

Auglaize County OSU Extension Weekly Agriculture Newsletter – April 15, 2020

Scouting and Latest Information



Purple deadnettle and other weeds in soybean stubble



Wheat field

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

Thank you to those individuals that participated in the fourth Auglaize County Ag Talk meeting on Tuesday. We had 17 people participate. As mentioned in a special message on Monday, because of the COVID-19 issue, I can no longer hold face-to-face meetings, so I wanted to start a virtual meeting so we can stay in contact. Therefore 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 meeting will also be our monthly Ag Breakfast meeting. The two topics for next week are weather by Aaron Wilson and Current and Future Grain Markets by David Bambauer** Please join us every Tuesday for Auglaize County Ag Talk.

If you want to contact Brigitte Moneymaker you may contact her at moneymaker.4@osu.edu or 434-962-3525.

If you are a buyer or seller of hay or straw, let me know and I can keep a list to share with others. Currently an individual let me know they have 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. Call the OSU Extension office at 701-541-0043 or e-mail me at stachler.1@osu.edu to get the contact information.

Joke: What do you get with you cross a robot and a tractor??

Rain fell four days this past week. Rainfall on Wednesday, April 8th ranged from 0.02" near Uniopolis to 0.2" near Harris and St. Rt. 29 roads, near St Rt. 66 and Vogel roads, and near Townline-Kossutha and Glynwood roads. Rainfall on Saturday, April 11th ranged from 0" near Mercer Line and St. Rt. 197 roads to 0.15" near Sommer and Ft. Recovery - Minster roads. Rainfall on Sunday ranged from 0.07" near Bloody Bridge to 0.31" near Valley and Idle roads. Rainfall on Monday ranged from 0" at 6 locations across the county to 0.03" near Kettlersville and Santa Fe-New Knoxville Roads, near Valley and Idle roads, and near Lock 2 and Tri-Township roads. Rainfall for the week ranged from 0.15" near St. Rt. 501 and Buckland-Holden roads to 0.55" near Lock 2 and Tri-Township roads. Rainfall for the week averaged 0.38", 1.48", 1.01" less than last week.

The average high temperature now is 61 degrees F, another three more than last week! Temperatures were above normal for 2 days of the week and below normal for 5 days of the week. The range in high temperature for the week was 42 to 71 degrees F. The average high temperature for the week was 56.3 degrees F, which is 4.8 degrees F cooler than last week and 4.3 degrees F below the current normal high temperature.

Wheat



Poor drainage showing up in wheat



2nd node wheat

Wheat in most fields has started to joint and in some fields the second node is already visible. Check fields carefully to see if they have jointed before applying dicamba, 2,4-D and MCPA. These products can severely injure wheat when applied after jointing, although some say low rates of 2,4-D are safe to the 2nd node stage. Peak and Powerflex are not longer available if the 2nd node is present. With the constant rainfall, wheat quality continues to deteriorate! This is my current rating of the wheat crop: 5% excellent, 45% good, 40% fair, and 10% poor. Last week's rating was the same.

Alfalfa



Freeze damage to alfalfa



Alfalfa field with weeds



Height of alfalfa

Alfalfa is growing fairly good but was damaged by the cold weather late last week as seen above. Alfalfa is up to 7" already! We are at 253 heat units for alfalfa weevil activity. Between 300 and 350 alfalfa weevil start to hatch, so we are safe for now, but need to get ready to start scouting late next week.

Corn

Nothing planted yet.

Soybean

Nothing planted yet.

Weeds



Cressleaf groundsel in wheat



purple deadnettle in alfalfa

Scout wheat and hay fields for weeds especially for poisonous weeds like poison hemlock, cressleaf groundsel, and others. Remember the toxins are still present in dried cressleaf groundsel, so the number of plants in the wheat field above are too many to be sold for straw because cattle may pick the weeds out of the straw. To control cressleaf groundsel in wheat apply Huskie at 15 fl oz/A. However, double crop soybeans and some cover crops can't be planted. For double crop soybean the best option, which may not be completely effective and has risk for wheat injury, is to apply Express at 0.33 or 0.5 oz/A depending upon formulation and add 2,4-D ester at 0.25 lb ae/A or 2,4-D amine at 0.5 lb ai/A. There are no longer any herbicide options this spring to control cressleaf groundsel in alfalfa. There If you need help planning your herbicide programs, feel free to call me.

Insects

Armyworm moths are building to the south! Sweet corn growers will need to be scouting for corn flea beetle as they may be severe this year.

There WERE changes to the Engenia, FeXapan, and Tavium labels. There were NO changes to the XtendiMAX label. The Engenia label still has the most approved products compared to XtendiMAX and FeXapan. No new herbicides were added to the XtendiMAX label this past week, which totals 238 herbicides. No new adjuvants were added the XtendiMAX label, now totaling 414. 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 95 DRA's. No new nutritional products were added from the XtendiMAX label which totals 246. No new product was added to the Insecticides, Fungicides, Plant Growth Regulator and Other group on the XtendiMAX label which totals 105. Twenty-two new adjuvants were added to the Engenia label, which now totals 582. Three new herbicides were added to the Engenia label,

which brings the total herbicide count to 170. No new products were added to the Other category (growth regulators and fungicides) on the Engenia label, which totals 31. Three new insecticides were added to the label which currently has 37 products. Two new Drift Reducing Adjuvants (DRA's) were added to the Engenia label, which totals 128. No new nozzles were added to the Engenia label, which totals 31. Six new nutritional products were added to the Engenia label which totals 229 products. No new products was added to the pH Modifier group of the Engenia label which totals 17 products. The FeXapan label has many of same the 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 per product type that must be mixed with FeXapan. There are some products that need no DRA added! There are 13 glyphosate formulations, 228 herbicides, 41 insecticides, 17 fungicides, 94 DRA's, 317 adjuvants, 202 nutritionals, 29 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.

