Hello, Northeast Ohio Counties!

Happy Halloween! It has been a little chilly this week—which is not to be expected based on October coming to a close.

Congratulations to Mandy (Farm Bureau Organizational Director) & Lee Orahood for the birth of their daughter Kenzlee Sue Orahood yesterday! Congratulations Mandy & Lee!

A reminder to beef farmers to purchase your beef banquet tickets by this Friday! Don’t miss this Prime Rib meal! Have a safe week!
Karen Cooley Receives Honorary American FFA Degree

Congratulations to Karen Cooley from Williamsfield, Ohio for receiving the Honorary American FFA Degree on Friday, October 27, 2017 at the National FFA Convention in Indianapolis, Indiana. Mrs. Cooley retired two years ago after serving as the Agriculture Instructor & FFA Advisor for Pymatuning Valley High School in Andover, Ohio for 32 years.

The Honorary FFA Degrees is given to those who advance agricultural education and FFA through personal commitment. The National FFA Organization works to enhance the lives of youth through agricultural education. Without the efforts of highly dedicated individuals, thousands of young people would not be able to achieve success that, in turn, contributes directly to the overall well-being of our nation. Congratulations to Mrs. Cooley for this incredible honor!

28th Annual Ashtabula County Beef Banquet to be held on November 11, 2017 in Lenox, Ohio

THIS FRIDAY, NOVEMBER 3 IS THE LAST DAY TO PURCHASE TICKETS!

OSU Extension and the Ashtabula County Cattlemen’s Association will be holding their 28th annual banquet on Saturday, November 11 at the Lenox Community Center beginning at 7:00 p.m. Banquet activities will include a prime rib dinner; business meeting; election of two members to the Ashtabula County Cattlemen’s board of directors; entertainment; door prizes; and fine fellowship.

Tickets for the banquet can be purchased from the Directors of the Cattlemen’s Association. Directors are: Bart Kanicki, Pierpont Township; David Nye, Hartsgrove Township; Zach Ward, Austinburg Township; Tyler Brown, Dorset Township; and Dr. Bryan Elliott, Cherry Valley Township. Tickets are $25 per person. Call the Ashtabula County Extension office at 440-576-9008 for more information. Pre-reservations should be made by November 3, 2017. A program flyer can be found at: http://go.osu.edu/ne-events

What Will Dicamba Changes Mean for Farmers?

By: Peggy Kirk Hall, Asst. Professor, Agricultural & Resource Law
Source: https://farmoffice.osu.edu/blog/tue-10242017-917pm/what-will-dicamba-changes-mean-for-farmers

Last week, the Environmental Protection Agency (EPA) announced an agreement with Monsanto, BASF and DuPont to change dicamba registration and labeling beginning with the 2018 growing season. EPA reports that the agreement was a voluntary measure taken by the manufacturers to minimize the potential of dicamba drift from “over the top” applications on genetically engineered soybeans and cotton, a recurring problem that has led to a host of regulatory and litigation issues across the Midwest and South. The upcoming changes might alleviate dicamba drift issues, but they also raise new concerns for farmers who will have more
responsibility for dicamba applications. The following registration and labeling changes for dicamba use on GE soybeans and cotton will occur in 2018 as a result of the agreement:

- Dicamba products will be classified as “restricted use” products for over the top applications. Only those who are certified through the state pesticide certification program or operating under the supervision of a certified applicator may apply the product. Training for pesticide certification will now include information specific to dicamba use and application, and applicators will be required to maintain records on the use of dicamba products.
- The maximum wind speed for applications will reduce from 15 mph to 10 mph.
- There will also be greater restrictions on the times during the day when applications can occur, but details are not yet available on those restrictions.
- Tank clean-out instructions for the prevention of cross contamination will be on the label.
- The label will also include language that will heighten the awareness of application risk to sensitive crops.

Farmers should note that the additional restrictions and information on dicamba labels shifts more responsibility for the product onto the applicator. An applicator must take special care to follow the additional label instructions, as going “off label” subjects an applicator to higher risk. If drift occurs because of the failure to follow the label, the applicator is likely to be liable to the injured party for resulting harm and may also face civil penalties. Producers should take care to assess the new dicamba labels closely when the manufacturers issue the revised labels for 2018.

To learn more about legal issues with pesticide use, be sure to sit in on the Agricultural & Food Law Consortium’s upcoming webinar, “From Farm Fields to the Courthouse: Legal Issues Surrounding Pesticide Use.” The webinar will take place on Wednesday, November 1 at Noon EST and will feature an examination of regulatory issues and litigation surrounding pesticide use around the country by attorneys Rusty Rumley and Tiffany Dowell Lashmet. To view the free webinar, visit http://nationalaglawcenter.org/consortium/webinars/pesticide/

**Case Studies Show Big Economic Benefits of Soil Health Practices**


Soil health practices such as cover crops and no-till can result in an economic return of over $100 per acre, according to a set of case studies jointly released by the National Association of Conservation Districts and Datu Research, LLC.

