PURDUE UNIVERSITY | Extension - Entomology

Pest&Crop newsletter

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In This Issue

2021 Spring Burndown Considerations: Air Temps And Herbicide Efficacy

(Bill Johnson) & *(Marcelo Zimmer)*

Every year growers may experience challenges when controlling winter annuals weeds or terminating cover crops with glyphosate-based burndown herbicide programs, specifically when glyphosate is sprayed in cool, cloudy weather conditions or tank mixed with residual herbicides, ATS, or synthetic auxins (issue mostly for grasses). In 2018, we conducted cover crop trials at a couple locations and were able to capture some good images and weather information around those treatments. The purpose of this article is to provide some recommendations on how to achieve good herbicide efficacy during spring burndown and share our data and experiences with this situation in 2018.

We conducted cover crop experiments at three different Purdue Agricultural Centers over the last couple of years. One of the trial objectives was to look at the influence of termination timing on herbicide efficacy, weed suppression, and crop yields. Our cereal rye experiment provided a good data set to look at the influence of air temperatures on glyphosate and glyphosate plus atrazine activity. In table 1, we are showing the data for two of our sites, Throckmorton Purdue Agricultural Center (TPAC) near Lafayette Indiana and the Southeast Purdue Agricultural Center (SEPAC) near Butlerville, Indiana. In table 1 we can see the daytime high and low temperatures for the two days prior to spraying, spray day, and the next two days after that. At TPAC, you can see that the two days before spraying we had daytime air temps that got up in the 50s and 60s, But night time air temps that got as low as 29° on the day of spraying. The next two days after the spray treatment was made, our nighttime air temps got down as low as 29°. If we look at the SEPAC information, you can see that the two days before spraying, and the day of spraying nighttime air temps were down in the 30s and low 40s. The day after spraying, we had a nighttime low of 42.

In figure 1, you can see images from the two research sites. At both sites, you can see that Roundup (glyphosate) alone is providing more control then Roundup plus Acuron (atrazine + s-metolachlor + mesotrione + bicyclopyrone) at two weeks after treatment. The common thread with these results is the influence of cool nighttime temperatures on herbicide activity and the antagonistic effect of atrazine on grass control with glyphosate. For many years we focused our attention mostly on daytime air temperatures and its influence on herbicide activity. In our data set, daytime temps are mostly in the 50's and above. However, over the last 8 to 10 years we have become more educated on the influence of nighttime air temps on herbicide activity. The moral of the story is that daytime air temperatures may seem ideal for herbicide activity, but night time air temperatures can cause plants to slow their growth rates or shut down. We know that if plants aren't actively growing, herbicide efficacy is reduced for translocated (systemic) herbicides. Our general rule of thumb is that we want daytime air temperatures in the 50s and 60s and nighttime temperatures in the 40s or higher to assure plants are actively growing and maximize the effectiveness of postemergence herbicides.

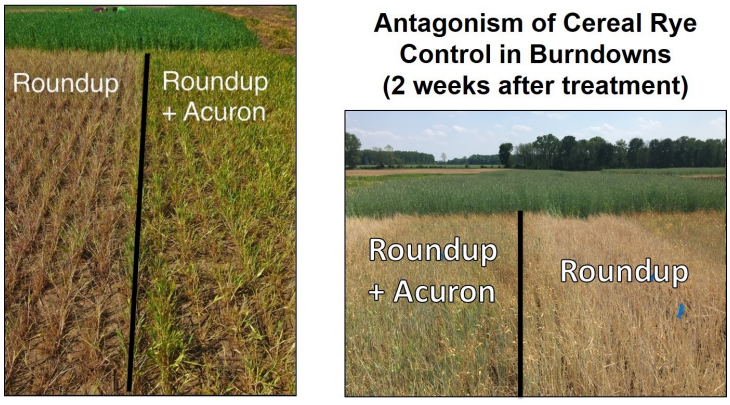

Figure 1. Picture of Roundup alone compared to Roundup + Acuron two weeks after herbicide application to terminate cereal rye.

Table 1. Low and high air temperatures (°F) for two days before termination application to two days after application.