Upcoming Meetings

1. **Auglaize County Ag Talk.** Every Tuesday from 8:30 to 9:30 AM we will have a virtual agricultural meeting. The third Tuesday will be the Ag Breakfast. Next week's topic is Weather by Aaron Wilson and Grain Market Update by David Bambauer. 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. **Ag Madness.** OSU Extension is offering a virtual educational session at 9:00 AM, Noon, and 3:00 PM. Go to the following website for the schedule of topics: go.osu.edu/AgMadness. I have attached a flyer with this newsletter about this awesome educational experience.
3. **The OSU Farm Office is Open.** The OSU Extension Farm Office Team will open our offices online and offer weekly live office hours on Mondays from **8:00-9:30 pm EST**. 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>.

4. 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: a transfarmer!!

Very Little Leaf Diseases Currently in Winter Wheat



Septoria tritici leaf blotch



Powdery mildew



Stagonospora glume blotch



Stagonospora leaf blotch

I have not been in as many wheat fields as normal, but at this time there is very little if any early season winter wheat leaf diseases. Wheat is currently at the first to second node stage of development, a critical time to start scouting for early season leaf diseases. The three most common early season leaf diseases of winter wheat are *Septoria tritici* leaf blotch, powdery mildew, and *Stagonospora* leaf blotch.

Septoria tritici leaf blotch is recognized as irregular, reddish brown blotches on lower leaves of the plant. As lesions age, the centers become bleached turning ash-white. As this happens small black fruiting bodies called pycnidia start to develop in the centers of the lesions. *Septoria tritici* leaf blotch attacks during extended periods of cool (60-70 degrees Fahrenheit) and wet weather. The time to apply a fungicide is when one to two lesions are found on the leaf below the flag leaf (last leaf).

Powdery mildew is recognized as small, white powdery or cottony pustules scattered over the leaves and stems. The pustules can form on the upper and lower sides of the leaf. Chlorotic (yellow) patches may later surround the pustules. As leaves age small black fruiting bodies called cleistothecia develop within the white pustules. Powdery mildew attacks during cool (60 to 80 degrees Fahrenheit) conditions and a cyclical moisture pattern. Fungicides should be applied when two to three lesions can be found on the leaf below the flag leaf.

Stagonospora leaf blotch begins as chocolate-brown spots that enlarge into lens-shaped lesions having dark brown margins. As time progresses, the lesions coalesce (merge together) giving the leaf a blotchy appearance. Some wheat varieties develop dark brown centers in the tan leaf lesions. Stagonospora leaf blotch attacks during warm (68 to 80 degrees Fahrenheit) and rainy periods. Fungicides should be applied when one to two lesions are found on the leaf below the flag leaf.

When scouting for the presence of the diseases focus on fields having susceptible varieties to these diseases. In most cases fungicides are not warranted on varieties that are resistant to these diseases.

The following fungicides are the most effective at controlling all three leaf diseases: Tilt 3.6 EC; Aproach Prima SC; Miravis Ace SE; Quilt Excel 2.2 SE; and Trivapro SE. Follow all label directions and be sure to choose the most effective rate for the most difficult to control disease. Do not reduce rates of fungicides.

C.O.R.N. Newsletter

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

Cold this week then warmer for later April

A switch to a colder pattern for at least a week before milder air returns later April into May. Widespread freeze conditions are expected this week. Rainfall will generally remain at or above above into May but there will be opportunities for plant this late April and May unlike last year.

Temperatures will average up to 10 degrees below normal for the week of April 13-20. Expect highs in the 40s and 50s and lows in the 20s and 30s this week which is well below the normals by about 10 degrees on average. Temperatures will return to near average the week of April 21-28 then above normal the the end of April and start of May.

Excessive rain is not expected the next 2+ weeks but frequent lighter rain is. Rainfall systems will continue in the light to sometimes moderate category for the rest of April. They will be frequent enough to amount to

1.5 to 3 inches for the rest of April. Normal is 1.75 to 2 inches in most areas. This means generally near normal to a little above normal rain is in tap. Some wet snow will likely get mixed in with the rain this week from time to time but amounts will be mostly light if any accumulation occurs and northern areas are favored. Please monitor later forecasts as the week progresses.

As discussed last week, we are expected widespread frost and freeze conditions this week over much of Ohio. A few mornings of hard freeze of 28 or less is expected this week. It appears conditions will relax after this week but some frosts are still likely but hard freeze probabilities will be dropping starting this weekend.

Soil temperatures have been mainly bouncing in the 40s north to 50s south the last week or so. Temperatures with the milder weekend rose but with the cold week ahead, soil temperatures will likely be below 50 across much of the state for parts of this week.

The latest NOAA climate information can be found at:

<https://www.cpc.ncep.noaa.gov>

The latest river and soil information can be found at:

<https://www.weather.gov/ohrfc/>

The latest Water Resources Outlooks can be found at:

