little to no hopper burn yet.

With the cancellation of dicamba to dicamba soybean, I did not update the label information below. Not sure of label changes for Engenia (<https://agro.basf.us/campaigns/engenia/tankmixselector/>), XtendiMAX (<http://www.xtendimaxapplicationrequirements.com/Pages/default.aspx>), FeXapan (<https://www.corteva.us/products-and-solutions/crop-protection/fexapan/tank-mix-partners.html>), and Tavium (<http://www.syngenta-us.com/herbicides/tavium-tank-mixes>) this week. The Engenia label still has the most approved products compared to XtendiMAX and FeXapan. No new herbicide was added to the XtendiMAX label this past week, which totals 252 herbicides. No new adjuvant was added the XtendiMAX label, now totaling 442. No new nozzles were added to the XtendiMAX label, which totals 44. No new Drift Reducing Adjuvant (DRA's) were added to the XtendiMAX label this week, making a total of 107 DRA's. No nutritional products were removed from the XtendiMAX label which totals 259. No new products were added to the Insecticides, Fungicides, Insecticides plus Fungicides, Plant Growth Regulator and Other group on the XtendiMAX label which totals 115. No new adjuvants were added to the Engenia label, which now totals 600. No new herbicides were added to the Engenia label, which brings the total herbicide count to 204. No new products were added to the Other category (growth regulators and fungicides) on the Engenia label,

which totals 37. No new insecticides were added to the Engenia label which currently has 49 products. No new Drift Reducing Adjuvants (DRA's) were added to the Engenia label, which totals 131. No new nozzles were added to the Engenia label, which totals 31. No new nutritional products were added to the Engenia label which totals 231 products. No new products were added to the pH Modifier group of the Engenia label which totals 17 products. The FeXapan label has many of the same products and nozzles as the XtendiMAX label, but NOT all are the same, so check the FeXapan label carefully. The FeXapan website has changed drastically! They now have DRA's listed for each product type that must be mixed with FeXapan. There are some products that need no DRA added! There are 13 glyphosate formulations, 229 herbicides, 41 insecticides, 17 fungicides, 96 DRA's, 317 adjuvants, 204 nutritionals, 30 plant growth regulators, 18 other products, and 46 nozzles that have been approved for the FeXapan label. There are 47 herbicides, 101 DRA's, 316 adjuvants, 96 nutritionals, 16, insecticides, 7 fungicides, 8 other products, and 41 nozzles approved for use with Tavium.

Enlist One and **Enlist Duo** for Enlist soybeans and corn also have approved tank-mix partners and nozzles like the dicamba products. **There were no changes to the labels this week.** The list of approved tank-mixtures for both of these products has been updated. Please follow these labels online at <https://www.enlist.com/en/herbicides.html>. There are 48 nozzles, 143 herbicides, 19 glyphosate formulations, 9 glufosinate formulations, 11 Dry AMS products, 85 insecticides, 30 fungicides, 21 plant growth regulators, 645 other products, and 315 fertilizers / nutrients labeled with Enlist One. There are 23 nozzles, 74 herbicides, 48 insecticides, 17 fungicides, 22 plant growth regulators, 8 Dry AMS products, 512 Other products, and 168 fertilizers / nutrients labeled with Enlist Duo.

Other information about the Enlist products include the following:

1. Enlist Duo rate is 4.75 pts/A which only has 1.0 lbs ae/A of glyphosate which is really not enough. You would think you could just add more glyphosate, but you CAN NOT add more glyphosate with Enlist Duo.
2. Enlist One can be mixed with ANY rate of glyphosate, glufosinate and 192 other herbicides.
3. Never use Enlist One alone on Enlist crops and always apply Enlist One at 2 pts/A
4. You CAN NOT add glufosinate with Enlist Duo!
5. When adding a postemergence grass soybean herbicide like quizalofop, clethodim, sethoxydim, or fluazifop to Enlist One add 33% higher rate of these products to reduce the antagonism with grasses OR apply the postemergence grass herbicides 7 days after the Enlist One.

Upcoming Meetings

1. **Auglaize County Farm Talk.** Every Tuesday from 8:30 to 9:30 AM we will have a virtual agricultural meeting. Next week's topic is the weather and more. The link to get onto the meeting is as follows: <https://osu.zoom.us/j/2119847503> If you just want to call in the phone number and meeting code are as follows: 646-876-9923 2119847503#
2. **The OSU Farm Office is Open.** The OSU Extension Farm Office Team will open our offices online and offer biweekly live office hours on Thursdays from **9:00-10:30 am** EST. Next week there will be a meeting!! Each office session is limited to 500 people and if you miss our office hours, we'll post recordings on farmoffice.osu.edu the following day. **Register at <https://go.osu.edu/farmofficelive>.**
3. **All OSU Extension face to face meetings have been cancelled or postponed through July 6th. Meetings after this date will go on as planned at least until further notice.**

Answer to joke: Because they like being amoosed!!

Managing Weeds in Soybean with Postemergence Herbicides



It is that time of the season to scout for weeds in soybean fields. Many soybean fields are relatively free of weeds. However in many fields the preemergence herbicides were applied a few weeks ahead of planting and the residual herbicides are running out of gas. The most common weeds I am seeing right now are waterhemp, giant ragweed, and annual grasses.

Pay close attention to waterhemp. Waterhemp is a member of the pigweed family so it looks similar to redroot and smooth pigweed. Waterhemp can be identified by its longer and narrower leaves and lack of hair on the stem compared to the ovate leaves and hairy stems and petioles of smooth and redroot pigweed.

Waterhemp can be resistant to glyphosate (Group 9), ALS inhibitors (Group 2), and PPO inhibitors (Group 14) which is why it is becoming more prevalent in the county. Giant and common ragweed can be resistant to all three of these types of herbicides as well. Marehail is resistant to glyphosate and ALS inhibitors. Resistance makes weed control more difficult because there are fewer options.