Cover crops and no-till can limit soil loss, reduce run-off, enhance biodiversity, and more. Naturally, farmers who are considering adopting these practices are keen to know how they will affect their farm’s bottom line.
“These case studies quantify for producers, policy-makers, and researchers alike what the economic advantages of using no-till and cover crops are, and why it makes good sense for farmers to try them and for organizations like NACD to support and even incentivize their use,” said Jeremy Peters, NACD CEO. “We have loads of anecdotal data that says conservation practices benefit the land and producers’ pocketbooks, but now we have run the numbers and know how much."

During the three-year study period, corn-soybean farmers experimented with cover crops and/or no-till, and quantified the year-by-year changes in income they attributed to these practices compared to a pre-adoption baseline. They found that while planting costs increased by up to $38 per acre:

- Fertilizer costs decreased by up to $50 per acre
- Erosion repair costs decreased by up to $16 per acre
- Yields increased by up to $76 per acre

The studies also found that with adoption of these conservation practices, net farm income increased by up to $110 per acre. Included in the farmers’ calculations was the considerable time they spent attending workshops or searching the internet to learn about no-till or cover crop practices. “That time turns out to be an excellent investment, when bottom lines start improving,” said Marcy Lowe, CEO of Datu Research, which conducted the case studies in partnership with NACD. “Farmers who switch to these practices can see losses at first. But thanks to these case study farmers who are generously sharing what they’ve learned, that learning curve will speed up for other farmers.”

One of the case study subjects, Michael Willis, farms 1,000 acres in northwestern Missouri with his family. His advice for future cover crop adopters is this: “Start small enough so it doesn’t freak you out, but large enough to matter.” Datu Research and NACD intend to continue contributing to the scientific literature on the economic advantages of implementing conservation practices and systems on working lands. The case studies released today can be viewed and downloaded here and the parent report is available on request.

**Avoid Costly Problems in the Spring by Proper Winterizing of Your Sprayer Now**

By: Erdal Ozkan  
Source: [https://agcrops.osu.edu/newsletter/corn-newsletter/2017-37/avoid-costly-problems-spring-proper-winterizing-your-sprayer-now](https://agcrops.osu.edu/newsletter/corn-newsletter/2017-37/avoid-costly-problems-spring-proper-winterizing-your-sprayer-now)

It is very likely that you will not be using your sprayer again until next spring. If you want to avoid potential problems and save yourself from frustration and major headaches, you will be wise to give your sprayer a little bit of TLC (Tender Loving Care) these days. Yes this is still a busy time of the year for some of you, but don’t delay winterizing your sprayer too long if you already have not done so. You don’t want a pump that is cracked and/or not working at its full capacity because you did not properly winterize it before the temperature falls below freezing. Here are some important things you need to do with your sprayer this time of the year.
Rinsing

It is very likely that you did the right thing when you used the sprayer the last time: you rinsed the whole system (tank, hoses, filters, nozzles) thoroughly. If you did not, make sure this is done before storing the sprayer. A sprayer that is not rinsed thoroughly after each use, and especially after the spraying season is over, may lead to cross-contamination of products applied for different crops, and clogging of nozzles. Pay even more attention to avoid cross-contamination problems that may result in serious crop injury if you are using some of the new 2,4-D andDicamba herbicides. Another problem that may result from lack of, or insufficient rinsing of the complete sprayer parts is clogged nozzles. Once the nozzles are clogged, it is extremely difficult to bring them back to their operating conditions when they were clean. Leaving chemical residues in nozzles will usually lead to changes in their flow rates, as well as in their spray patterns resulting in uneven distribution of chemicals on the target.

Depending on the tank, proper rinsing of the interior of the tank could be easy or challenging. It will be very easy if the tank is relatively new and is equipped with special rinsing nozzles and mechanism inside the tank. If this is not the case, manual rinsing of the tank interior is more difficult, and poses some safety problems such as inhaling fumes of leftover chemicals during the rinsing process. To avoid these problems, either replace the tank with one that has the interior rinse nozzles, or install an interior tank rinse system in your existing tank.

For effective rinsing of all the sprayer components, circulate clean water through the whole sprayer parts several minutes first with the nozzles off, then flush out the rinsate through the nozzles. Rinsing should be done preferably in the field, or on a concrete chemical mixing/loading pad with a sump to recover rinse water. Regardless, dispose of the rinsate according to what is recommended on the labels of the pesticides you have used. Always check the label for specific instructions. However, most labels recommend following procedure: If rinsing is done on a concrete rinse pad with a sump, put the rinsate collected in the sump back in the tank, dilute it with water and spray it in the field where there is no potential for the rinsate to reach ditches and other water bodies nearby. If the rinsing is done in the field, make sure you are not flushing out the rinsate in the system in one area. It is best to further dilute the rinse water in the tank and, spray it on the field on areas where there is no potential for the rinsate to reach ditches and other water bodies nearby.