<https://www.weather.gov/ohrfc/WRO>

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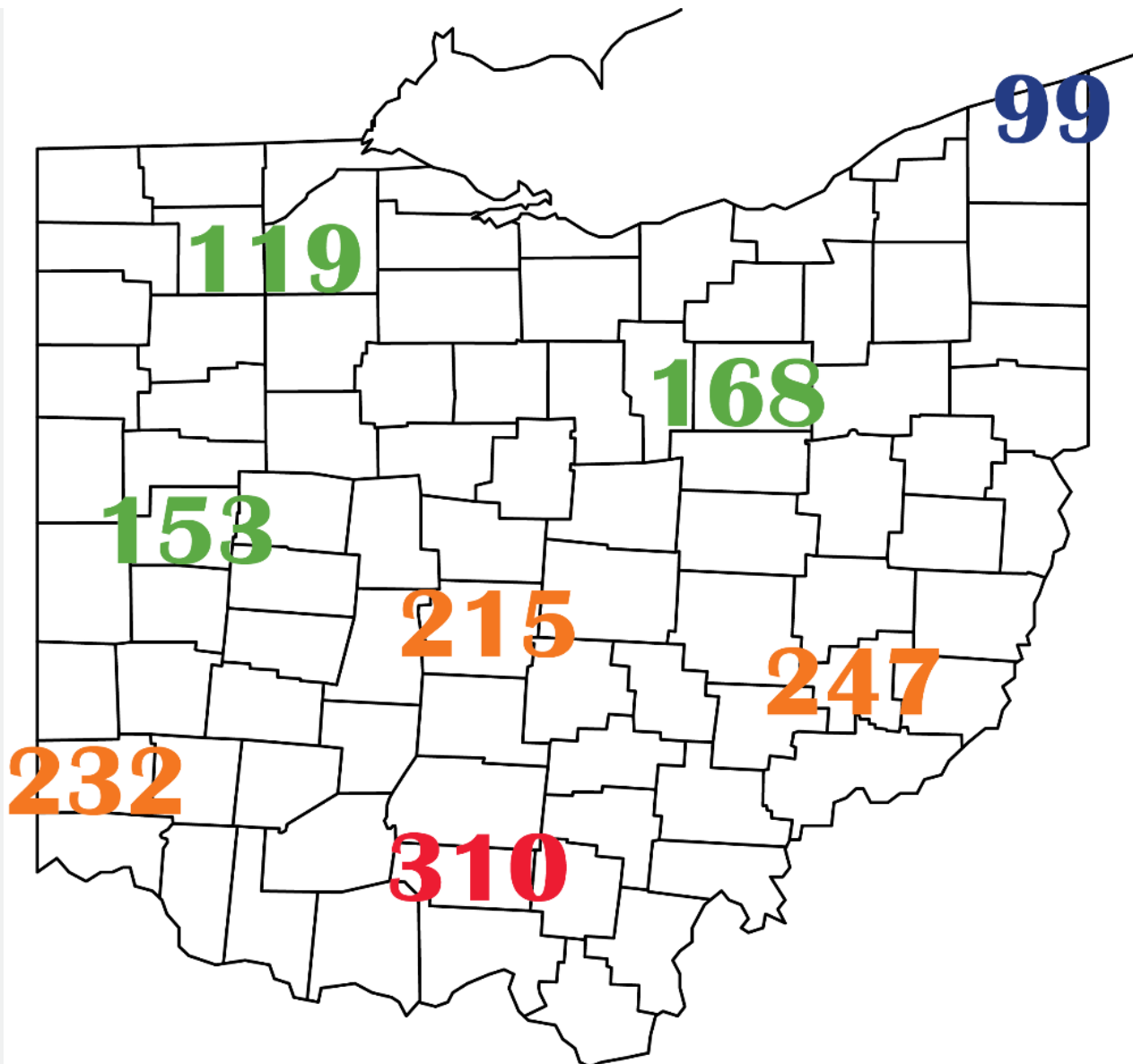
Alfalfa Weevil – It's Closer Than You Think



Green alfalfa weevil larvae (the main feeding stage) at various growth stages, and brown adults. Photo by Julie Peterson, University of Nebraska.

Though it seems like spring has been slow to come this year, we have actually accumulated enough degree days to see potential outbreaks of alfalfa weevil in some locations. Ohio experienced its 5th warmest winter on record (1895-2020) and March temperatures averaged 2-8°F above average. Overwintered adults begin laying eggs when temperatures exceed 48°F. Peak larval activity and feeding damage occurs between 325 and 575 heat units (based on accumulation of heat units from January 1 with a base of 48°F). Current (Jan. 1 – Apr. 11, 2020) heating units range from near 100 in far northeastern Ohio, 100-200 across much of northern Ohio, and 200-300 units across much of central, southwest, and southeast Ohio. South central Ohio has currently eclipsed 300 units as evident at OSU South Centers in Piketon.

In short, now is the time to start scouting. Alfalfa fields should be scouted weekly for weevils until at least the first harvest. Don't let your guard down with the recent turn to cooler weather! We've seen significant weevil infestations in past years when early warm weather pushed weevil development earlier than normal, followed by cooler weather later that slowed alfalfa growth. The result was weevil larvae reaching stages when a lot of feeding occurs and the slowed alfalfa growth not staying ahead of their feeding damage. Follow-up scouting may be needed after the first harvest in heavily infested fields.



Accumulated growing degree days (base 48°F sine calculation method) for January 1-April 11, 2020 at several CFAES Ag Weather System (<https://www.oardc.ohio-state.edu/weather1/>) locations and additional NOAA stations around Ohio.

Spot problem fields early by checking alfalfa tips for feeding damage – small holes and a tattered appearance. Fields that have a south facing slope tend to warm up sooner and need to be checked for weevil earlier.

Here is a video about scouting weevils in alfalfa: <https://forages.osu.edu/video>. Scout for alfalfa weevils by collecting a series of 10 stem samples from various locations. Place the stems tip down in a bucket. After you've collected 10 stems, shake the stems vigorously into the bucket and count the larvae. Divide this number by 10 to get the average number of larvae per stem. Do this procedure at least 3 times (for a grand total of 30 stems, in 10-stem units). Alfalfa weevil larvae go through four growth stages (called instars). The shaking will dislodge the late 3rd and 4th instar larvae which cause most of the foliar injury. Close inspection of the stem tips may be needed to detect the early 1st and 2nd instar larvae. Also record the overall height of the alfalfa. The treatment threshold is based on the number of larvae per stem, the size of the larvae and the height of the alfalfa according to the following table. When alfalfa is around 12-16 inches in height, growers can consider an early harvest rather than spraying, if they feel the current growth is sufficient to justify the cost of harvest or if spraying can't be done for some reason (e.g. organic production). When alfalfa stem height is over 16 inches, we would always recommend an early cutting. In those fields which are cut early for alfalfa weevil, the regrowth should be checked closely to make sure weevils that are still alive do not prevent good regrowth.

Table 1. Action thresholds relevant to stand height, tip feeding, and density of larvae per stem.

<i>Stand Height Inches</i>	<i>Indication of Problem % Tip Feeding</i>	<i>Problem Confirmation Larvae per Stem</i>	<i>Recommended Action</i>
6	25	1	Recheck in 7 days
9	50	> 1	Spray
12	75	> 2	Spray
16	100	> 4	Harvest early

When harvested early due to weevil, check within one week for regrowth.