To control common and giant ragweed and waterhemp in Roundup Ready soybean apply fomesafen (Flexstar) at 1.3 pints per acre plus glyphosate at 1.125 or 1.5 pounds acid equivalent per acre (32 or 44 fluid ounces per acre of Roundup WeatherMax/PowerMax), although control may not be acceptable if resistant weeds are present. The adjuvants that need to be added include a methylated seed oil (MSO) at 1.5 to 2 pints per acres plus ammonium sulfate (AMS) at 8.5 pounds per 100 gallons of spray mixture. Please set the sprayer to deliver 20 gallon per acre spray volume to maximize fomesafen activity. Also use nozzles that put out a fine to medium spray droplet. Apply to giant ragweed less than 8 inches tall and waterhemp less than 5 inches tall. Flexstar should not be used after about July 15th due to the 10 month rotational restriction to corn. I have seen photos of carryover this year to corn.

If marestalk is present in Roundup Ready soybean, the only option you have, which will not be totally effective, is to apply FirstRate at 0.6 ounce per acre plus glyphosate at 1.5 pounds acid equivalent per acre plus a methylated seed oil at 1.5 to 2 pints per acre plus ammonium sulfate at 8.5 to 17 pounds per 100 gallon of spray solution.

In LibertyLink soybean apply glufosinate (Liberty) at 29 to 43 fluid ounces per acre to waterhemp and lambsquarters less than five inches tall and giant ragweed less than six to eight inches tall. The greater the density of weeds and taller weeds use a higher rate. Include ammonium sulfate at three pounds per acre. Apply the glufosinate at 20 gallons of spray volume per acre and use a nozzle producing a fine to medium spray droplet. If barnyardgrass, yellow foxtail, and/or volunteer corn are present include clethodim (Select).

As of today, if you had XtendiMAX, FeXapan, or Engenia in your possession, then you can spray these products until June 30, 2020 due to the lawsuit. In Xtend soybean apply XtendiMAX and FeXapan at 22 fluid ounces per acre or Engenia at 12.8 fluid ounces per acre or Tavium at 56.5 fluid ounces per acre plus glyphosate at 1.125 or 1.5 pounds acid equivalent per acre. Be sure to use all approved adjuvants and pesticides and strictly follow the label guidelines for applications. You must have a dicamba certification to apply these products to Xtend soybean. If you are planning to not spray a dicamba product on Xtend soybean, then follow the recommendations for Roundup Ready soybean.

A good amount of Enlist soybeans were planted this spring. In Enlist soybean apply Enlist Duo at 4.75 pints per acre, glyphosate at 1.125 to 1.5 lb acid equivalent per acre plus Enlist One at 32 fluid ounces per acre, glufosinate (Liberty) plus Enlist One at 32 fluid ounces per acre or glyphosate at 0.75 pounds acid equivalent plus Enlist One at 32 fluid ounces per acre plus glufosinate at 29 to 43 fluid ounces per acre. Like the dicamba products there is a list of approved adjuvants and pesticides that can be added to Enlist Duo or Enlist One. The 2,4-D choline in Enlist Duo and Enlist One can antagonize grass and volunteer corn control. To reduce this risk add an additional 33% of the grass herbicide like clethodim to the tank mixture or apply the grass herbicide 7 days after the 2,4-D choline products.

C.O.R.N. Newsletter

<https://agcrops.osu.edu/newsletter/corn-newsletter>

- [Archives](#)

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Ohio Department of Agriculture: dicamba use in Ohio ends June 30, 2020



The dicamba roller coaster ride continues today, with a statement issued by the Ohio Department of Agriculture clarifying that the use of XtendiMax, Engenia, and FeXapan dicamba-based products in Ohio will end as of June 30, 2020. Even though the US EPA has issued an order allowing continued use of the products until July 31, 2020, use in Ohio must end on June 30 because the Ohio registrations for the three dicamba-based products expire on that day.

As we've explained in our previous blog posts [here](#) and [here](#), the Ninth Circuit Court of Appeals vacated the registration of the dicamba products on June 3, 2020. In doing so, the court stated that the EPA had failed to perform a proper analysis of the risks and resulting costs of the products. According to the court, EPA had substantially understated the amount of acreage damaged by dicamba and the extent of such damage, as well as complaints made to state agriculture departments. The court determined that EPA had

also entirely failed to acknowledge other risks, such as the risk of noncompliance with complex label restrictions, economic risks from anti-competition impacts created by the products, and the social costs to farm communities caused by dicamba versus non-dicamba users. Rather than allowing the EPA to reconsider the registrations, the court vacated the product registrations altogether.

The EPA issued a Cancellation Order for the three products on June 8, stating that distribution or sale by the registrants is prohibited as of June 3, 2020. But the agency also decided to examine the issue on the minds of many farmers: what to do with the products. Applying its “existing stocks” policy, the EPA examined six factors to help it determine how to deal with stocks of the product that are in the hands of dealers, commercial applicators, and farmers. The EPA concluded that those factors weighed heavily in favor of allowing the end users to use the products in their possession, but that use must occur no later than July 31, 2020 and that any use inconsistent with the previous label restrictions is prohibited.

Despite the EPA’s Cancellation Order, however, the Ohio Department of Agriculture is the final arbiter of the registration and use of pesticides and herbicides within Ohio. ODA patiently waited for the EPA to act on the Ninth Circuit’s ruling before issuing its guidance for Ohio users of the dicamba products. In its guidance released today, ODA stated that:

- After careful evaluation of the court’s ruling, US EPA’s Final Cancellation Order, and the Ohio Revised Code and Administrative Code, as of July 1, 2020, these products will no longer be registered or available for use in Ohio unless otherwise ordered by the courts.
- While use of already purchased product is permitted in Ohio until June 30, further distribution or sale of the products is illegal, except for ensuring proper disposal or return to the registrant.
- Application of existing stocks inconsistent with the previously approved labeling accompanying the product is prohibited.

