CFAES OHIO STATE UNIVERSITY EXTENSION

Morrow County SCARLET & GRAY News

Volume 17 Issue 4 • November/December 2021

4-H Project Members win at State Fair!!

Although the State Fair was closed to the general public this year, 4-H members were able to participate in the annual statewide 4-H judging that takes place the end of July. Congratulations to the following 4-H members on their outstanding achievement! Only one 4-H member is selected in the State of Ohio for the Clock Trophy Award per project. Only the top 10% of 4-H members receive Outstanding and Honorable mention awards.

L to R. ***Belladonna Threadgill*** *– Clock Trophy & Outstanding Winner, Leadership Road Trip,* ***Anna Marocco*** *– Clock Trophy & Outstanding Winner, Diversity: Source of Our Strength,* ***Collin Bowman*** *– Clock Trophy & Outstanding Winner, Finishing Up Woodworking,* ***Emma Smith*** *– Outstanding of the Day, Senior Individual Demonstration;* ***Makayla Rhea*** *– Outstanding of the Day, Junior Individual Demonstration;* ***Natori Clevenger*** *– Outstanding of the Day, Measuring Up, Jr. Woodworking;* ***Megan Gardner*** *– Honorable Mention, Cat 2 (age 13+)*

Cattlemen host Family Night

By Elizabeth Leonhard, 2022 Morrow County Senior Beef Ambassador

The Family Night out with the Morrow County Cattlemen's Association was held on September 18, 2021, beginning at 4:30 p.m. The event was hosted by Kelly Sautter-Tennant and Dave Lehman at LS SimAngus Farm.

The 2021 Morrow County Cattlemen's Association award winners are as follows:

Herdsman: Adult Mary Meimer; **Youth** Porter Beck

Commercial Producer: Adult David Gompf; **Youth** Lane Rizor

Seedstock Producer: Adult KSR Cattle Company/ Karol Skidmore-Roth; **Youth** Colten Beck

Industry Excellence: Adult Roger Beck; **Youth** Mason Powell

Young Cattleman: Adult Jim and Mary Meimer; **Youth** Lane Rizor

Three Beef Ambassadors were chosen. Passing on the Ambassadorship were Juniors Amelia and Mathias Bender. Holly Barga, daughter of Jennifer Barga, is the 2022 Junior Ambassador. Elizabeth Leonhard, daughter of Larry and Emily Leonhard, and Mason Powell, son of John and Heather Powell, are the 2022 Senior Ambassadors.

Congratulations to the 2022 Morrow County Beef Ambassadors, left to right: Elizabeth Leonhard (Senior), Holly Barga, (Junior), and Mason Powell (Senior)

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AGRICULTURE

Tips to help prevent winter barn fires

By Jason Hartschuh, OSU Extension Educator ANR, Crawford County

(Previously published in Farm and Dairy, November 14, 2019)

As I dig in the closet to find a few more clothes to stay warm when I go to the barn, it proves winter is rolling in fast and I had better get the barns ready.

Usually, when I think about getting barns ready for winter it is making sure I can keep drafts off the calves. There is one other big thing to think about and inspect as you prepare for winter, are there any fire hazards in your barn?

Heaters

The first fire hazard that comes to mind is the six different barn heaters we run in the winter. During the summer, we shut the gas off to all these heaters to prevent a fire, especially since many of these heaters have a standing pilot light.

When it comes time to light them for winter, the dust is an inch deep — okay, not an inch deep but they are dirty. This is why you need to plan further ahead than the night the barn will freeze to light these heaters.

Take a portable air compressor to the barn, remove any covers you can and blow out the dust — not just in the burner but on the heat shields and wherever dust and cobwebs accumulate.

When you turn the gas on, take the time to smell for gas from the valve to heater in case a joint started to leak over the summer.

It is also recommended that you light the heater in the morning when you plan to be around most of the day to check and make sure it is functioning properly; the worst possible time to light heaters is right before going home for the night.

Electrical system

Open flame heaters are not the only fire hazard present on the farm. When was the last time you inspected the electrical system in your barn — everything from the fuse box, electrical wires, and light bulbs? Inspections should be conducted every year. Dust and cobwebs should be cleaned from the boxes and wires inspected for damage from water or animals chewing on them.

LED lights have come a long way in helping to prevent barn fires, but if you have incandescent bulbs, they should be in globes in case the bulbs break. Any type of bulb that animals can reach needs protected so that they cannot be broken.

Temporary heat lamps

Another common fire starter is temporary heat lamps. Even if they are only used for a couple days each year, they need hung with a chain not twin string. If at all possible, have them plugged directly into an outlet. The more extension cords running through the barn, the greater the fire risk. Lastly, purchase heat lamps that are fully enclosed so that if they fall the bulbs have less of a chance of breaking and starting a fire.