Cleaning

Rinsing the system with water as explained above may not be sufficient to get rid of chemicals from the sprayer. This may lead to cross-contamination problems. Residues of some pesticides left in the sprayer may cause serious problems when a spray mixture containing these residual materials is applied on a crop that is highly sensitive to that pesticide. To avoid such problems, it is best to clean and rinse the entire spraying system with some sort of a cleaning solution. Usually a mixture of 1 to 100 of household ammonia to water should be adequate for cleaning the tank, but you may first need to clean the tank with a mixture containing detergent if tank was not cleaned weeks ago, right after the last spraying job was done. Some chemicals require specific rinsing solution. There is an excellent Extension Publication from University of Missouri which lists many commonly used pesticides and the specific rinsing solutions required for them. It is available online. Check it out (http://extension.missouri.edu/p/G4852). However, you should
always check the product label to find out the most recent recommendations on cleaning agents.

Cleaning the outside of the sprayer components deserves equal attention. Remove compacted deposits with a bristle brush. Then flush the exterior parts of the equipment with water. A high pressure washer can be used, if available. Wash the exterior of the equipment either in the field away from ditches and water sources nearby, or a specially constructed concrete rinse pad with a sump. Again, the rinsate should be disposed of according to the label recommendations. As I mentioned earlier, most labels recommends the same practice: put the rinsate collected in the sump back in the tank, dilute it with water and spray it in the field where there is no potential for the rinsate to reach ditches and other water bodies nearby.

**Winterizing**

Check one more time to make sure there is no liquid left inside any of the sprayer parts to prevent freezing. Especially the pump, the heart of a sprayer, requires special care. You don’t want a pump that is cracked and/or not working at its full capacity because you did not properly winterize it before the temperature falls below freezing. After draining the water, add a small amount of oil, and rotate the pump four or five revolutions by hand to completely coat interior surfaces. Make sure that this oil is not going to damage rubber rollers in a roller pump or rubber parts in a diaphragm pump. Check the operator's manual. If oil is not recommended, pouring one tablespoon of radiator rust inhibitor in the inlet and outlet part of the pump also keeps the pump from corroding. Another alternative is to put automotive antifreeze with rust inhibitor in the pump and other sprayer parts. This also protects against corrosion and prevents freezing in case all the water is not drained. To prevent corrosion, remove nozzle tips and strainers, dry them, and store them in a dry place. Putting them in a can of light oil such as diesel fuel or kerosene is another option.

**Storage**

Find ways to protect your sprayer against the harmful effects of snow, rain, sun, and strong winds. Moisture in the air, whether from snow, rain, or soil, rusts metal parts of unprotected equipment of any kind. This is especially true for a sprayer, because there are all kinds of hoses, rubber gaskets and plastic pieces all around a sprayer. Yes, the sun usually helps reduce moisture in the air, but it also causes damage. Ultraviolet light softens and weakens rubber materials such as hoses and tires and degrades some tank materials. The best protection from the environment is to store sprayers in a dry building. Storing sprayers in a building also gives you a chance to work on them any time during the off-season regardless of weather. If storing in a building is not possible, provide some sort of cover. When storing trailer-type sprayers, put blocks under the frame or axle and reduce tire pressure during storage.

Finally, check the condition of all sprayer parts one more time before leaving the sprayer behind. Identify the parts that may need to be worked on, or replaced. Check the tank, and hoses to make sure there are no signs of cracks starting to take place. Check the painted parts of the sprayer for scratched spots. Touch up these areas with paint to eliminate corrosion. By the way, don’t forget to cover openings so that birds don’t make a nest somewhere in your sprayer, and insects, dirt, and other foreign material cannot get into the system.

Northeast Ohio Agriculture  
OHIO STATE UNIVERSITY EXTENSION  
Ashtabula and Trumbull Counties
**Snowbird Pesticide & Fertilizer Re-certification Session to be held on November 16**

For the farmers who head south for the winter, it always conflicts with getting their private pesticide applicator license renewed. To help our snowbird farmers with this predicament, the OSU Extension offices in Northeast Ohio have planned a special private pesticide applicator and fertilizer re-certification session. This year’s session will be hosted by the Lake County Extension office on Thursday, November 16, 2017 from 1:00 to 5:00 p.m. at the Perry Community Center at 2800 Perry Park Road in Perry, Ohio.

The pesticide re-certification session will be held from 1:00 to 4:00 p.m. and it will offer 3 credits for pesticide re-certification for CORE and All Categories (1-7). The cost of this session is $35 per registrant. Then immediately following, producers can stay to renew their fertilizer certification from 4:00 to 5:00 p.m. The cost of this session is $10 per person. The registration deadline for this program is November 8, 2017. Registration is requested to be made on-line at: http://www.cvent.com/d/5tqjgb. If a producer is unable to register on-line, they are asked to contact the Lake County Extension at 440-350-2582 for assistance.