	TPAC Low	TPAC High	SEPAC Low	SEPAC High

	TPAC Low	TPAC High	SEPAC Low	SEPAC High
2 days before application	50	60	41	55
1 day before application	39	50	30	59
Day of application	29	65	33	71
1 day after application	29	65	42	80
2 days after application	35	54	59	82

Depending on how the weather conditions develop this spring, we must also be careful about adding residual herbicides when terminating cover crops or controlling weedy grasses for a couple of reasons:

1. If the residual herbicide is sprayed onto large amounts of biomass, the residual may never hit the ground to do its job.
2. Residual herbicides sprayed under less than ideal weather conditions can antagonize glyphosate and reduce control of grasses (like wheat, cereal rye, annual ryegrass). This occasionally happens when herbicides such as flumioxazin, metribuzin, sulfentrazone, or atrazine are mixed with glyphosate. To avoid problems, increase the rate of glyphosate or spray the products separately.
3. Herbicides such as 2,4-D or dicamba can be added if there are broadleaf species in the mix or if glyphosate-resistant weeds such as marestail or giant ragweed are present at cover crop termination. Keep in mind that these herbicides have preplant restrictions for soybeans unless you are planting soybean genetics such as Xtend/XtendFlex (dicamba-tolerant) or Enlist (2,4-D tolerant) or planting corn. In addition, synthetic auxin herbicides such as 2,4-D and dicamba may also reduce grass control with glyphosate; therefore, increase the rate of glyphosate to avoid problems.

Weed Management Resources

(Bill Johnson) & (Marcelo Zimmer)

There are a number of weed management resources that have been developed by Extension Weed Scientists by a United SoybeanBoard (USB)-funded initiative called “Take Action”. The purpose of this article is to raise awareness of the most recent work done by this group to address the growing challenge of controlling herbicide-resistant weeds. If you are interested in bookmarking the website, which also contains information on fungicide and insecticide resistance, you can go to this site – https://iwilltakeaction.com/weeds

Below we have highlighted a few of the newer or update resources.

2021 Take Action Herbicide Classification Chart
The 2021 Herbicide Classification Chart is available online **here**. If you’d like printed copies to share with customers, you can order copies at our online store **here**. Stay tuned for more updates to other Take Action resources, including the Fungicide Classification Chart and Insecticide Classification Chart.

Video Series: ‘Inside Weed Management’
Take Action is collaborating with university weed scientists to develop seven videos covering herbicide-related issues. The video series, “Inside Weed Management,” is covering the following topics:

- Broadcast nozzle selections.
- Cover crops and weed suppression.
- Nonconventional weed management tools.
- Impacts of pre-emergent herbicides on soybean development.
- Research update on inversion with pre-emergent herbicides.
- Research update on cereal rye and marestail.
- Herbicide soil interactions and carryover.

It’s a series you won’t want to miss as we enter another growing season. You can find the video series **here**.

Weed Out Resistance Poster Is Available Now
As your customers approach another growing season, Take Action wants to make sure you both are covered on tackling herbicide resistance. Find our newest fact sheet, **Weed Out Resistance**, highlighting the 11 weeds that have developed resistance to the most herbicide sites of action. The poster indicates which herbicide groups the weeds have evolved resistance to as well as the most effective herbicide groups to control them.

Quick Links
As the spring season approaches, it’s crucial to remember that training is mandatory for any use of dicamba products. Links to the dicamba manufacturer applicator trainings are available below.

- **Bayer Applicator Training**
- **BASF Applicator Training**
- **Syngenta Applicator Training**

Training requirements vary by state. Please be sure to refer to your state and local requirements for the training process.

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Visit IWillTakeAction.com

Spring Herbicide Applications On Winter Wheat

(Bill Johnson) & (Marcelo Zimmer)

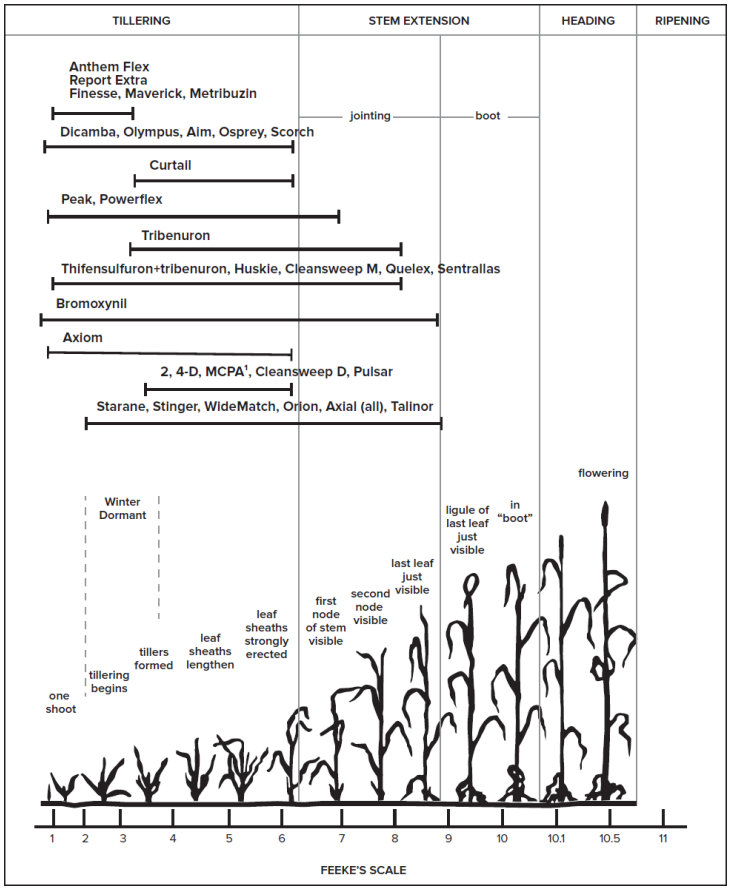
The warmer temperatures experienced in Indiana over the past week and the forecast for warmer temperatures moving forward will allow winter wheat fields in Indiana to green up and resume growth. During winter wheat green up, there are a few field activities that need to be considered, including winter wheat herbicide applications and winter annual weed burndown applications in no-till fields. The following information will outline winter annual weeds to look out for, weed scouting tips, crop stage restrictions, and herbicide recommendations.