Action thresholds relevant to stand height, tip feeding, and density of larvae per stem.

For more information about alfalfa weevil, visit our factsheet at <https://agcrops.osu.edu/newsletter/corn-newsletter/2019-13/alfalfa-weevil>

If you are interested in a more detailed treatment of how growing degree days can be used in management decisions for alfalfa weevil, visit this website from the University of

Kentucky <https://entomology.ca.uky.edu/ef127>

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Considerations for planting depth this year



Corn seed planted too shallow (left) and plant emerging normally (right). Photo credit: Alexander Lindsey
Timing corn emergence is key to minimize yield reductions, and can be more important for preserving yield than even seed spacing. When setting planting depth for corn this year, be sure to consider not just first emergence seen, but also how uniform the emergence is.

In work conducted from 2017-2019, we manipulated seeding depth to be approximately 1, 2, or 3" deep (current recommendations are for planting at 1.5-2 inches deep) in two conventionally tilled fields. One field had 2-3% organic matter, and the other had 4-5% organic matter. We tracked daily emergence in the plots, and measured stalk strength and yield at the end of the season. Across years and fields, shallow planting resulted in faster emergence of the first plants in each year. However, the seeds that didn't emerge were more subject to moisture fluctuation and took more time to go from 10% emerged to 90% emerged. In the high organic matter field, planting at 1" depth resulted in a 6-day period to go from 10% emerged to 90% emerged compared to the 2" and 3" depths which took 4 or 3 days, respectively. In the lower organic matter field, emergence was much more uniform (within 3 days for all treatments). Temperatures above 86 F can dramatically reduce root elongation and seedling growth, and may help explain the differences between fields. There were more than 3 days on average during emergence where daily maximum soil temperatures exceeded 86 F at the 1" depth in the high organic matter field. Conversely, fewer than 2 days on average during emergence had maximum soil temperatures that exceeded 86 F on average at the 1" depth in the low organic matter field.

According to some field agronomists, shallow plantings increase stress and result in less developed roots, smaller stalk diameters, smaller ears and reduced yields. We did observe reduced stalk strength and saw poorer pollination of the base of ears when planting depth was 1” compared to 2” or 3”. A 9-10% yield reduction in the high organic matter field was observed with 1” planting compared to the deeper planted treatments. In the lower organic matter field where emergence was more uniform, yields were similar regardless of depth.

In these trials, planting dates ranged from May 11 to June 4. Deeper planting may be recommended as the season progresses and soils become warmer and drier, however planting shallower than 1.5 inches is generally not recommended at any planting date or in any soil type. Some studies have documented faster emergence rates with shallower planting depths, but the comparisons have often included deeper planting depths than the recommended ranges and results are highly influenced by temperature and rainfall in the given season.

Improving our understanding of corn response to planting depth across different soil types and conditions may enable more effective use of planting technologies that allow variable planting depths during the planting operation.

References:

Blacklow, W. M. 1972. Influence of Temperature on Germination and Elongation of the Radicle and Shoot of Corn (*Zea mays* L.). *Crop Sci.* 12:647-650.

Liu, W., M. Tollenaar, G. Stewart, and W. Deen. 2004. Response of Corn Grain Yield to Spatial and Temporal Variability in Emergence. *Crop Sci.* 44:847-854.

Nemergut, K. 2020. Corn emergence uniformity as impacted by planting depth. Masters Thesis: The Ohio State University, Columbus, OH.

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CFAES Ag Weather System Near-Surface Air and Soil Temperatures/Moisture

We are once again providing a soil temperature overview in the C.O.R.N. Newsletter through April-May 2020. The College of Food, Agricultural, and Environmental Sciences (CFAES) Agricultural Research Stations located throughout the state have two- and four-inch soil temperatures monitored on an hourly basis. Our Western site in Clark County is not available this year. Therefore, we are supplementing data from western Ohio with data from Darke and Greene Counties. These sites (noted by an asterisk on Figure 1) report minimum (morning) soil temperatures. The other sites are reported on Figure 1 as a daily average.