For the producers who will be here all winter, we have four additional sessions planned. The 2018 private pesticide re-certification and commercial fertilizer certification sessions will be held on January 12 in Williamsfield, February 2 in Burton, February 9 in Ravenna and March 9 in Cortland. Registration links and flyers for these events can be obtained at: http://go.osu.edu/neohio-pat

**The 4 R’s of Feeding the Cow Herd**

By: Al Gahler, OSU Extension Educator, Sandusky County (originally published in the Ohio Farmer on-line)

Source: http://u.osu.edu/beef/2017/10/25/the-4-rs-of-feeding-the-cow-herd/#more-3891

The end of the growing season is near, and for cattle producers in Ohio, that means the beginning of the season that challenges the profitability of a cow/calf operation more than any other aspect. That’s right, feeding a cow through the winter is the number one cost of production, and the days of $2.50 and higher feeder calves that made it pretty easy to pay the winter feed bill are a fond but distant memory. The difference between the producer that has had and will have continued success in a slightly different economic climate and the ones who have and will struggle, will come down to management. Not just marketing management, but input management, or in other words, feed and nutrition.

There are lots of different methods of storing hay between the time it’s harvested, and fed.
Most anyone involved in agriculture in Ohio has very likely heard about the concept of 4R management in agronomic crop production in order to preserve the soil and ensure water quality – using the ‘right’ fertilizer or pesticide product, putting it in the ‘right’ place, at the ‘right’ rate, at the ‘right’ time. The cattle producer who will be the most cost effective at getting his/her cows through the winter while maintaining proper body condition and herd health will likely be the one making the most money come weaning time on the next calf crop. That producer will be feeding the ‘right’ amount of the ‘right’ feedstuff to the ‘right’ contemporary group of cattle at the ‘right’ time of the year.

How does one know what those 4 “R’s” are for feeding the cowherd? Well, there are 4 main factors a producer needs to consider – the nutrient value of available feedstuffs, the cost of production or purchase price of those feedstuffs, the storage of those feedstuffs, and the nutrient needs of each age group of cattle. To simplify the rest of this discussion, we will focus on the one main feedstuff utilized to winter most beef cows in Ohio – hay.

Nutrient content of feed – 2017 was a challenging year to make quality hay in Ohio. Yield was significant on most farms, and most producers consider a big crop to be a good crop. But is it? How do you know what the nutrient content of that hay is without a forage test? Was the hay made dry with no rain after being cut? Is any bale of hay you can purchase for a reasonable price that looks or smells good going to have enough protein and energy to maintain your cows? A nutrient test on hay will cost anywhere from $20-50. So if you have 3 cuttings from the same field, $150 will tell you what is inside the bale. Compare that to the cost of one lost pregnancy, or one 2 year old that does not breed back.

Cost of production – Many producers raise their own hay and therefore, have no real cost in it other than the fuel in the tractor and a little bit of fertilizer, right? What about opportunity cost of making that hay and using the ground for extended grazing or crops, then purchasing your hay? There is realistic market value for that hay which must be applied in order to accurately make best management decisions.

Storage – Where is that hay stored? In a barn, on a field edge under a tree line, in a stack of round bales alongside the barn? Was that hay brought in from the field right after baling, or did it sit for 2 weeks and collect rain or flood water first? When you take that forage sample, do you sample it at the time of baling, or at the beginning of the feeding period so you can account for storage loss?
Age groups – Do weaned heifer calves, bred heifers, coming 2 year olds, and mature cows all have the same nutrient requirements? What about fall calving – does that cow hitting peak lactation on November 1 have any different nutrient needs than a mid-gestation spring calver?

Most producers know the answers to these questions on each of the 4 factors presented or know how to get the answers, and for those that do, their key to success is choosing to utilize that information. For those that do not know the answers, or how to find them, seek out advice from your County Extension Educator, nutritionist, feed salesman, veterinarian, or all of the above, and learn how to become a “4R” cow/calf producer. Your cows and your pocketbook will thank you.

For more information on forage testing, interpreting results, storage loss in hay, and formulating your feeding strategies, visit the Ohio State University Extension Beef Team’s Web site at: http://u.osu.edu/beefteam/

Pest Resistance to Biotech Crops Surging
Source: http://www.kearneyhub.com/townnews/agriculture/pest-resistance-to-biotech-crops-surging/article_0cc77e94-ae8b-11e7-97b6-57cb0812de32.html?org=1364&lvl=100&ite=413&lea=140666&ctr=0&par=1&trk=

In 2016, farmers worldwide planted more than 240 million acres (98 million hectares) of genetically modified corn, cotton and soybeans that produce insect-killing proteins from the bacterium Bacillus thuringiensis, or Bt. These Bt proteins kill some voracious caterpillar and beetle pests, but are harmless to people and considered environmentally friendly. While organic farmers have used Bt proteins in sprays successfully for more than half a century, some scientists feared that widespread use of Bt proteins in genetically engineered crops would spur rapid evolution of resistance in pests.

Researchers at the University of Arizona in Tucson, Arizona have taken stock to address this concern and to discover why pests adapted quickly in some cases but not others. To test predictions about resistance, Bruce Tabashnik and Yves Carriere in the College of Agriculture and Life Sciences analyzed the global data on Bt crop use and pest responses. Their results are published in the current issue of the journal Nature Biotechnology.

“When Bt crops were first introduced in 1996, no one knew how quickly the pests would adapt,” said Tabashnik, a Regents’ Professor and head of the UA Department of Entomology. “Now we
have a cumulative total of over 2 billion acres of these crops planted during the past two decades and extensive monitoring data, so we can build a scientific understanding of how fast the pests evolve resistance and why."