Some common broadleaf weeds to scout for in your winter wheat are dandelion, purple deadnettle, henbit, chickweed, Canada thistle, wild garlic and annual ryegrass if you are in the far southwest part of the state. These winter annual species emerge in the fall and can remain relatively inconspicuous through the winter; however, they become competitive and troublesome during the spring if not controlled early. Summer annual weeds such as ragweed will be of less concern in the early spring and will be outcompeted by the wheat crop if managed properly. Grass weeds to be aware of and scouting for are: annual bluegrass, annual ryegrass, cheat, and downy brome.

Determining the severity of weed infestations in your wheat fields is key in determining the necessity of a herbicide application. As with all agronomic crops, you should scout your entire field to determine what weed management practices need to be implemented and determine any areas of severe weed infestations. Wheat fields that contain

uniform infestations of at least one broadleaf weed and/or three grass weeds per square foot should be taken into consideration for a herbicide application to avoid yield loss and harvest interference problems. Some fields that have less uniform infestations, but rather pockets of severe infestation should be managed to reduce weed seed production and future infestations.

When determining your herbicide program for spring applications, the stage of the wheat crop should be considered. The majority of wheat herbicides are labeled for application at certain wheat growth stages and some commonly used herbicides have very short windows in which they can be applied. The popular broadleaf weed herbicides 2,4-D and MCPA are efficient and economical, but can only be applied for a short period of time between tillering and prior to jointing in the early spring. Wheat growth stages and herbicide timing restriction are outlined in Figure 1.



If weed infestations are severe enough to require a herbicide application, the use of liquid nitrogen fertilizer solution as a carrier is a popular option for applying herbicides and topdressing the wheat crop in a single pass over the field. Caution should be taken when using a liquid fertilizer as a herbicide carrier as moderate to severe crop injury can result, especially in saturated soil conditions. Many post applied wheat herbicide labels allow for liquid nitrogen carriers, but require different rates and types of surfactants than if the herbicide was applied with water as the carrier. Table 1 includes precautions to be taken when applying wheat herbicides using liquid fertilizer as a carrier; further details and directions can be acquired from the herbicide label.

Another consideration growers should take into account when planning early spring herbicide applications is the plant back restrictions to double crop soybeans. A large percentage of the herbicides listed in Table 1, especially those with activity on annual ryegrass and downy brome, have soybean plant back restrictions greater than the typical three month time period between spring applications and double crop soybean planting. The soybean plant back restrictions greatly reduce the number of options available to wheat producers who double crop soybeans after wheat. Refer to Table 1 for more specific plant back timing restrictions.

Poison Hemlock

(Bill Johnson) & *(Marcelo Zimmer)*

Every spring we receive phone calls and emails with concerns of the presence of poison hemlock (*Conium maculatum* L.) in pastures, fencelines, and field edges (Figure 1). This plant can be noticed very early in the spring every year, as it is typically one of the first weeds to green up, usually in late February to early March if temperatures are favorable. The appearance of poison hemlock on roadsides and fencerows of Indiana is not new as we can find articles in the Purdue Weed Science database dating back to 2003. The largest threat of this weed is the toxicity of it's alkaloids if ingested by livestock or humans, but it can also reduce aesthetic value of landscapes and has been reported to creep into no-till corn and soybean fields as well.

Figure 1. Poison hemlock infestation on roadside (*Photo Credit: Travis Legleiter*)

Biology and Identification

Poison hemlock is a biennial weed that exists as a low growing herb in the first year of growth (Figure 2) and bolts to three to eight feet tall in the second year, when it produces flowers and seed (Figure 3). It is often not noticed or identified as a problem until the bolting and reproductive stages of the second year. The alternate compound leaves are pinnate (finely divided several times) and are usually triangular in outline. Flowers are white and occur in an umbel inflorescence. Poison hemlock is often confused with wild carrot but can be distinguished by its lack of hairs and the presence of purple blotches on the stems.