CFAES Near-surface Air and Soil Temperatures

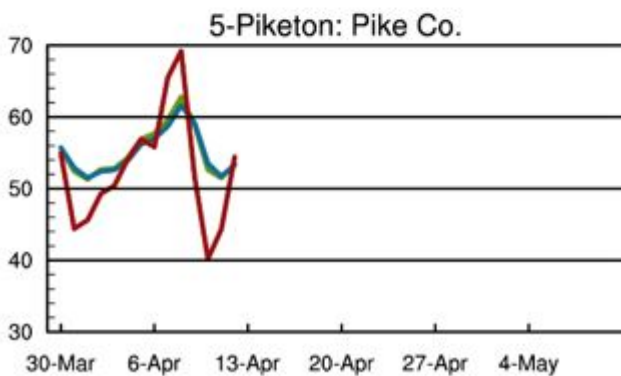
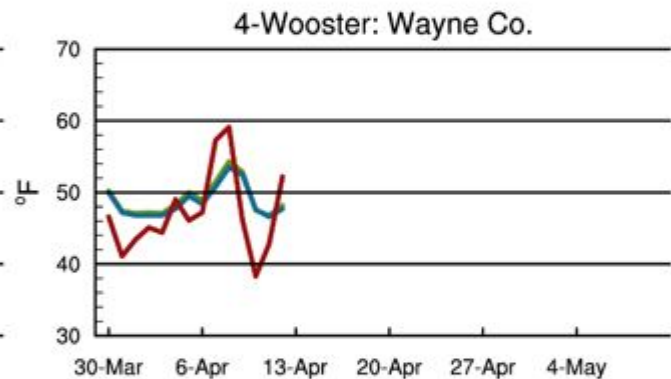
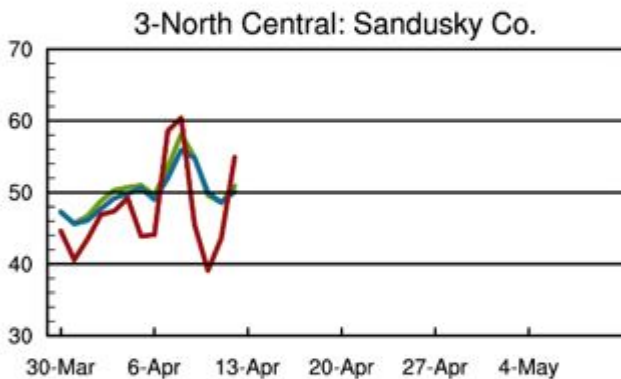
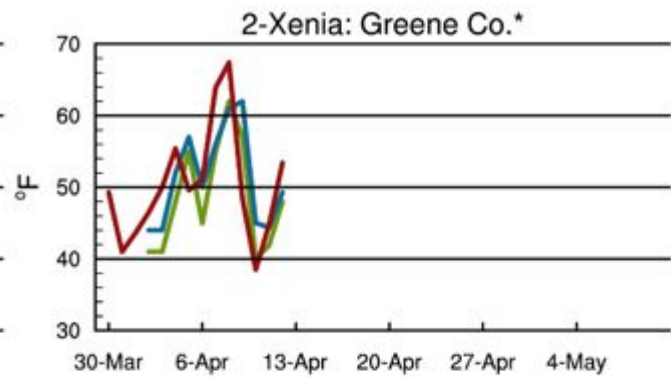
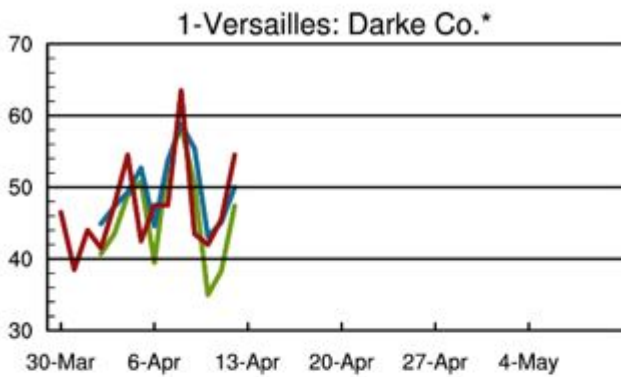


Figure 1.

Figure 1: Average daily air temperature (red), two-inch (green) and four-inch (blue) soil temperatures for spring 2020. Map of locations in bottom right. Soil temperatures are minimum temperatures for Versailles and Xenia and daily average for other sites.

Figure 1 shows that two- and four-inch soil temperatures have varied significantly in response to large swings in air temperature. Early in the week, daily average air temperatures warmed well into the 60s for southern sites (Versailles, Xenia, and Piketon) and to near 60 for northern sites (North Central and Wooster). In response, soil temperatures warmed into the mid-50s to low-60s across the state. Cooler weather later in the week caused soil temperatures to cool into the upper-40s to low-50s with a small rebound over the weekend. These soil temperatures are near their 5-year averages for North Central and Piketon but a bit cooler than the 5-year average at Wooster (by ~2°F). The current weather forecast calls for below to much-below average air temperatures over the next 5-7 days. Soil temperatures are likely to remain steady or cool slightly throughout the upcoming week.

Figure 2 (left) shows that plenty of rainfall fell across much of the state for the week ending April 12, 2020. Totals of 1.5-3 inches were verified from west central Ohio southeast through our far southeastern counties (dark green and yellow shadings). Much drier conditions were experienced in southwest Ohio. As a result, current calculated soil moisture ranking percentiles (right) dropped across this part of the state. However, soil moisture increased across Ohio's eastern counties. Much of the state remains above the 80th percentile with the greatest percentiles noted across northeast Ohio.

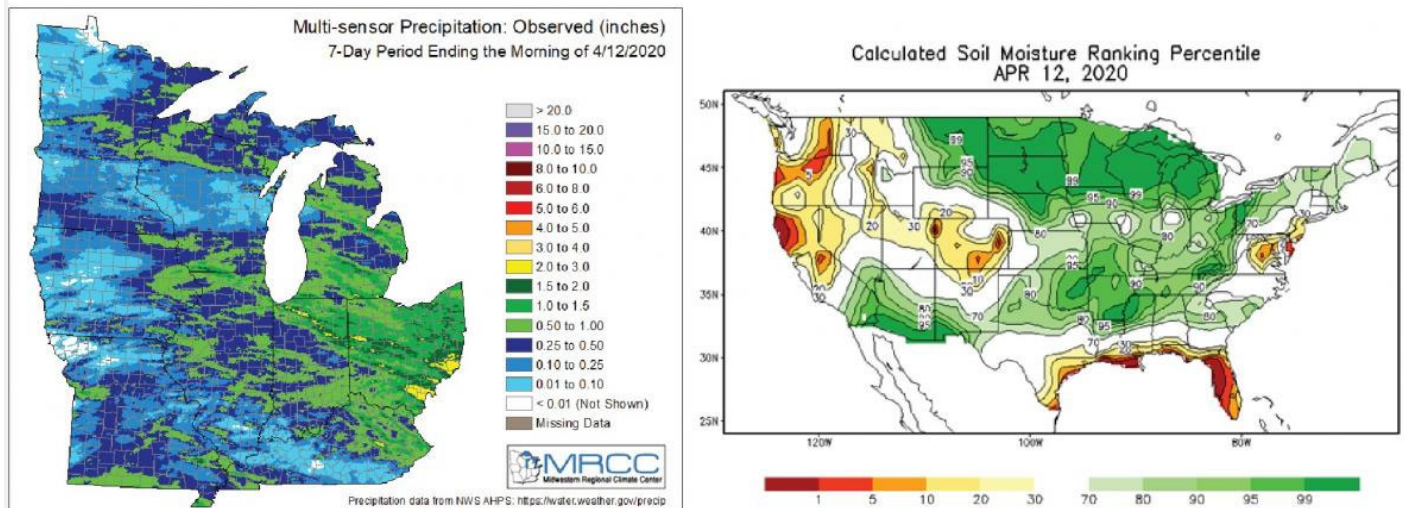


Figure 2.