But the roller coaster ride doesn’t necessarily end there. Several dangling issues for dicamba-based product use remain:

- We’re still waiting to see whether the plaintiffs who challenged the registrations (the National Family Farm Coalition, Center for Food Safety, Center for Biological Diversity, and Pesticide Action Network North America) will also challenge the EPA’s Cancellation Order and its decision to allow continued use of the products, and will request immediate discontinuance of such uses.
- Bayer Crop Science, as an intervenor in the Ninth Circuit case, could still appeal the Ninth Circuit’s decision, as could the EPA.
- All of these orders add complexity to the issue of **liability for dicamba damage**. That issue has already become quite controversial, often pitting farmer against farmer and requiring the applicator or damaged party to prove adherence to or violation of the complicated label restrictions. But the Ninth Circuit’s attention to the risks of adverse impacts from the products raises additional questions about whether an applicator who chooses to use the products is knowingly assuming a higher risk, and whether a liability

insurance provider will cover that risk. For this reason, growers may want to have a frank discussion with their liability insurance providers about coverage for dicamba drift.

The dicamba roller coaster ride will surely continue, and we'll keep you updated on the next development.

Read the ODA's *Official Statement Regarding the Use of Over-the-Top Dicamba Products* [here](#).

Additional update from Peggy Hall.

It appears that there will not be an immediate federal order to cease use of dicamba, despite the emergency motion filed by the National Family Farm Coalition last Thursday that asked the Ninth Circuit to void the EPA's order that allow use of existing stocks. Since then:

- *The Ninth Circuit Court of Appeals has directed the EPA to respond to the emergency motion, giving the agency until the end of the work day on **June 16** to do so.*
- *The court has also directed the Coalition to then file a reply to the EPA's response, and to do so by the end of the workday on **June 18**.*

This suggests that the court will make a ruling after June 18. For the time being, then, the Court of Appeals has not taken any further action that would disallow ODA's allowance of the use of dicamba in Ohio until June 30.

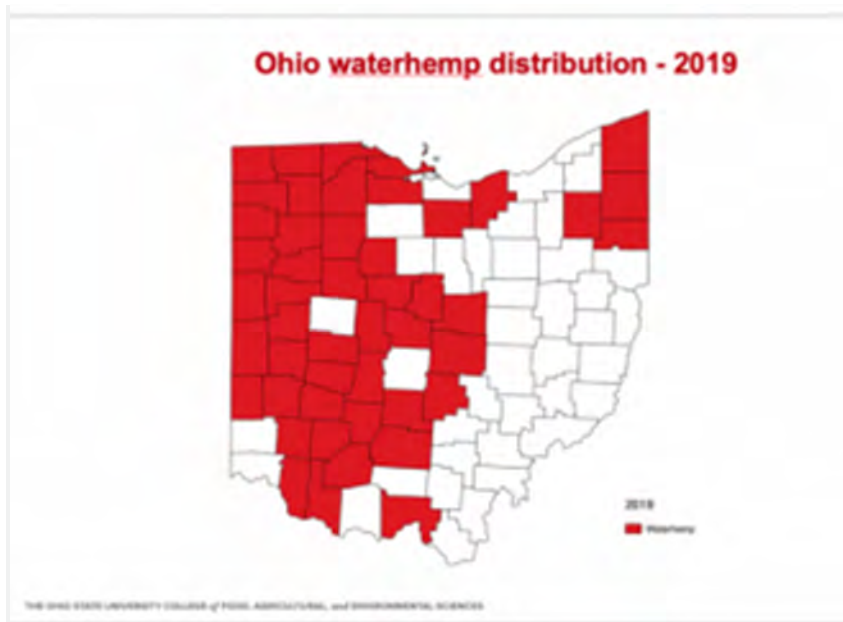
*However, as I mentioned in my last blog post on the Ohio Ag Law Blog, it would be wise for applicators to **check in with their insurers** to determine whether their insurers will cover a drift incident given the "vacated" registration status of XtendiMax, FeXapan and Engenia. Some insurers have already indicated that they will not ensure coverage.*

Be aware, also, that Corteva Agriscience (maker of FeXapan) and BASF (maker of Engenia) have filed motions to intervene in the case. Although it's doubtful that the court will allow intervention at this point in the process, the motions suggest that the three companies (Bayer Crop Science is already an intervenor in the case) are planning an appeal of the Ninth Circuit's decision to vacate the registrations. That appeal would go to the U.S. Supreme Court.