Figure 2. Poison hemlock rosette (*Photo Credit: Travis Legleiter*)

Figure 3. Flowering poison hemlock plant (*Photo Credit: Purdue Plant and Pest Diagnostic Lab*)

Toxic Properties

Poison hemlock contains five alkaloids that are toxic to humans and livestock and can be lethal if ingested. The plant's alkaloids may also be absorbed through the skin, so if you find yourself hand pulling poison hemlock, it would be a good idea to wear gloves. All parts of the plants contain the toxic alkaloids with levels being variable throughout the year. Symptoms of toxicity include nervousness, trembling, and loss of coordination followed by depression, coma, and/or death. Initial symptoms will occur within a few hours of ingestion.

Cases of poisoning due to poison hemlock ingestion are rare as the plants emit a mousy odor that makes it undesirable and unpalatable to livestock and humans. Consumption and toxicity in animals usually occurs in poorly managed or overgrazed pastures where animals are forced to graze poison hemlock because of lack of desirable forage.

Control

Control of poison hemlock with herbicides is most effective when applied to plants in the first year of growth or prior to bolting and flowering in the second year. The closer to reproductive stages, the less effective the herbicide. In roadside ditches, pastures, and waste areas, herbicides containing triclopyr (Remedy Ultra, Garlon, many others) or triclopyr plus 2,4-D (Crossbow, Crossroad) are most effective in controlling poison hemlock. Other herbicides that provide adequate control when applied at the proper timing are dicamba (Clarity, many others), metsulfuron-methyl (Escort XP), metsulfuron-methyl plus dicamba plus 2,4-D (Cimarron Max) and clopyralid plus 2,4-D (Curtail). For no-till fields, mixtures of 2,4-D plus dicamba will be most effective for fields going to soybean. Be sure to pay attention to preplant intervals when these herbicides are used in the spring. Preplant intervals will vary based on the soybean herbicide-resistance trait to be planted and whether or not 2,4-D and dicamba were used together to control the weed. For fields going to corn, mesotrione (Callisto™ and other names) and mesotrione premixes + 2,4-D or dicamba have been effective in reducing infestations along field edges.

For further information on toxic plants in Indiana refer to the Purdue University Weed Science Guide to Toxic Plants in Forages (https://www.extension.purdue.edu/extmedia/WS/WS_37_ToxicPlants08.pdf)

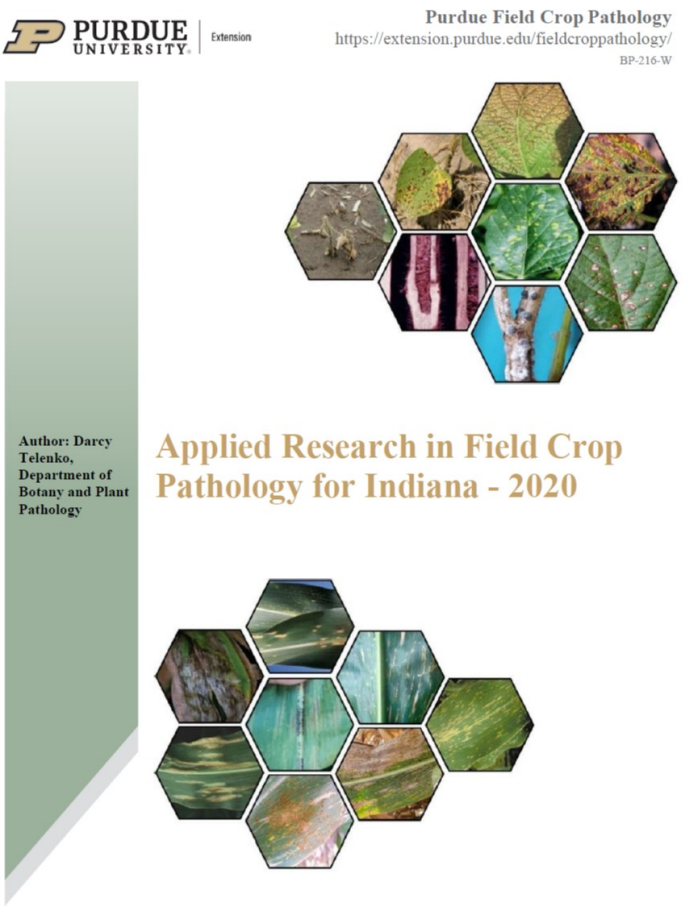
The 2020 Applied Research In Field Crop Pathology For Indiana Is Now Available

(Darcy Telenko)

A summary of the 2020 applied field crop pathology trials conducted by the Purdue Field Crop Pathology program in the Department of Botany and Plant Pathology is **now available**. It can found online on our Extension Field Crop Pathology website here. (https://extension.purdue.edu/fieldcroppathology/publications/)

This annual publication is designed as a guide to inform farmers, agricultural industry representatives, and researchers on the efficacy of products for field crops disease management in Indiana. Additional resources on fungicide efficacy for field crop (corn, soybean and wheat) diseases can be found on the Crop Protection Network website. These publications aggregate multiple-state and multiple-year data.

Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not constitute an endorsement, recommendation, or certification of any kind by Purdue Extension. Research included is by no means a complete test of all products available. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer.



Spring Soybean Cyst Nematode (SCN) Soil Testing For Indiana Growers

(Darcy Telenko)

Support from the SCN Coalition and National Soybean Board will continue to **provide FREE soybean cyst nematode (SCN) soil testing this spring to Indiana growers**. If you have trouble fields that you have not had a recent SCN test please consider sending in a soil sample to test for SCN.

This program will **support one sample per farm** to be submitted to the SCN Diagnostics at the University of Missouri. Please print off a form here https://ag.purdue.edu/btny/ppdl/Documents/PPDL-3-W%20SCN%20Survey-MO.pdf to include with your soil sample. Additional samples will cost $25/each.

Pack the samples in a box and cushion the samples with packing material so the bags don't break open during shipping.

Ship to:

SCN Diagnostics
1054 East Campus Loop
University of Missouri
Columbia, MO 65211-5315

To soil sampling for SCN

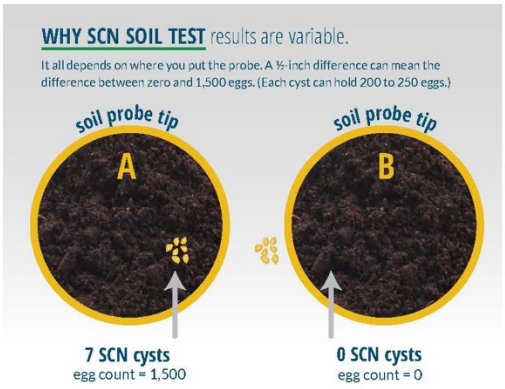
The equipment you need for sampling soil for soybean cyst nematode (SCN) is the same equipment you use for taking a soil sample for soil nutrient analysis: a soil probe, a bucket, and a plastic soil bag.

To collect soil samples for SCN diagnosis, we recommend you collect 10 to 20 of cores of soil, each with 1 inch-diameter and 6 to 8 inches-depth in a 20-acre area. If the field is larger, break the field into 20-acre units and take 10 to 20 cores per unit.

Take cores from within root zones and use a zig-zag or M-pattern to collect soil cores. In addition, you may also want to include samples from a high-risk area, such as near a field entrance, areas where the yield seems to be a little lower than the last time soybeans were grown, or along fence lines where wind-blown soil accumulates.

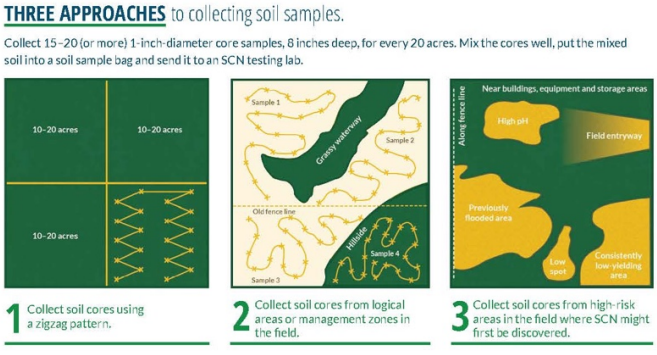
Bulk the cores in a container and mix thoroughly. Take the time to mix the sample. The better the sample is mixed the better it represents the whole field. Put ~ 500 cm^3 or 1 pint of the thoroughly-mixed soil in a plastic bag and label it with an permanent marker. Don't put a paper label inside the bag. The moist soil will make it unreadable by the time the sample reaches us.

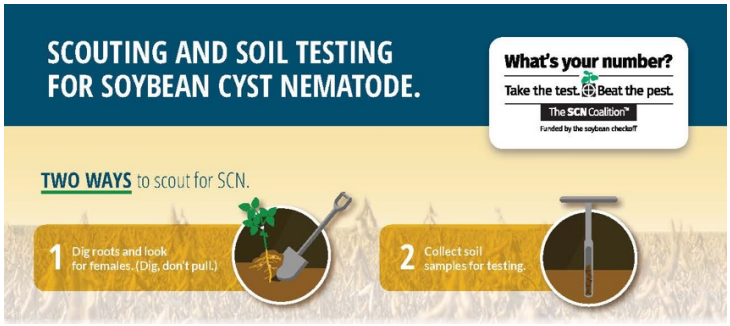
Please keep the sample at room temperature or cooler and keep out of the sun or hot truck cab until you are ready to pack and ship it.



WHEN to sample.