Figure 2: (Left) Precipitation estimates for the last 7 days ending on 4/12/2020. Figure provided by the Midwest Regional Climate Center (<https://www.mrcc.illinois.edu>). (Right) Calculated soil moisture ranking percentile for April 12, 2020 provided by NOAA's Climate Prediction Center (<https://www.cpc.noaa.gov/>).

For more complete weather records for CFAES research stations, including temperature, precipitation, growing degree days, and other useful weather observations, please visit <https://www.oardc.ohio-state.edu/weather1/>.

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Harvest of Winter Annual Forages is Approaching



Rye swaths. Photo credit: Rory Lewandowski

Winter cereal forage crop development is advancing with the early warm weather this spring. These crops include winter rye, winter wheat, winter triticale, and barley. Italian ryegrass planted late last summer to early autumn is another forage crop that is developing early and will be ready for harvest by late April. The cool-down this week will likely slow development of these crops, but producers should be looking ahead to be ready when these crops reach optimal harvest stages.

Forage yield and nutritive value of these forages can change rapidly as the crop matures (see table below). The optimal stage of harvest will depend on the livestock to be fed. As with all forages, yield and quality are inversely related and the user will need to choose the appropriate compromise between yield and nutritional value.

Winter Annual Forage Characteristics

Forage crop	Dry matter yield (ton/acre)	CP (%)	NDF (%)	Nitrogen (lbs/acre)
Winter rye	2-4 in spring	10-18	51-65	50-70
Winter wheat	2-4 in spring	10-18	50-65	50-70
Winter triticale	2-4 in spring	10-18	50-65	50-70
Annual/Italian ryegrass	3-6 (Fall+spring)	11-19	50-65	40-50 each cut

Figure 1

For lactating dairy cows or beef stockers, grass forage crops like these should be harvested when neutral detergent fiber (NDF) is less than 55%. To achieve this, cereal rye should be harvested no later than the boot stage and preferably in the pre-boot stage. Rye that has headed out contains chemicals (not measured by routine forage analyses) that greatly reduce feed intake by dairy cows. Triticale should be harvested in the boot stage (less than 25% of the field has visible heads). Triticale seed heads are unpalatable and may reduce intake especially when fed as dry hay. Italian ryegrass should also be harvested in the late vegetative to early boot stage. Wheat and barley can be harvested in the boot to milk stages.

When forage will be fed exclusively to dry dairy cows and heifers, or beef cows, rye should be harvested in the boot stage, triticale in the milk stage, and wheat and barley in the dough stage, and Italian ryegrass can be in heading stages. Intake is not as critical for dry cows and heifers and delaying harvest increases yields.

Chopping and ensiling or wet wrapping bales are the best mechanical harvest alternatives for most of the winter cereals, as they contain high moisture content and are difficult to dry for hay, especially in the spring. Italian ryegrass can also be difficult to dry, but it depends on the stage of growth. Wilting these crops will be necessary before ensiling or wet wrapping bales. Ideally, silage/haylage should be left undisturbed for at least two weeks to allow the forage to reach stable fermentation. If forage is needed sooner, use silage bags or wet wrapping individual bales for feeding until the silage in bunkers is fully fermented.

Before feeding, test the forages and incorporate them into a balanced diet based on the test results. Studies with dairy cows have shown that cereal forages harvested in the boot or milk stages support more than 80 lbs of milk when fed in properly balanced diets containing less than 22% forage NDF concentrations in the diet. Diets based on cereal forage harvested in milk stage require more concentrate supplementation (energy) than corn silage-based diets. Alfalfa-based diets and diets based on cereal forages (milk stage) require about the same amount of supplemental energy. Protein supplementation should be based on the forage test. Some research suggests that cows fed diets based on cereal forage respond well to rumen undegradable protein (bypass protein). Mineral supplementation should be based on the forage test.

High levels of potassium in forage can be a problem, especially for dry cows. The high potassium inhibits absorption of magnesium, so the concentration of magnesium in diets based on grass needs to be increased to between 0.3% (lactating cow) to 0.4% (dry cows) of diet dry matter. High potassium diets fed to dry cows increase risk of milk fever which can only be mitigated by either feeding lower potassium forages or feeding supplemental dietary anions to reduce the cation anion difference. Consult a nutritionist to come up with appropriate supplementation. When grazing winter cereal forages or Italian ryegrass, supplement lush spring pastures with high-magnesium mineral blocks or mineral-salt mixes to reduce the risk of grass tetany.

Baled cereal forage often has a very large particle size, so consider how to reduce the particle size before feeding. Whenever possible, baleage from these forages should be made with a baler that has a cutter option. This improves bale density and fermentation along with feed out. When fed free choice using a hay ring, these long particles often result in increased waste. Processing these forages results in more complete digestion. If not cut at the baler, a tub grinder or vertical mixer can work well to decrease particle size. The ideal particle size for most beef diets is a maximum of 5 inches in length.