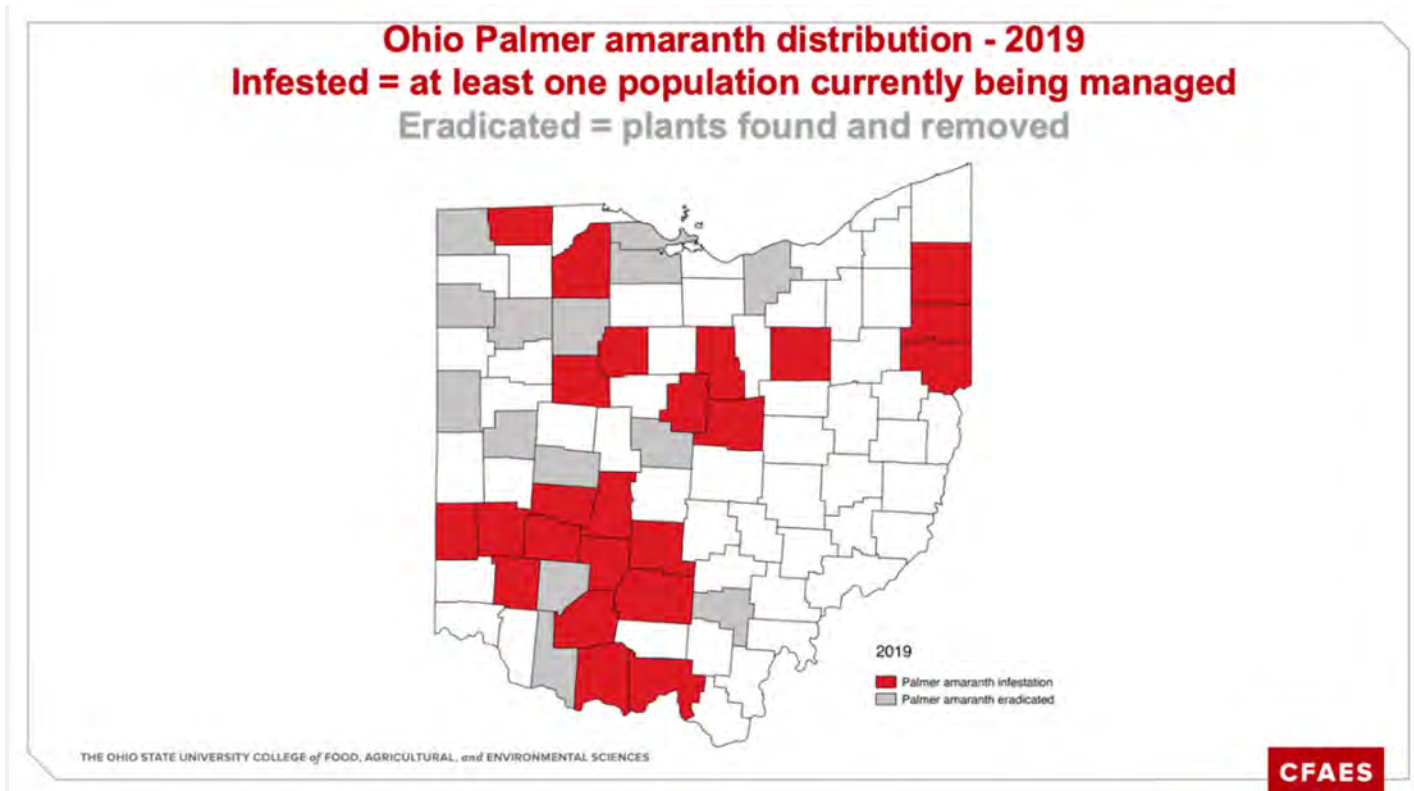
Author(s):

[Peggy Hall](#)

Distribution of waterhemp and Palmer amaranth in Ohio



The maps that accompany this article show our current knowledge of waterhemp and Palmer amaranth distribution in Ohio. These are based on information from a survey of OSU Extension County Educators, along with information we had from samples submitted, direct contacts, etc. We still consider any new introductions of Palmer amaranth to be from an external source (brought in from outside Ohio) – hay or feed, infested equipment, CRP/cover/wildlife seedings. Palmer is not really spreading around the state, and as the map shows, we have had a number of introductions that were immediately remediated. The number of counties where an infestation(s) is being managed is still low, and within those counties, the outbreak occurs in only a few fields still. Waterhemp is much more widespread in Ohio and is spreading rapidly within the state from existing infestations to new areas via equipment, water, animals, etc. We do not have Ag Educators in all counties, and even where we do, infestations can occur without us knowing about them. Feel free to contact us with new information to update the maps.



Palmer amaranth map 2019 Ohio

Among the weed photos sent to the Agronomy Team members for identification, a fair number lately has been for the purposes of “pigweed” identification. “Pigweed” as used here can refer to waterhemp, Palmer amaranth, spiny amaranth, Powell amaranth, and redroot/smooth pigweed (these two are mostly the same for ID/control purposes). It’s almost impossible to tell these apart when they are very small, but this gets easier by the time they are 4 inches tall. Waterhemp and Smooth/redroot pigweed are still the most common. Waterhemp is smooth all over with a somewhat elongated leaf with smooth edges, and leaves sometimes can be a darker and glossier green than pigweed. Smooth/redroot pigweed will have a hairy/rough stem (more defined as it gets larger), with relatively nonglossy leaves that are widest in the middle with “rougher” edges. Various resources are available to help with identification, including our [pigweed ID fact sheet](#) and [Youtube video](#). Identification of pigweeds is not necessarily straight forward, so feel free to contact your local extension educator or OSU weed scientists (loux.1@osu.edu or ackley.19@osu.edu) for help with identification.

Author(s):
Mark Loux

Changes in status of dicamba product labels for Xtend soybeans – a recap



On June 3, the US 9th Circuit Court of Appeals issued a decision in a case concerning the use of dicamba on Xtend soybeans. This decision voided the labels for XtendiMax, Engenia, and FeXapan that allows use on Xtend soybeans. Tavium was not included in this decision, because it was not approved for use when the case was initially filed. Several excellent articles covering this decision can be found here on the OSU Ag Law blog (<https://farmoffice.osu.edu/blog>). EPA stated on June 8, providing further guidance about what this decision means for the use of dicamba for the rest of this season. The gist of this decision was the following:

“EPA’s order addresses sale, distribution, and use of existing stocks of the three affected dicamba products – XtendiMax with vapor grip technology, Engenia, and FeXapan.

1. Distribution or sale by any person is generally prohibited except for ensuring proper disposal or return to the registrant.
2. Growers and commercial applicators may use existing stocks that were in their possession on June 3, 2020, the effective date of the Court decision. Such use must be consistent with the product’s previously-approved label, and may not continue after July 31, 2020.”

ODA subsequently issued a statement regarding the registration and use of these products in Ohio, stating that any application must happen before July 1, 2020. Partial text from this statement:

“The registration of these products (*XtendiMax*, *FeXapan*, and *Engenia*) in Ohio expires on June 30, 2020. After careful evaluation of the court’s ruling, US EPA’s Final Cancellation Order, and the Ohio Revised Code and Administrative Code, as of July 1, 2020, these products will no longer be registered or available for use in Ohio unless otherwise ordered by the courts.

While the use of the already purchased product is permitted in Ohio until June 30, 2020, the Court’s decision and US EPA’s order make further distribution or sale illegal, except for ensuring proper disposal or return to the registrant. Application of existing stocks inconsistent with the previously approved labeling accompanying the product is prohibited. If you have questions about returning unused products, please reach out to your pesticide dealer’s representative.”