- Fall in a non-host crop.
- Fall in soybean stubble.
- Spring before a soybean crop.
- During the season in the soybean crop root zone.





Quick Survey On Soybean Management Effects On Yield And Quality

(Shaun Casteel)

Please take this Quick Survey on Soybean Management Effects on Yield and Quality:

http://bit.ly/SoybeanQualitySurvey

We are part of a seven university project supported by the United Soybean Board to assess soybean management effects on yield and quality. The overall objective of this project is to identify factors affecting soybean seed protein and its composition and to identify the best management practices for increasing soybean seed quality. Greater nitrogen capture is required to increase yield and protein concentration concurrently. We have documented interactions of nitrogen and sulfur with a number of management practices such as planting date and in-season foliar protection. Now, we are looking to identify the understanding and the knowledge of soybean management and its influence on yield AND quality. We appreciate your time to fill out the survey that should take 5-10 minutes.

The Soybean Research & Information Network that has more information on the project and some of the findings to date.

https://soybeanresearchinfo.com/research-highlight/achieving-soybean-seed-quality-is-a-combination-of-nature-and-nurture/

Thanks so much!

Everything In Moderation When Applying Potash

(Jim Camberato) & *(Shaun Casteel)*

A recent article[1] in Progressive Farmer over viewed research showing yield reductions attributed to potash (0-0-60, KCl or MOP) applications in corn (North Dakota) and soybean (Minnesota and Indiana). Although the mechanism(s) of "toxicity" were not known the yield reductions were large enough and frequent enough to be considered real. In the corn studies conducted by Dave Franzen at North Dakota State University the potash was applied in spring and detrimental rates were greater than 200 pounds per acre (120 lb K_2O/acre). My (Casteel) soybean research in Indiana examined potash applied at or shortly after planting as a means of intensifying management. Rather, I observed 3 to 5 bu/ac yield reductions at this timing. Detrimental potash rates were 200 pounds per acre in some trials on prairie soils near West Lafayette and loam to coarse-textured soils near Wanatah in 2016 and 2017. I still observed yield reduction at a lower rate of 100 pounds per acre (60 lb K2O/acre) in 2019, but not in 2020 near LaCrosse. Dan Kaiser at the University of Minnesota also saw yield reductions from potash applications ahead of soybean (spring and even some fall timings), and suggested chloride might be the culprit. Even though these observations of yield reductions cannot be fully explained at this time, these reports have caused some farmers to evaluate their timing and rate of potash application.

We do not fully understand the mechanisms causing these yield reductions at this time, but we would like to provide guidance (our best educated guess) to avoid the potential negative effects of potash applications.

Do not apply potash to soils that do not need it, soils that have K levels above the maintenance range (see table below).

Cation Exchange Capacity	Low Soil Test Build-up Range	Maintenance Range Crop Removal Recommended	High Soil Test No K Fertilizer Recommended
meq/100g	Soil test K level in parts per million or (pounds per acre)		
≤5	<100 (<200)	100-130 (200-260)	>130 (>260)
>5	<120 (<240)	120-170 (240-340)	>170 (>340)

On soils in the maintenance range (see table above) apply potash to replace crop removal plus 20 pounds K_2O per acre. Crop removal is 0.2 pounds of K_2O per bushel of corn and 1.15 pounds of K_2O per bushel of soybean. Do not apply the potash within 2 weeks ahead of planting soybeans and avoid applying to corn during this time frame as well,if possible. Rainfall between application and planting will likely lessen the potential for detrimental effects, but at least an inch or two of percolating rainfall will be needed to move the chloride out of the seed zone in silt loam and heavier-textured soils.

Only apply build-up rates of potash at low soil test levels (see table on previous page) that warrant a high application rate and only fertilize for two crops on soils that can hold the potassium -those having a cation exchange capacity of at least 5 meq/100 g and preferably closer to 10 meq/100g. Build-up application rates can be found on p. 38 of the Tri-State Fertilizer Recommendations[2]. High rates of potash with the purpose to build-up the soil or to support two crops' worth should be applied in the fall of the year. Most of the time in Indiana, winter and spring rainfall will move chloride downward in the soil profile and it is not likely to be an issue come planting time. Potassium will still remain in the soil because it is attracted to the cation exchange capacity and substantial amounts will not be lost over the winter.

The approach is a little different for sandier (low cation exchange capacity) soils. For soils with cation exchange capacities less than 5 meq/100 g make annual applications of potash and do not try and build soil test levels to the maintenance range. Potassium will leach through the soil more easily the lower the cation exchange. If soil test levels are just below the maintenance range, crop removal rates should be adequate to provide for the crop. At soil test levels far less than the critical level higher rates may be needed, but they should be applied well before planting if applied in the spring. If field conditions do not allow this early spring potash application, then wait and apply the potash after the corn or soybeans have emerged through early vegetative stages (e.g., V2 or V3) and consider reducing the potash application rate. Currently we are conducting research to try and determine what rates are needed to maximize profit on soils low in K, if one doesn't intend to add extra K to build up soil test levels.