The researchers analyzed published data for 36 cases representing responses of 15 pest species in 10 countries on every continent except Antarctica. They discovered resistance that substantially reduced the efficacy of the Bt crops in the field in 16 cases as of 2016, compared with only three such cases by 2005. In these 16 cases, pests evolved resistance in an average time of just over five years.

“A silver lining is that in 17 other cases, pests have not evolved resistance to Bt crops,” Tabashnik said, adding that some crops continue to remain effective after 20 years. The remaining three cases are classified as “early warning of resistance,” where the resistance is statistically significant, but not severe enough to have practical consequences.

Fred Gould, Distinguished Professor of Entomology at North Carolina State University and leader of the 2016 National Academy of Sciences study on genetically engineered crops, commented, “This paper provides us with strong evidence that the high-dose/refuge strategy for delaying resistance to Bt crops is really working. This will be critically important information as more crops are engineered to produce Bt toxins.”

According to the paper, both the best and worst outcomes support predictions from evolutionary principles. “As expected from evolutionary theory, factors favoring sustained efficacy of Bt crops were recessive inheritance of resistance in pests and abundant refuges,” Carriere said. Refuges consist of standard, non-Bt plants that pests can eat without exposure to Bt toxins. Planting refuges near Bt crops reduces the chances that two resistant insects will mate with each other, making it more likely they will breed with a susceptible mate. With recessive inheritance, matings between a resistant parent and a susceptible parent yield offspring that are killed by the Bt crop.

“Computer models showed that refuges should be especially good for delaying resistance when inheritance of resistance in the pest is recessive,” Carriere explained. The value of refuges has been controversial, and the Environmental Protection Agency has relaxed its requirements for planting refuges in the U.S.

“Perhaps the most compelling evidence that refuges work comes from the pink bollworm, which evolved resistance rapidly to Bt cotton in India, but not in the U.S.,” Tabashnik said. In the southwestern U.S., farmers collaborated with academia, industry, EPA scientists, and the U.S. Department of Agriculture to implement an effective refuge strategy. Although India similarly required a refuge strategy, farmer compliance was low.

“Same pest, same crop, same Bt proteins, but very different outcomes,” said Tabashnik. The new study revealed that pest resistance to Bt crops is evolving faster now than before, primarily because resistance to some Bt proteins causes cross-resistance to related Bt proteins produced by subsequently introduced crops.
An encouraging development is the recent commercialization of biotech crops producing a novel type of Bt protein called a vegetative insecticidal protein, or Vip. All other Bt proteins in genetically engineered crops are in another group, called crystalline, or Cry, proteins. Because these two groups of Bt proteins are so different, cross-resistance between them is low or nil, according to the authors of the study.

Yidong Wu, Distinguished Professor in the College of Plant Protection at Nanjing Agricultural University in China, said, “This review provides a timely update on the global status of resistance to Bt crops and unique insights that will help to improve resistance management strategies for more sustainable use of Bt crops.”

Although the new report is the most comprehensive evaluation of pest resistance to Bt crops so far, Tabashnik indicated it represents only the beginning of using systematic data analyses to enhance understanding and management of resistance. “These plants have been remarkably useful, and resistance has generally evolved slower than most people expected,” he said. “I see these crops as an increasingly important part of the future of agriculture. The progress made provides motivation to collect more data and to incorporate it in planning future crop deployments.”

“We’ve also started exchanging ideas and information with scientists facing related challenges, such as resistance to herbicides in weeds and resistance to drugs in cancer cells,” Tabashnik said. But will farmers ever be able to prevent resistance altogether? Tabashnik doesn’t think so. “We always expect the pests to adapt. However, if we can delay resistance from a few years to a few decades, that’s a big win.”

**Annie’s Project Retreat for Women in Agriculture**

OSU Extension will offer an Annie’s Project Retreat December 1-3 at Salt Fork State Park Lodge and Conference Center, 14755 Cadiz Road, Lore City, OH 43755. Annie’s Project provides education and a support network to enhance business skills of women involved in all aspects of agriculture.

Annie spent her lifetime learning to be an involved farm business partner with her husband. Annie’s life experiences inspired her daughter, a university Extension agent, to create a program for women living and working in the complex, dynamic agriculture business environment. Annie’s Project fosters problem solving, record keeping, and decision-making skills in farm women. Women will receive training in five areas of agricultural risk management: financial, marketing, production, legal, and human resources.

The participant fee is $105 per person, which includes all materials and meals. Lodging is $99 per room per night with up to four people per room. Details can be found on the [Annie’s Project Registration Flyer](#). Sponsors of the program include Farm Credit and Nationwide. Registration deadline is November 17. For more information please contact Emily Adams at the Coshocton County Extension Office at 740-622-2265 or [adams.661@osu.edu](mailto:adams.661@osu.edu).
David’s Weekly News Column
Hello, Ashtabula County! I cannot believe that it is November already! The trees really popped in color this past week. A lot of brilliant oranges and reds are now showing up in our trees. What a great benefit to living in Northeast, Ohio. Today, I would like to encourage farmers and landowners to consider applying for EQIP funding and invite women involved in agriculture to participate in the Eastern Ohio Annie’s Project Retreat. I hope each of you have a great November!