So what is the impact of all of this, and how do we adjust herbicide programs to deal with it? Some things to consider:

- The majority of the POST applications on Xtend soybeans occur prior to the end of June anyway, although some certainly do occur in July. And while XtendiMax, FeXapan, or Engenia cannot be applied after June 30, the previous label restrictions are also still in place – POST application must occur before the R1 stage or no later than 45 days after soybean planting, whichever occurs first. So if the soybeans were planted by May 15, products would have to be applied prior to June 30 anyway, and if planted later, they would have to be applied before R1 or before June 30, whichever occurs first.

- It’s important to keep in mind that the emergence of most summer annual weeds peaks in early to mid-June and then starts to decline, although there can be later flushes of weeds with rainfall events especially. So except where soybeans are planted late and are still small, applying POST herbicides in mid to late June catches most of the weeds and provides effective control. We expect the soybean canopy to have developed adequately to suppress weeds emerging after the POST application. Based on our research, this can work even in later-planted soybeans just due to the fact that weed emergence slows down towards the end of June.

- Given how difficult it can be to find suitable weather to apply the dicamba products, we suggest looking for a window to apply and doing so. We have 15 days left in June to apply legally, and probably more like seven days factoring in weather and application stewardship requirements. Waiting until the end of next week is possibly not a great plan.

- Registration of Tavium, the premix of s-metolachlor and dicamba with VaporGrip, was not affected by this decision and remains a legal option even after June 30. Tavium can be applied through the V4 soybean stage, or through 45 days after planting, whichever occurs first.



Ragweed

- Without the availability of dicamba to use POST, the Xtend soybean becomes an old school Roundup Ready soybean. THE primary POST option would be a mix of glyphosate with an ALS inhibitor (Classic, FirstRate, etc.) or PPO inhibitor (Flexstar and generics, Cobra/Phoenix, Ultra Blazer). These would also be the options where a second POST application is necessary after June 30. Not all of these may be viable in July due to soybean growth stage, PHI, or crop rotation restrictions
- Weeds of greatest concern here are marestalk, waterhemp, Palmer amaranth, giant ragweed, and also common ragweed in NW Ohio. These five weeds are mostly glyphosate and ALS resistant in Ohio, and PPO resistance is fairly common in waterhemp and also occurs in some common ragweed and Palmer amaranth populations. None of these mixtures will be effective for POST marestalk control. Effectiveness on the other weeds will be variable among and within fields across Ohio. Some giant ragweed populations

are still partially controlled by glyphosate, so plant size and glyphosate rate and the number of applications make a difference. We would expect a complete lack of waterhemp control in some fields.

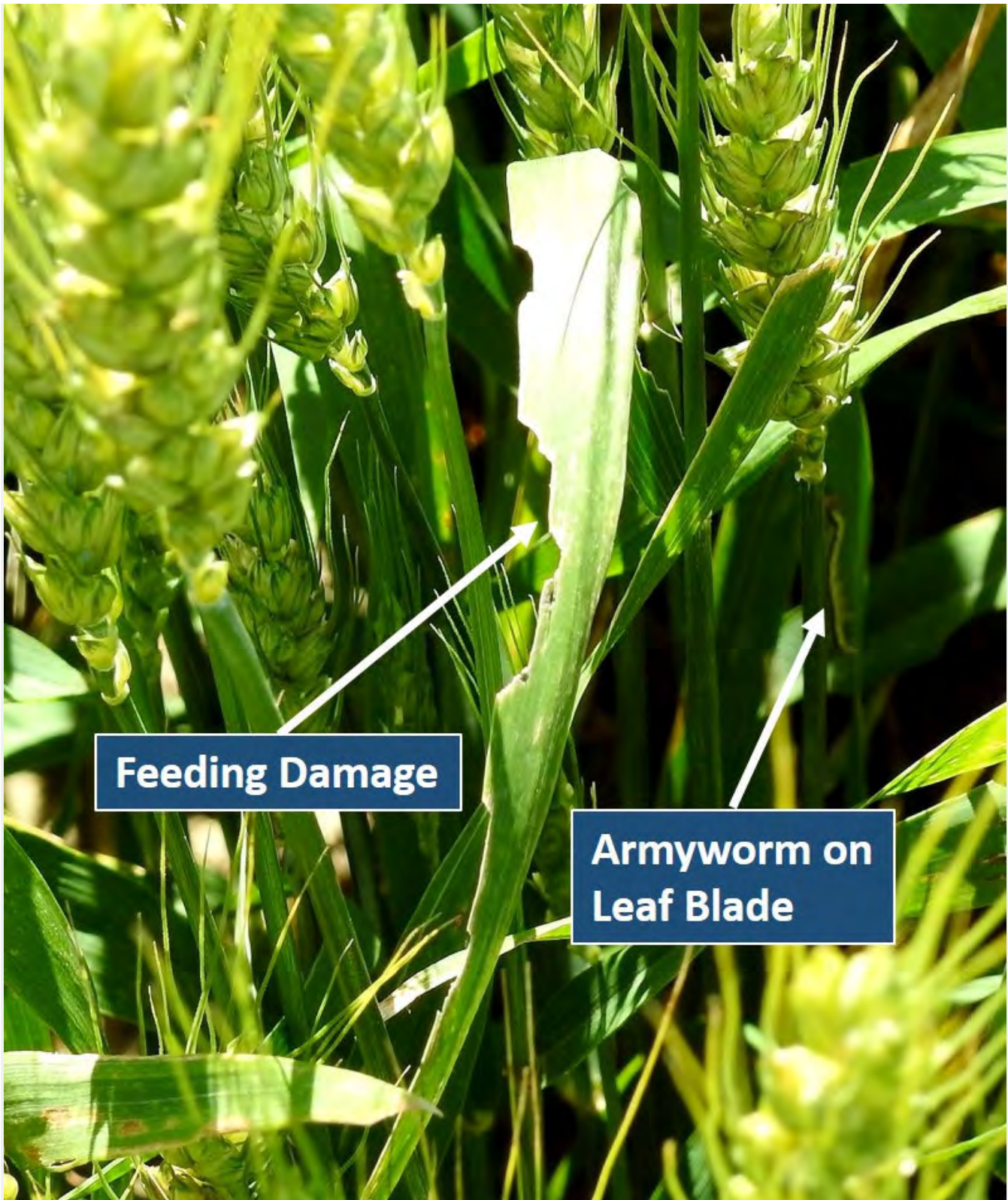
- Another option would be to replant Xtend soybean fields with another type of soybean that provides for the POST options of 2,4-D choline and/or glufosinate – Enlist, LibertyLink, or LLGT27 – should seed still be available. This strategy should be used for double-crop soybeans also unless weeds can be handled well enough with the mixtures mentioned above.