[1]Watch Your Crop K Applications, Too Much Potassium Can Sometimes

Ding Corn, Soybean Yields. Emily Unglesbee. https://www.dtnpf.com/agriculture/web/ag/crops/article/2020/12/02/much-potassium-can-sometimes-ding

[2]Tri-State Fertilizer Recommendations for Corn, Soybean, Wheat, and Alfalfa. Bulletin 974. 2020. Culman, Fulford, Camberato, Steinke. College of Food, Agricultural, and Environmental Sciences. Columbus, OH: The Ohio State University. https://www.canr.msu.edu/soilfertility/Files/Main-page/FINAL%20PRINT.pdf

Changes to FAA Drone Rules Worthy of Your Attention

(Bob Nielsen)

The Federal Aviation Administration (FAA) announced final rules in December 2020 for Unmanned Aircraft Systems (UAS), aka drones, that will potentially impact many Part 107 certificate holders in the coming years. This article summarizes a few of those rule changes and provides links to sites with more information.

One rule change will be the requirement for most drones to have the capability to broadcast their **remote identification** to authorized public safety organizations. This rule change, which was hotly debated in the drone community, is a response to numerous reports of incidents involving drones and public safety. Drone manufacturers will make this a default feature on new drones in the future. Remote ID modules will be available to retrofit existing drones. For more information on Remote ID, see https://www.faa.gov/uas/getting_started/remote_id. Another information source that's a bit easier to read is https://pilotinstitute.com/remote-id-guide.

Other FAA rule changes involve **drone flights 1) over people and 2) at night**. Previously, such flights required FAA authorizations or waivers. The new rule changes will simplify those flight operations. For more information on both of these rule changes, see https://www.faa.gov/uas/commercial_operators/operations_over_people.

One of the requirements for night flight operations will be to equip your drone with **anti-collision lighting** capable of being seen from at least 3 statute miles. Note this requirement is NOT intended for you as the drone pilot to keep track of your own aircraft. The ANTI-COLLISION lighting is intended for other aircraft in the vicinity so that they can see your aircraft at night and avoid a mid-air collision. I do not pretend to have experience with many of these anti-collision lights for drones, but I came across a good article recently from Pilot Institute (https://pilotinstitute.com/drone-strobe-lights/) that describes the results of simple comparisons among seven different drone strobe light options. The authors were especially keen on one particular strobe light, the Firehouse Technology Arc V.

Finally, the FAA is changing **how Part 107 certified pilots maintain their currency**, aka staying up to date on drone flight knowledge. Prior to this rule change, Part 107 pilots had to pass a recurrent knowledge test every two years to maintain their currency. Beginning this month (March 2021), there will no longer be a requirement to take / pass a recurrent knowledge test. Rather, from this point forward, Part 107 certificate holders will simply complete an on-line safety training course every two years. No exam. No fees. The recurrent safety training course will also include information required to be certified for legally operating drones at night. For more information, see https://pilotinstitute.com/part-107-currency.

The online recurrent training course is accessed at https://www.faasafety.gov/gslac/ALC/CourseLanding.aspx?cID=515. Theoretically, the site is available now for recurrent safety training, but I have not yet tried it because my Part 107 certificate currency does not expire until July.

MAY THE FORCE BE WITH YOU!

Forage Events To Put On The Calendar

(Keith Johnson)

Purdue Extension and the Indiana Forage Council are planning two forage education events that will be a great opportunity to expand your knowledge about managing forages.

The first education event is a 6-week series called the "Friday Forage Forum". Planned by Purdue Extension, the program begins on March 5 and meets weekly noon Eastern time for an hour through April 16. The sessions will be recorded so they can be viewed when time permits in your schedule. It is important to register for the series. Register at https://bit.ly/2LlPnZK

The next education event, "Making a Difference with Improved Grazing Systems", focuses on implementing an improved grazing system. The Indiana Forage Council is taking leadership in developing this program. The program is receiving support from the Indiana State Department of Agriculture's Livestock Promotion Grant. The day and a half session will be held at two locations. The first offering will be at the Southern Indiana Purdue Agriculture Center on June 4 and 5. On June 11 and 12 the meeting will be in the Rossville, IN area. Details about the program will be found at the Indiana Forage Council's website indianaforage.org by early April.

As an aside, scout your forages as they come out of winter dormancy to make sure there was no damage caused by the ever changing temperatures experienced this winter. It was a blessing that Mother Nature provided a blanket of insulating snow when the extreme cold temperature visited Indiana.