Additional Resources:

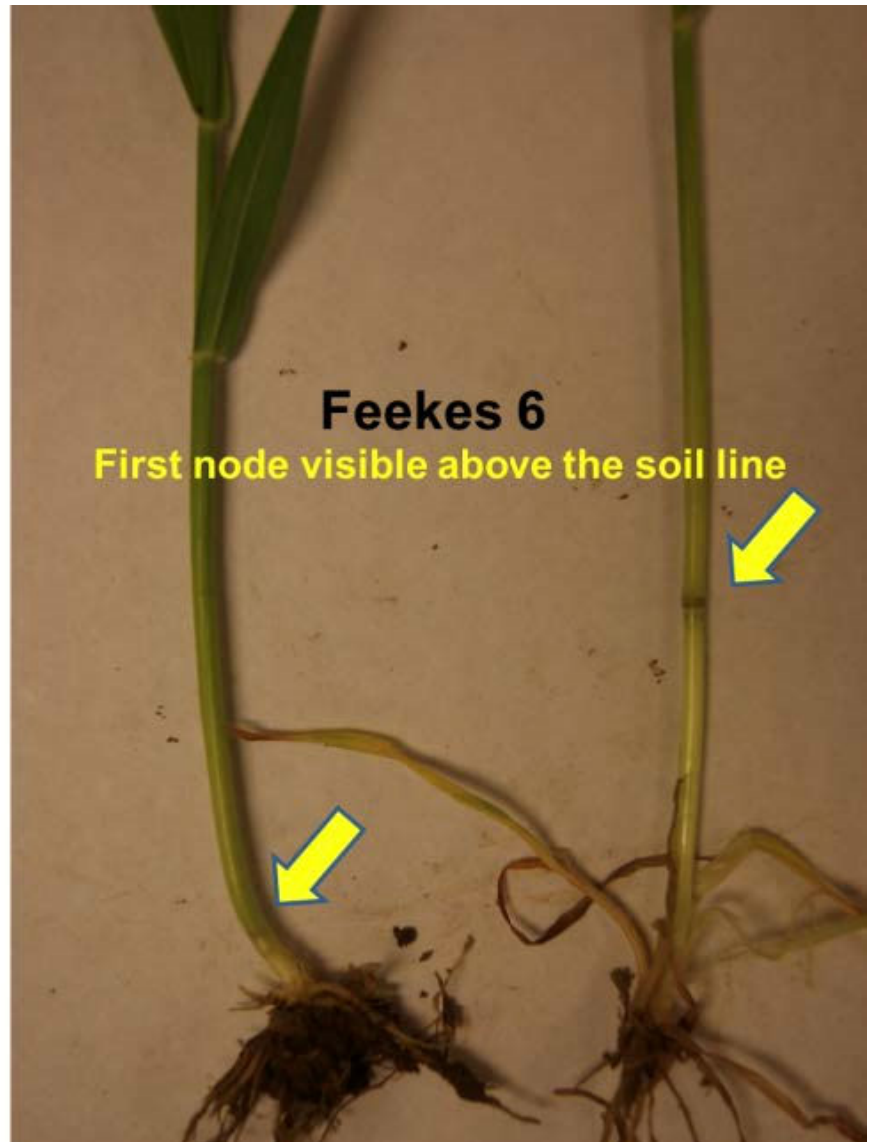
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2. Large round bale silage. Guidelines from Penn State Univ. <https://extension.psu.edu/large-round-bale-silage>
3. Making good round bale silage: what we have learned in Kentucky. Published in Progressive Forage, <https://www.progressiveforage.com/forage-types/silage/making-good-round-bale-silage-what-we-have-learned-in-kentucky>

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Wheat Growth Stages and Associated Management- Feekes 6.0 through 9.0

It's important to correctly identify winter wheat growth stages to enhance management decisions, avoiding damage to the crop and unwarranted or ineffective applications. Remember, exact growth stage cannot be determined by just looking at the height of the crop or based on calendar dates.



Feekes 6.0- Nodes are all formed but sandwiched together so that they are not readily distinguishable. At Feekes 6.0, the first node is swollen and appears above the soil surface. This stage is commonly referred to as “jointing.” Above this node is the head or spike, which is being pushed upwards eventually from the boot. The spike at this stage is fully differentiated, containing future spikelets and florets. Growers should remove and carefully examine plants for the first node. It can usually be seen and felt by removing the lower leaves and leaf sheaths from large wheat stems. A sharp knife or razor blade is useful to split stems to determine the location of the developing head. Feekes 6.0 growth stage video: <https://www.youtube.com/watch?v=iukwzxn4DPk>



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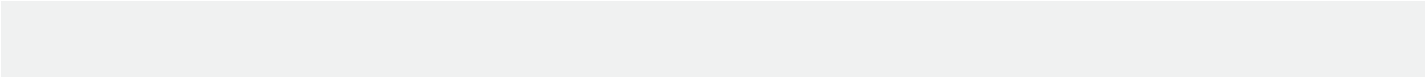
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Feekes 7.0- At Feekes 7.0 growth stage, the second node becomes visible. This stage is characterized by the rapid expansion of the head and a second detectable node. Look for the presence of two nodes- one should be between 1.5 and 3 inches from

the base of the stem and the other should be about 4 to 6 inches above the base of the stem. These nodes are usually seen as clearly swollen areas of a distinctively different (darker) shade of green than the rest of the stem. The upper node may be hidden by the leaf sheath; you may have to run your fingers up the stem to feel for it. If only one node is present, then wheat is still at Feekes 6.0 growth stage. Wheat will still respond to N applied at Feekes 7.0 if weather prevented an earlier application; however, mechanical damage may occur from applicator equipment. Feekes 7.0 growth stage video: <https://www.youtube.com/watch?v=PZ7Lvsux1y8>

Feekes 8.0- At Feekes 8.0 growth stage, the flag leaf is visible, but still rolled up. This growth stage begins when the last leaf (flag leaf) begins to emerge from the whorl. This stage is particularly significant because the flag leaf makes up approximately 75% of the effective leaf area that contributes to grain fill. It is therefore important to protect and maintain the health of this leaf (free of disease and insect damage) before and during grain development. When the flag leaf emerges, three nodes are visible above the soil surface. To confirm that the leaf emerging is the flag leaf, split the leaf sheath above the highest node. If the head and no additional leaves are found inside, Feekes 8.0 is confirmed and the grower should decide whether or not to use foliar fungicides to manage early-season and overwintering fungal diseases. Nitrogen fertilizer applications at or after Feekes 8.0 growth stage may enhance grain protein levels but are questionable with respect to added yield. Moreover, additional N may increase the severity of some foliar diseases, particularly the rusts.



Feekes 9.0- Feekes 9.0 growth stage begins when the flag leaf is fully emerged from the whorl with the ligule visible. From this point on, leaves are referred to in relation to the flag leaf (e.g., the first leaf below the flag leaf is the F-1, the second leaf below is F-2, and so forth).