Author(s):
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True Armyworm Infestations



We received many reports of true armyworm infestations in wheat, barley, and corn. These are black or green caterpillars with stripes along the side and orange heads. In the spring, true armyworm moths migrate from the south and lay eggs in grasses such as forage and weed grasses, winter wheat and barley, and rye cover crops. When the eggs hatch, the larvae can significantly damage wheat and barley before then moving to young corn. Usually, moth flights occur in April, but we may have had a second peak the first or second week of May—it's likely the caterpillars feeding now are from this later flight. Right now, wheat, barley, and corn should be inspected for true armyworm populations. Armyworms like to hide during the day and feed at night, so scouting should occur at dusk or dawn, and/or on cloudy days.



Feeding Damage

**Armyworm on
Leaf Blade**

Corn: True armyworm in corn cause the most damage when planted in no-till grassy fields, such as a rye cover crop. In this case, after feeding on the cover crop, the caterpillars shift onto the emerging corn. The name armyworm comes from the caterpillars' behavior of migrating en masse from one location to another. Thus, one should pay particular attention to cornfields adjacent to wheat fields that may have supported a high armyworm population, especially the first several rows into the cornfield. As the wheat matures and dries down, it could stimulate the caterpillars to move.

One may only need to treat the edge of the field closest to the wheat field from which the caterpillars are marching. If armyworms are found in a cornfield, check for the percentage of plants damaged in 5 sets of 20 plants. If more than 10% of the stand has feeding damage, it may indicate a large infestation, and the field should be re-checked in a few days to see if defoliation is increasing. If defoliation has increased and plants have two or more caterpillars per corn seedling, an insecticide application may be necessary. However, if most larvae are longer than 1 inch, then much of the feeding is complete as the caterpillars will begin to pupate. Also, look for the presence of diseased (black and shriveled) or parasitized caterpillars (having a few or several small, white egg cases on

their body)—if found, do not include them in your counting.



Armyworm caterpillars

If defoliation exceeds 50%, even a rescue treatment may not recover the field without a significant impact on yield. According to the Handy Bt Trait Table (https://agrilife.org/lubbock/files/2020/02/BtTraitTable_FEB_2020.pdf), only the Vip3A (e.g., Viptera) Bt trait is effective against true armyworm. Insecticidal seed treatments may offer some control but can be overwhelmed with high populations. Plus, insecticidal seed treatments last only

about 4-6 weeks after planting.



Fecal pellets or frass

Wheat, Barley, and other Small Grains: Examine a 4 square foot area in 5 locations throughout the field. If the average of caterpillars less than 1 inch long is greater than 16, or if head-cutting is occurring, treatment may be necessary. Keep in mind that more mature wheat can tolerate a lot of armyworm feeding. Fields defoliated in Feekes 11.3 growth stage will suffer less yield loss from those defoliated at earlier growth stages. As with corn, watch for diseased or parasitized armyworms.

Soybeans: True armyworms CANNOT survive on soybean. They are grass feeders, and any broadleaf plants are a poor food source. Spraying soybean for true armyworms are not needed.

Insecticides: Many foliar insecticides are available for control of true armyworm. If applying in small grains, be careful of the pre-harvest interval (PHI). A long PHI may prevent a timely harvest.

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Wheat Harvest Preparation: Grain Bin Edition



The 2020 Ohio wheat harvest is rapidly approaching. Now is the time to prepare for a successful harvest. Before the combine goes to the field, a key component will be to have grain handling and storage facilities adequately sanitized. Taking the proper steps now should help eliminate insect infestations that can significantly reduce grain quality or salability.

The majority of insect infestations that occur in stored grains are a result of migration into the bin. These insect populations will be present in piles of spilled grain from the previous year, livestock feed in the area, litter, and weed growth. Newly harvested wheat can also be contaminated when it comes in contact with infested grain that was not cleaned from the combine, trucks, wagons, augers, dump pits, or grain leg buckets. Another source of contamination can be carryover grain in a bin that was not correctly emptied.

Proper sanitation begins outside the bin. Brush/sweep or vacuum out any grain left in the combine, wagons, or grain carts. Remove all vegetation that grows within ten feet of the bins. Then spray this area with a residual herbicide to prevent regrowth. Remove any grain spills or other debris that might have accumulated during the load out of the previous crop. This step will minimize the habitat available and make migration to the bin more challenging.

Inside the bin, it is crucial to make sure that there was no grain left from the previous crop. Thoroughly sweep or vacuum any area that grain could potentially be sitting on, which includes any ledges, ladders, or

braces. Remove all dust and debris from fans, aeration ducts, and under slotted floors (when possible). Insects may remain in these hard to clean areas. While the bin is empty, an insecticide application should be completed to combat this potential problem. The treatment will help create another barrier for insects that try to migrate into the bin, but should not be used as a replacement for proper sanitation. The best time to apply insecticides to empty bins is two to three weeks before harvest. Some of the products that can be used for this application are Diacon II (s-methoprene), Storcide II (deltamethrin and chlorpyrifos-methyl (3 ppm)), Tempo 20WP (cyfluthrin), Tempo SC Ultra (cyfluthrin) or diatomaceous earth products. These products can also be applied to the external walls of the bin to create a secondary barrier. It is critical to read the full product label and follow all label instructions.