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Over the past decade, the federal government has developed programs which have helped farmers and landowners become better stewards of our land. One such program which has had a nice impact is the Environmental Quality Incentives Program (EQIP). This program, administered by the Natural Resources Conservation Service (NRCS), helps agricultural producers protect the environment while promoting agricultural production. Through this voluntary program, NRCS conservation experts help producers to implement environmentally beneficial conservation practices on working agricultural land.

Today, I am pleased to remind agricultural producers and landowners that the application deadline for this funding cycle of EQIP is Friday, November 17, 2017. Financial assistance is available for the adoption of practices in a variety of agricultural categories. These projects could include cropland, forestry, pasture operations, high tunnels, wildlife habitat, organic and on-farm energy. Money is also available for honey bee and monarch butterfly habitat development. In addition, special funding areas have been established for beginning, limited resource and socially disadvantaged farmers & landowners.

To participate in USDA conservation programs, applicants should be farmers or farm or forest landowners and must meet eligibility criteria. Applications signed and submitted to NRCS by the November 17 deadline will be evaluated for fiscal year 2018 funding.

More information about the EQIP program can be obtained at: https://www.nrcs.usda.gov/wps/portal/nrcs/main/oh/programs/financial/eqip/. Interested folks can also contact our local NRCS office in Orwell, Ohio at 1-888-217-3947 and 440-437-6330.

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During the past two years, we have offered some educational programs targeted for women involved in agriculture. In fact, a great core group of women have participated in three different programs thus far in 2017. We are also developing a monthly meeting schedule for our fall and winter programs for this group. If you are interested in having your name added to our women in agriculture mailing list, please call our office at 440-576-9008 or email Abbey Averill at averill.10@osu.edu

In addition to our local Women in Agriculture programs, ladies are also invited to participate in a variety of regional workshops. One such program that I would highly recommend is the Annie’s Project Retreat which will be held on December 1-3 at Salt Fork State Park Lodge and Conference Center located at 14755 Cadiz Road in Lore City, Ohio.
So what is this retreat all about? This weekend will allow women to participate in the national Annie’s Project which fosters problem solving, record keeping, and decision-making skills in farm women. Attendees will receive training in five areas of agricultural risk management: financial, marketing, production, legal, and human resources. The participant fee is $105 per person, which includes all materials and meals. Lodging is $99 per room per night with up to four people per room.

Details can be found at: https://u.osu.edu/ohwomeninag/ or https://u.osu.edu/ohwomeninag/files/2017/10/2017-Annies-Retreat-Eastern-23pq9y0.pdf. Sponsors of the program include Farm Credit and Nationwide. Registration deadline is November 17. For more information please contact Emily Adams at the Coshocton County Extension Office at 740-622-2265 or adams.661@osu.edu.

To close, I would like share a quote from Hal Borland who stated, "Two sounds of autumn are unmistakable, the hurrying rustle of crisp leaves blown along the street or road by a gusty wind, and the gabble of a flock of migrating geese. Both are warnings of chill days ahead, fireside and topcoat weather." Have a good and safe day!

**Upcoming Extension Program Dates**

The following programs have been scheduled for Northeast Ohio farmers. Complete registration flyers can be found at: http://ashtabula.osu.edu/program-areas/agriculture-and-natural-resources/upcoming-educational-programs-deadlines

2017 Ashtabula County Beef Banquet  
Saturday, November 11, 2017

Women in Agriculture Programs  
December 16, 2017  
January 13, 2018  
February 17, 2018  
March 17, 2018

Private Pesticide Applicator & Fertilizer Re-certification Sessions  
November 16, 2017 from 1:00 to 5:00 p.m. in Lake County  
January 12, 2018 from 8:00 to 12:00 noon in Ashtabula County  
February 2, 2018 from 8:00 to 12:00 noon in Geauga County  
February 9, 2018 from 10:00 to 3:00 p.m. in Portage County  
March 9, 2018 from 1:00 to 5:00 p.m. in Trumbull County

Exploring the Small Farm Dream  
Saturday, January 20, 2018

Farm Management School  
January 22, February 19 & March 12
2018 Northeast Ohio Winter Agronomy School  
Wednesday February 21, 2018

2018 Winter Beef School (Calving School)  
Thursday, February 22, 2018

2018 Ashtabula County Dairy Banquet  
Saturday, March 24, 2018

21st Annual Joe Bodnar Memorial Northern Classic Steer & Heifer Show  
Saturday, April 21, 2018

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Ashtabula County

28th Annual Beef Banquet

November 11, 2017
7:00 p.m.
Lenox Community Center
2509 Lenox-New Lyme Road
Jefferson, Ohio

Tickets are $25 per person. Includes your farm’s 2018 membership into the Ashtabula County Cattlemen’s Association.