Purdue Extension Field Crop Specialists

(Tammy Luck, luck@purdue.edu)

Entomology **Dept. Ext. Web Site: extension.entm.purdue.edu**			
Cameron, Stephen	(765) 494-4554	cameros@purdue.edu	Head, Dept. of Entomology
Bledsoe, Larry	(765) 494-8324	lbledsoe@purdue.edu	Field Research, CAPS
Harpur, Brock	(765) 496-6769	bharpur@purdue.edu	Beekeeping
Humberg, Lee	(765) 494-8721	lhumgerg@purdue.edu	USDA, APHIS, Animal Damage
Krupke, Christian	(765) 494-4912	ckrupke@purdue.edu	Field Crop Insects
Obermeyer, John	(765) 494-4563	obe@purdue.edu	Field Crop Insects & IPM Specialist
Luck, Tammy	(765) 494-8761	luck@purdue.edu	Administrative Assistant
Agronomy **Dept. Ext. Web Site: ag.purdue.edu/agry/extension**			
Turco, Ron	(765) 494-4774	rturco@purdue.edu	Head, Dept. of Agronomy
Ackerson, Jason	(765)494-5314	jacker@purdue.edu	Soil Management
Bolt, Marguerite	(765) 496-1567	mbolt@purdue.edu	Hemp Extension Specialist
Brouder, Sylvie	(765) 496-1489	sbrouder@purdue.edu	Plant Nutrition, Soil Fertility, Water Quality
Camberato, Jim	(765) 496-9338	jcambera@purdue.edu	Soil Fertility
Casteel, Shaun	(765) 494-0895	scasteel@purdue.edu	Soybean and Small Grains Specialist
Gerber, Corey	(765) 496-3755	gerberc@purdue.edu	Director, Diagnostic Training Center
Hall, Beth	(765) 494-8060	bethhall@purdue.edu	Director, Indiana State Climate Office
Johnson, Keith D.	(765) 494-4800	johnsonk@purdue.edu	Forages
Kladivko, Eileen	(765) 494-6372	kladivko@purdue.edu	Soil Physics, Cover Crops
Nielsen, Robert L. **Nielsen on partial retirement*	(765) 494-4802	rnielsen@purdue.edu	Corn, On-farm Research, Precision Agriculture (on partial retirement)
Steinhardt, Gary	(765) 494-8063	gsteinha@purdue.edu	Soil Management, Tillage, Land Use
Volenec, Jeffrey	(765) 496-2926	jvolenc@purdue.edu	Crop Ecophysiology
Vyn, Tony	(765) 496-3757	tvyn@purdue.edu	Cropping Systems & Tillage
Wilson, Lexie	(765) 494-4783	lhayenga@purdue.edu	Extension Program Coordinator
Botany and Plant Pathology **Dept. Ext. Web Site: www.ag.purdue.edu/btny/Extension**			
Staiger, Chris	(765) 494-4615	staiger@purdue.edu	Head, Dept. of Botany & Plant Pathology
Bonkowski, John	(765) 494-4641	jonkows@purdue.edu	Plant Disease Diagnostician, P&PDL
Creswell, Tom	(765) 494-8081	creswell@purdue.edu	Director Plant & Pest Diagnostic Laboratory
Johnson, Bill	(765) 494-4656	wgj@purdue.edu	Weed Science
Ruhl, Gail	(765) 494-4641	ruhlg@purdue.edu	Plant & Pest Diagnostic Laboratory
Telenko, Darcy	(765) 496-5168	dtelenko@purdue.edu	Field Crop Diseases
Whitford, Fred	(765) 494-4566	fwhitford@purdue.edu	Purdue Pesticide Programs
Woloshuk, Charles	(765) 494-3450	woloshuk@purdue.edu	Mycotoxins in Corn
Zimmer, Marcelo	(765) 496-2121	zimmer6@purdue.edu	Weed Science
Gross, Lisa	(765) 494-9871	gross25@purdue.edu	Extension Assist./P&PDL Lab Coordinator
Agricultural & Biological Engineering **Dept. Ext. Web Site: engineering.purdue.edu/ABE**			
Mosier, Nathan	(765) 494-7022	mosiern@purdue.edu	Acting Head, Dept. of Ag. & Bio. Engineering
Field, Bill	(765) 494-1191	field@purdue.edu	Extension Safety Specialist
Frankenberger, Jane	(765) 494-1194	frankenb@purdue.edu	GIS and Water Quality
Kelley, Lyndon	(269) 467-5511	kelleyl@msu.edu	Irrigation Educator
Ileleji, Klein	(765) 494-1198	ileleji@purdue.edu	Post Harvest Grain Quality
Ni, Jiqin	(875) 496-1733	jiqin@purdue.edu	Manure Management
Weaver, Carol	(765) 494-1174	sikler@purdue.edu	Extension Assistant

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Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907