For more information on Wheat Growth Stages and Associated

Management: <https://stepupsoy.osu.edu/wheat-production/wheat-growth-stages-and-associated-management>

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PPE Shortage for Pesticide Applicators

This spring pesticide applicators are likely to encounter a new challenge getting the personal protective equipment (PPE) required to make their pesticide applications. The emergency needs that our first responders and medical care providers have for PPE in the COVID-19 war have led to shortages of all types of PPE, even for types not typically worn by medical personnel. By the time that PPE become more readily available, it will likely be too late for many spring (or even summer) pesticide applications.

Every pesticide product label includes a list of the required personal protective equipment. So ... what should farmers and pesticide applicators do in this situation? **First, If you can't acquire and properly use the label required PPE, don't make the application of that pesticide.** Carefully review the labels of the pesticide products you plan to use for the coming growing season to learn what PPE are required to use those products. If there are any PPE items that you do not have (or cannot get), then choose another pesticide product that does not require the PPE. One possible solution that has been advanced is to purchase higher level protection types of PPE that are not used by health care providers. Disadvantages to this approach are that these are usually hotter and more uncomfortable, more expensive, and availability perhaps just as limited, especially of replaceable parts such as the cartridges used in respirators.

Alternative products or alternative control methods that don't require the PPE are probably your best bet. Many common pesticides require only: long sleeved shirt, long pants, shoes, and socks. Other products have more stringent PPE requirements. Online product label databases such as Agrian.com are very useful for searching out the PPE requirements for agricultural pesticides before purchase. Whatever the label says, you must be in compliance. Your health and safety is at stake and, - the label is the law! Used and modified from the original with permission of *Dean Slates, Ohio State University Extension Agriculture Educator, Emeritus.*

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Other Articles

The Ag Law Harvest

By: Peggy Kirk Hall, , Associate Professor, Agricultural & Resource Law , Associate Professor, Agricultural & Resource Law Friday, April 10th, 2020

Source: <https://farmoffice.osu.edu/blog/fri-04102020-532pm/ag-law-harvest>

Although many of us are quarantined at home these days, the gears of the legal world are still turning. Here's our gathering of recent notable news and legal developments:

Our Farm Office is open Monday night! Join us for the Farm Office's live online office hours this Monday night from 8—9:30 p.m. Our team of experts will provide updates on the Paycheck Protection Program and the dairy economy and discuss COVID-19 macro-economic and export impacts, BWC dividends, property tax concerns, potential legal issues arising from COVID-19, and other issues you want to discuss. Register at <https://go.osu.edu/farmofficelive>.

What's the deal with dicamba? Our partner, the National Agricultural Law Center, is hosting a free webinar on dicamba litigation on Wednesday, April 15 at noon EST. "The Deal with Dicamba: An Overview of Dicamba Related Litigation," will feature attorney Brigit Rollins, who will review each of the dicamba lawsuits, the claims made by the plaintiffs, and what the outcome of each suit could mean for dicamba use in the United States. Go [here](#) to learn more.

Walmart sued for employee's COVID-19 death. We've been wondering when we'd start seeing COVID-19 lawsuits, and the answer is now. On Monday, the estate of a Walmart employee in Illinois who died from COVID-19 sued the company for negligence and wrongful death. The complaint alleges that Walmart failed to properly clean the store or provide employees with masks, gloves, antibacterial wipes and other protective equipment, knew that employees were exhibiting COVID-19 signs and symptoms, and did not

screen new employees for COVID-19. A second employee at the same store has also died of the virus. Read the complaint [here](#).

Shell eggs go to market. The FDA issued guidance that eases up packaging and labeling requirements during the COVID-19 pandemic for shell eggs sold directly to consumers in retail food establishments. The agency explained that it made the change because plenty of shell eggs are available to meet increased consumer demands, but properly labeled retail packaging for the eggs is not. See the guidance [here](#).

EPA's glyphosate approval is challenged. Glyphosate, used in the weed killer Roundup, is in the news again. This time, the controversy surrounds the EPA's decision in January 2020 to allow glyphosate to continue being used in the interim while the agency conducts its mandatory 15-year re-approval review. Although EPA has yet to make its re-approval decision, two groups of plaintiffs have petitioned the Ninth Circuit Court of Appeals for an invalidation of the EPA's decision allowing continued use in the interim. Plaintiffs argue that the decision violates both the Federal Insecticide, Fungicide, and Rodenticide Act and the Endangered Species Act because the EPA has not gathered enough information to prove that glyphosate is safe for humans, the environment, and endangered species. You can read the petitions [here](#) and [here](#), and EPA's interim decision [here](#).

No rehearing for RFS litigation. We reported [previously](#) that the Tenth Circuit Court of Appeals held the EPA in violation of the Renewable Fuel Standard (RFS) when it granted RFS blending waivers to three small refineries. While the Trump administration did not appeal the court's decision, two of the oil refiners requested a rehearing before the full panel of Tenth Circuit judges. This week, those requests were rejected by the Tenth Circuit, starting a 90-day period during which the refiners may petition for a hearing before the U.S. Supreme Court.

ODNR suspends hunting and fishing license sales for non-residents. The Ohio Department of Natural Resources announced this week that it is "temporarily suspending the sale of non-resident hunting and fishing licenses until further notice" to further discourage travel into the state. ODNR has no set date to lift the suspension; it will be in place as long as state COVID-19 orders dictate. Read ODNR's press release [here](#).

BWC gives dividends and deferrals. The Ohio Bureau of Workers' Compensation board decided yesterday to pay dividends to employers for BWC premiums to the tune of up to \$1.6 billion. Checks will go out to employers later in April, and will equal approximately 100% of the BWC premiums paid in their 2018 policy years. The agency is also allowing employers to delay unpaid premium installments due for March through May until June 1, 2020 and will not lapse coverage or assess penalties for amounts not paid due to the COVID-19 pandemic. See [this FAQ](#) for details.

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