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Other Articles

If you want to know about Soybean Exports and the Potential for 2020 visit the following YouTube video by Ben Brown at <https://farmoffice.osu.edu/node/1153>

Ohio Legislative Update

By:Ellen Essman, Senior Research Associate Tuesday, June 16th, 2020

There's been a lot of action in the Ohio General Assembly over the last few weeks ahead of the body's summer break. Specifically, the House of Representatives has considered bills involving a student debt forgiveness program for veterinarians, animal abuse, road safety in Amish country, immunity for apiary owners for bee stings, and a bill meant to support county fairs during the COVID pandemic. Finally, both the Ohio House and Senate have passed bills that would limit liability involving the transfer of COVID-19.

Animal-drawn vehicle lighting. [House Bill 501](#), concerning slow-moving, animal drawn vehicles, was introduced in February of 2020 and was first heard in the House Transportation & Public Safety committee

on June 2. The purpose of HB 501 is to “clarify the law governing slow-moving vehicles and to revise the lighting and reflective material requirements applicable to animal-drawn vehicles.” The bill would require animal-drawn vehicles, like the buggies typically driven by the Amish, to have the following: (1) at least one white lamp in the front visible from 1,000 feet or more; (2) two red lamps in the rear visible from 1000 or more; (3) one yellow flashing lamp mounted on the top most portion of the rear of the vehicle; (4) a slow moving vehicle (SMV) emblem; and (5) micro-prism reflective tape that is visible from at least 500 feet to the rear when illuminated by low beams on a vehicle. In the committee hearing, HB 501 had mostly positive feedback, and was touted as a solution to crashes involving animal-drawn vehicles in poor visibility.

When the bee stings. [HB 496](#), which would grant apiary owners immunity for bee stings, passed the Ohio House on June 9, 2020. The bill would protect the owner of a registered apiary from liability in the case of a personal injury or property damage from a sting if they do the following: (1) implement and comply with the beekeeping industry best management practices (BMPs) as established by the department of agriculture; (2) keep correct and complete records of their implementation and compliance with BMPs and make the records available in a legal proceeding; (3) comply with local zoning ordinances pertaining to apiaries; (4) operate the apiary in compliance with the Ohio Revised Code. Notably, the bill would not protect apiarists from harming a person intentionally or through gross negligence. The bill now moves on to the Ohio Senate for consideration.

Debt forgiveness for veterinarians. The House also passed [HB 67](#) on June 10, 2020. This bill would create the “veterinarian student debt assistance program,” which would determine which veterinarians would receive student debt assistance, and how much each person would receive. The amount awarded must be between \$5,000 and \$10,000. Essentially, if the new veterinarian agrees to live in Ohio for a certain amount of time, and to participate in “charitable veterinarian services” like spaying and neutering for a nonprofit organization, humane society, law enforcement agency, or state, local, or federal government, student debt could be forgiven. The details, including how many hours a veterinarian would need to work for charity, the types of charities that qualify, the amount of time a person must live in Ohio, and others would be determined by State Veterinary Medical Licenses Board.

Animal abuse. [HB 33](#) passed the lower chamber on June 11, 2020. This bill would require veterinarians, social service professionals (people who work at the county Job and Family Services, Children’s Services), counselors, social workers, and other similar professions to report violations against “companion animals” (dogs, cats, other animals kept in a residential dwelling), to law enforcement and/or the county humane agent or animal control officer. People in these professions would have to report when they have “knowledge or reasonable cause to suspect” that violations to companion animals are happening, and they know or suspect that a child or older adult (60 years and older) lives in the residence, and they know or suspect that the violation is having an impact on the child or older adult. Violations include animal abandonment, injury, poisoning, cruelty, fighting, dog fighting, or sexual conduct with an animal.

Assistance for county fairs. If you've heard about any Ohio legislation recently, it was likely this bill. [HB 665](#) was passed by the House after much debate on June 11, 2020. The 61 page bill makes a lot of changes to the statutory language. Importantly, the bill would make it a misdemeanor for patrons not to follow written warnings and directions on amusement rides. The bill also makes a number of changes to how county agricultural societies operate. First of all, members of a county agricultural society would have to be residents of the county. Members would have to pay a fee to retain membership, and the societies would have to issue a printed membership certificate to members. In counties with an ag society, the county treasurer must transfer \$1600 to the society each year as long as the society holds its annual exhibition, reports to the Ohio Department of Agriculture (ODA), and the director of ODA presents the society with a certificate showing it has followed applicable laws and regulations. The bill also addresses independent agricultural societies, to which similar rules apply. The county board of commissioners would also be required to appropriate at least \$100 to the ag society's junior club. The bill would require ag societies to create a report of its proceedings during the year, file a financial report and send it to the ODA director, and publish an announcement in the county newspaper or the society's website a statement about the filing of the financial report, and contact information for people who want to obtain a copy of the report. The bill also outlines the circumstances under which an ag society can sell fairgrounds or parts of fairgrounds. Finally, an amendment to the bill was adopted that would allow rescheduling of horse races. So what was so controversial about this bill? A suggested amendment to the bill led to a heated argument in the House. The amendment would have banned sales and displays of confederate flags and other memorabilia at county fairs. This ban is already in place at the Ohio State Fair, but not county fairs. Ultimately, the bill passed in the house, but this amendment did not. The vote to table the amendment was largely along party lines, with every Republican except one voting against the amendment, and all Democrats voting for.