Banquet will include the election of two ACCA directors, entertainment, door prizes, and a great Prime Rib dinner!

Call OSU Extension at 440-576-9008 for more details on how to purchase banquet tickets. Ticket reservations are required by November 3, 2017 so that adequate meal preparations can be made.
Control of Marestail in No-till Soybeans

Marestail Biology

- Marestail (aka horseweed) has two primary periods of emergence - from late summer into fall, and from late March through June.
- Marestail plants overwinter in the rosette stage, and remain in this low-growing stage through late April, followed by stem elongation (bolting) and growth to an eventual height of 3 to 6 feet. Plants that emerge the previous fall will start stem elongation earlier than spring-emerging plants.
- Marestail is most easily controlled when in the seedling or rosette stage
- Marestail competes with the soybeans throughout the growing season, and reduces crop yield. Marestail matures in late summer or early fall, and large mature plants can interfere with soybean harvest.
- Marestail plants can produce up to 200,000 seed that are transported by wind, providing for effective spread of herbicide-resistant populations.

Soybean yield loss due to marestail

- Herbicide programs should consist of: 1) fall and spring burndown treatments (or two spring treatments - early spring and at plant) to ensure that the field is free of marestail at the time of soybean planting, and 2) spring-applied residual (PRE) herbicides to control marestail for another 6 to 8 weeks after planting.
- Failure to follow these guidelines can result in poor control and reduced soybean yield. We observed the following soybean yields in a 2010 OSU marestail study:
  - 51 bu/A - the burndown treatment failed to control emerged plants
  - 57 bu/A - the burndown treatment was effective, but there was no residual herbicide
  - 65 bu/A - the burndown was effective and included residual herbicides

Information listed here is based on research and outreach Extension programming at Purdue University, Ohio State University, and elsewhere. The use of trade names is for clarity to readers and does not imply endorsement of a particular brand nor does exclusion imply non-approval. Consult herbicide labels for the most current information. Copies, reproductions, or transcriptions of this document or its information must bear the statement “Produced and prepared by Purdue University or Ohio State University Extension Weed Science” unless approval is given by the author.
**Herbicide resistance in marestail**

- Most populations of marestail in Ohio and Indiana are resistant to glyphosate (group 9), and will not be controlled by burndown or postemergence applications of glyphosate alone.

- Many marestail populations are now also resistant to group 2 (ALS-inhibiting - e.g Classic, FirstRate) herbicides. Growers should therefore not expect to obtain effective POST control in soybeans with combinations of glyphosate plus Classic, Synchrony, or FirstRate. Postemergence group 14 herbicides, such as Flexstar, Cobra, and Cadet, also do not control marestail.

**Other impacts of multiple resistance (group 2 + 9)**

- Fall-applied Canopy or other chlorimuron- or cloransulam-containing herbicides will not provide residual control of group 2-resistant marestail into spring. Activity of other residual herbicides does not persist from fall into spring, and their use should be reserved for spring applications.

- The ALS component of residual premix products will not contribute to marestail control when applied in spring. Spring-applied residuals should include active rates of non-ALS herbicides - metribuzin, flumioxazin (Valor), sulfentrazone (Authority), or higher rates of saflufenacil (Sharpen).

- In burndown applications, there will be no added effectiveness on emerged marestail from products that contain chlorimuron or cloransulam, which makes selection of the other herbicides in the mix more important.

**LibertyLink soybeans - the most effective marestail control strategy**

- LibertyLink soybeans are the most effective tool for management of herbicide-resistant marestail, especially in fields with high marestail populations.

- Use burndown and residual herbicides as outlined on the next two pages. Apply glufosinate POST (29 oz/A) before marestail plants exceed 6 inches in height. Glufosinate can be applied POST at rates up to 36 oz/A for taller plants or plants that have survived previous herbicide treatments, but control may be variable. Follow with a second POST application of glufosinate as necessary.
Steps for effective management of marestail

1. **Use fall herbicide treatments** in fields with a history of problems or where marestail seedlings are observed in fall. Consider using 2,4-D as the base herbicide to control marestail, and combining it with one of the following to ensure control of other winter weeds:
   - glyphosate; dicamba (dicamba/2,4-D premixes - Brash, WeedMaster, Outlaw, Rifle); Basis/Crusher/Harrow; Express/Nuance; a low rate of Canopy/Cloak EX or DF; or metribuzin
   - can add Canopy/Cloak to other herbicide combinations to obtain residual control of weeds into spring, but do not expect residual from fall-applied Canopy/Cloak to adequately control spring-emerging marestail. We do not recommend the use of other residual herbicides in the fall due to cost and lack of residual control into spring.
   - Do not overspend on fall treatments. Keep the cost of herbicides in the $6 to $15 range.