COVID-19 liability. The House passed [HB 606](#) back in May, and we discussed it in a blog post [here](#). As a refresher, the bill is meant to protect businesses, schools, corporations, people, etc. from liability. It would accomplish this with the declaration: "orders and recommendations from the Executive Branch, from counties and local municipalities, from boards of health and other agencies, and from any federal government agency, do not create any new legal duties for purposes of tort liability." In other words, as long as the person, school, or business did not expose or transfer the virus recklessly, intentionally, or with willful and wanton conduct, someone could not bring a civil action for injury, death, or loss to person or property if they contract COVID from the entity. Furthermore, the bill also provides temporary civil immunity for health care providers, grants immunity to the State for care of persons in its custody or if an officer or employee becomes infected with COVID-19 in the performance or nonperformance of governmental functions and public duties, and expands the definition of "governmental functions" for purposes of political subdivision immunity to include actions taken during the COVID-19 pandemic. The Ohio Senate passed a similar bill, [SB 308](#). Unlike the House bill, SB 308 provides immunity only in the health care context. The bill would provide immunity from civil liability for doctors, nurses, and others working in the health care arena during "disasters" like the current pandemic. It would also provide a qualified immunity from liability to services providers for "manufacturing" and any other service "that is

part of or outside of a service provider's normal course of business conducted during the period of a disaster or emergency declared due to COVID-19 and ending on April 1, 2021.”

What's next? The Ohio Senate is scheduled to meet next week on an “as needed” basis. During these tentatively scheduled sessions, the senate could consider the bills that have cleared the House—HBs 496, 67, 33, and 665. If passed by the Senate, the bills would then move on to Governor DeWine for approval. We will keep you updated on what the Senate and Governor decide. In the case of the COVID immunity bills, each bill moved to the opposite house, where they are currently being considered in committees. We'll have to wait and see if one or both are sent on to DeWine, or if the two houses choose to somehow combine the bills into one document.

Newly discovered plant gene could boost phosphorus intake

Date: June 16, 2020

Source: University of Copenhagen

Source: <https://www.sciencedaily.com/releases/2020/06/200616135816.htm>

Researchers from the University of Copenhagen have discovered an important gene in plants that could help agricultural crops collaborate better with underground fungi -- providing them with wider root networks and helping them to absorb phosphorus. The discovery has the potential to increase agricultural efficiency and benefit the environment.

It is estimated that about 70 percent of phosphorus fertilizer used in Danish agriculture accumulates in soil, whereas only 30 percent of it reaches plants.

Quid pro quo -- that's how one might describe the "food community" that the majority of plants have with mycorrhizal fungi. Plants allow fungi to live among their roots, while feeding them fat and sugar. And in return, fungi use their far-reaching hypha (filamentous branches) to capture vital soil nutrients for plants, including the important mineral phosphorus.

Now, researchers at the University of Copenhagen's Department of Plant and Environmental Sciences have discovered an extraordinary plant gene, the CLE53 gene, which regulates cooperation between fungi and plants. The gene is central to a mechanism that controls how receptive plants are to working with mycorrhizal fungi. Down the road, this newfound knowledge could serve to deliver better harvests and reduced fertiliser use.

"Similar genes are found in all plants -- including agricultural crops. So, by mutating or turning off the CLE53 gene in a crop plant, it is more likely for a plant to become symbiotically involved with a fungus. In doing so, it becomes possible to reduce the need for phosphorus fertilizers, as plants improve at absorbing preexistent phosphorus

from soil," explains Assistant Professor Thomas Christian de Bang of the Department of Plant and Environmental Sciences.

The research has been published in the *Journal of Experimental Botany*

Seventy percent of phosphorus fertilization does not reach plants

Phosphorus is vital for all plants. However, the problem with phosphorus use in agriculture is that more of it is applied for fertilisation than can be absorbed by crops. It is estimated that about 70 percent of phosphorus fertilizer used in Danish agriculture accumulates in soil, whereas only 30 percent of it reaches plants. With rain, there is an ever present risk that some of the accumulated phosphorus will be discharged into streams, lakes and the sea.

Paradoxically, researchers have observed that when phosphorus levels in soil are high, plants are less likely to collaborate with fungi, meaning that they become worse at absorbing nutrients.

"Through a range of experiments, we have demonstrated that a plant does not produce the CLE53 gene if it lacks phosphorus. However, when the phosphorus levels in a plant are high, or if the plant is already symbiotically involved with a fungus, then the level of CLE53 increases. Our study demonstrates that CLE53 has a negative effect on a plant's ability to enter into symbiosis with a fungus, and thereby absorb phosphorus most effectively," says Thomas Christian de Bang.

Requires CRISPR approval

The genomic editing of plants is legal in a number of non-EU countries -- e.g., China, the US, Switzerland and the UK. However, within the EU, there is no general acceptance of gene-editing methods, such as CRISPR, to alter plants and foodstuffs.

Therefore, the researchers' discovery has, for the time being, a poorer chance of being used in Denmark and the rest of the EU.

"One can use the technology in other parts of the world, and getting started would be relatively straightforward. My guess is that within five years, plants will be tested and refined in such a way that they become more symbiotically involved with fungi and absorb more phosphorus. Here in Denmark and throughout the EU, an acceptance is required for gene editing and an amended approach to approval procedures for these types of plants," says Thomas Christian de Bang.

Facts:

90% of all plants engage in symbiotic relationships with mycorrhizal fungi, which popularly said, extend the root networks of plants, thus helping them to obtain enough phosphorus, water and other nutrients.

In order to benefit from the ability of mycorrhizal fungi to extract phosphorus from soil, a plant must feed it with fat and sugar. To avoid spending too much energy on the sponge, if for example, it is experiencing high phosphorus levels or has already been colonised by a fungus, the plant may switch off symbiosis.

It is estimated that Danish farms fertilise with roughly 30 kilos of phosphorus per hectare of land.

Of this, roughly 30 percent makes its way to crops, while the remaining 70 percent binds to soil.

With rain, some of this accumulated phosphorus is flushed away via surface runoff, into nearby streams, lakes and the sea. This increases algae growth and can kill both plants and wildlife.

Phosphorus is a finite natural resource, one that is expected to eventually be depleted.

The research is funded by the Novo Nordisk Foundation and the University of Copenhagen

Previous research has shown that a similar mechanism exists for symbiosis between legumes and rhizobium bacteria. This involved a CLE gene as well, albeit a different one than the researchers have now discovered.

University of Copenhagen. "Newly discovered plant gene could boost phosphorus intake." ScienceDaily. ScienceDaily, 16 June 2020. <www.sciencedaily.com/releases/2020/06/200616135816.htm>.

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