2. **Apply effective burndown herbicides in spring.** Do not plant into existing stands of marestail. Start weedfree at the time of planting by using one of the following preplant herbicide treatments, applied when marestail plants are still in the rosette stage. Note - tillage close to time of planting also effectively removes marestail, but must thoroughly mix the upper few inches of soil and uproot existing plants.
   - 2,4-D ester plus glyphosate (1.5 lb ae/A)
   - Saflufenacil product (Sharpen/Verdict) plus MSO (1% v/v) plus either glyphosate or Liberty
   - 2,4-D ester plus glyphosate plus Sharpen/Verdict plus MSO (1% v/v)
   - 2,4-D ester plus Gramoxone (3 to 4 pts/A) plus a metribuzin-containing herbicide
   - glufosinate - 29 to 36 oz/A (addition of 2,4-D and/or metribuzin can improve control)
   - The mixture of glyphosate and 2,4-D ester applied in the spring has become variable for control of marestail over time, especially in fields that were not treated the previous fall. Plants should be newly emerged/small rosettes at the time of application for best results. In fields where this mixture has previously failed to provide effective control, add metribuzin and/or Sharpen or use one of the other burndown treatments listed above.
   - Control can be improved by using the highest rate of a 2,4-D ester product that is allowed, based on the interval between application and soybean planting. For all 2,4-D ester products, rates up to 0.5 lb active ingredient/A must be applied at least 7 days before planting. Rates between 0.5 and 1.0 lb/A should be applied at least 30 days before planting, with the exception of several products (E-99, Salvo, and Weedone 650) that allow 1 lb/A to be applied 15 days before planting.
   - Mixtures of Sharpen with herbicides containing other group 14 herbicides (flumioxazin, sulfentrazone, fomesafen) must be applied 14 days prior to soybean planting on most soils, and 30 days prior to planting on coarse-textured soils with less than 2% organic matter.
   - The addition of dicamba to early spring burndown treatments can improve control or emerged marestail, especially plants that have overwintered.Dicamba can be more effective than 2,4-D on marestail in the spring, but has more potential to injure soybeans if the recrop guidelines are not followed. Following dicamba application, soybeans can be planted 14 to 28 days **after an inch of rain has occurred** (in total). For example, the Clarity label states the following - “following application of Clarity and a minimum accumulation of one inch of rain, a waiting interval of 14 days is required for rates of 8 oz/A or less, and 28 days for rates up to 16 oz/A".
3. **Include non-ALS residual herbicides** with the burndown treatment, for control of marestail until the soybean leaf canopy develops.

- flumioxazin - Valor/Encompass/Outflank/Panther, Valor XLT, Envive/Enlite, Fierce, Fierce XLT, Surveil
- sulfentrazone - Authority First, Sonic, Authority XL/Maxx, Authority, Authority Assist, BroadAxe
- Metribuzin - Metri DF, Tricor, Glory (at least 8 oz/A, and preferably 10 to 12 oz/A), but do not exceed recommended rate for soil type

- Increase rate or add metribuzin to bring total rate to 0.38 to 0.5 lbs ai/A, for premix products that contain metribuzin, such as Boundary/Ledger, Canopy/Cloak DF, Intimidator, Matador, Authority MTZ, Ransom
- In OSU research, most effective residual control has occurred with mixtures that contain two non-ALS residual herbicide components. Examples: mixture of a flumioxazin or sulfentrazone product with metribuzin; mixture of a metribuzin product with Sharpen (1.5 to 2 oz). Trivence and Ransom are examples of premixes that contain flumioxazin and metribuzin.
- Residual control of marestail with Sharpen occurs primarily at the 1.5 to 2 oz rate, which must be applied 14 to 30 days prior to planting - see label for specific information on application timing.
- Where early spring application is needed due to lack of a treatment the previous fall, it is especially important to increase herbicide rates and use more complex mixtures (or consider split spring approach).

4. **No fall treatment? - consider split-spring applications.** Failing to treat fields in the fall can result in a population of overwintered marestail plants the following spring, which should be controlled early in spring to ensure effective burndown. Applying all of the burndown and residual herbicide early can result in poor control of plants that emerge mid-season. An alternative approach is to apply burndown herbicides with some of the residual herbicide in early spring, and then when soybeans are planted, apply the rest of the residual herbicide. The second application may require some additional burndown herbicide. Examples here include:

- early spring - glyphosate + 2,4-D + Sonic (2.5 oz/A); at plant - Sonic (2.5 oz) + Gramoxone
- early spring - glyphosate + 2,4-D + metribuzin (4 oz); at plant - Canopy DF (4 oz) + metribuzin (2 oz) + Sharpen (1 oz)
- early spring - glyphosate + 2,4-D + metribuzin (6 oz); 7 days preplant - Envive (4 oz) + 2,4-D ester

5. **So this all seems really involved. Can't I just do it all with one spring preplant treatment?** 

Maybe - but this is not an approach that has consistently worked well (see photos below). It can be difficult to accomplish unless the marestail population in the field has been well managed for several years and the population is generally low. Growers should use their own previous experiences here as guidance, and plan on increasing the complexity and rates of the herbicide program. Problems with skipping the fall treatment, and applying everything at once in spring include the following: 1) applying early in spring when plants are small can result in poor control of plants that are emerging in mid-season if the residual herbicide runs out; and 2) applying closer to planting to maximize the length of residual often results in less effective control of larger, older marestail plants, especially those that have overwintered.