Have a plan

While you rarely think a fire will happen on your farm, having a plan in place in case it does happen someday will save you lots of stress. It only takes three or four minutes for an enclosed barn to be full of smoke, and within six minutes it can be fully engulfed with visible flames.

After fire prevention measures are taken, having fire extinguishers at every entrance to the barn improves your ability to extinguish the flames and save your barn. Remember it only takes three minutes to fill the barn with smoke. Is that enough time to reach a fire extinguisher and make it back?

Barn evacuation

If you don't make it back in time, what is your barn evacuation plan, the animals will need to go someplace besides being turned loose. Loose animals will often run back into the burning barn and can be a hazard to first responders trying to battle the fire and shuttle water. Once animals are moved to a safe location, they should be hosed off if at all possible in case embers landed on the animals and are under their hair.

In order for the fire department to battle the fire, the electric needs shut off to your barn. Can this be done on your farm?

Another good prevention measure is to invite the local fire department to your farm every couple years so that they can make plans for where water will come from and look over the design of your barn in order to have an attack plan before they are paged out to your place.

Hopefully by using prevention strategies you never have to use your plans for a bad day.

Christmas Wreath Decorate and Take

Join the Morrow County Master Gardener Volunteers to learn about design and to creative your own beautiful Christmas wreath to take home.

When: Dec. 6th at 6 p.m. & Dec. 7th at 6 p.m.

Where: OSU Extension - Morrow County Ag Credit Building, 2nd Floor Conference Room, 5362 US Hwy. 42, Mt. Gilead, OH 43338

Cost: $35.00

Please RSVP at 419-947-1070

Fall is for planting garlic

By Carri J. Jagger

Part I - Watch for Part 2 in the spring

If you have ever wanted to try your hand at growing garlic now is the time to think about planting it. Garlic should be planted between Halloween and Thanksgiving and you will want to start with a good seed source from a reputable seed company. Your soil should be a well-drained sandy loam with a pH between 6.0 and 7.0. Garlic needs 1 to 1.25 pounds of 19-19-19 fertilizer per 100 square feet of bed or 1.5 to 2 pounds of 12-12-12 fertilizer per 100 square feet of bed. Only apply ½ of this at planting and then apply the other half in the spring when growth resumes (you will see little green sprouts peeking out of the mulch.)

Once you have your soil worked up and fertilizer worked in you can start to plant your garlic. Garlic comes in bulbs. Depending on the type and variety, the bulbs can have anywhere from 5 - 16 cloves per bulb. Separate the cloves from the bulb when you are ready to plant. Don't worry about peeling the cloves, they will grow fine. Dig a row 2 inches deep and place your clove basal plate (big end) down. Space the cloves 4-5 inches apart and gently press them into the soil to keep them upright.

Once your cloves are set out you can gently cover them up. If you are planting more than one row space your rows 12-24 inches apart. Once your cloves are covered with soil, 4 inches of mulch like clean straw or leaves should be added to the rows to protect the garlic for the winter and also to smother out any winter annual weeds.

Class schedule for Perry Cook Memorial Library

Carri Jagger, Agriculture and Natural Resources Educator will be teaching a monthly horticulture class at Perry Cook Memorial Library, 7406 CR 242, Mt Gilead, OH 43338. Classes are open to anyone who wants to learn!

Thursday, Nov. 18th at 6 p.m.: Wreath Decorate and Take. RSVP to OSU Extension 419-947-1070. Cost $35.00

Wednesday, Nov. 24th at 2 p.m.: Foodscaping

Wednesday, Dec. 22nd at 2 p.m.: Fresh cut tree, live tree and poinsettia care

Wednesday, Jan. 26th at 2 p.m.: Container Gardening

Scan the QR code to sign up for the weekly Ag and Horticulture Blog.

Wednesday, Feb. 23rd at 2 p.m.: Selecting Vegetable Varieties

Wednesday, Mar. 30th at 2 p.m.: Seeding Starting

Wednesday, April 27th at 2 p.m.: Companion Planting

Wednesday, May 25th at 2 p.m.: Creating a pollinator garden with native perennials

Wednesday, June 22nd at 2 pm: Common Garden Insects

Wednesday, July 27th at 2 pm.: Common Garden Diseases

Wednesday, Aug. 24th at 2 p.m.: Harvesting Produce

Follow us on Facebook: Ohio State University Extension - Morrow County

Watch us on Youtube: OSU Extension Morrow County

Contact information: Carri Jagger, ANR Educator, 419-947-1070, Jagger.6@osu.edu

Would you like to become a Master Gardener Volunteer?

The Ohio State University Extension Master Gardener Volunteer (MGV) program provides intensive training in horticulture to interested Ohio residents who then volunteer their time assisting with educational programs and activities for Ohio residents through their local OSU Extension county office.

Volunteers are not required to have gardening skills or knowledge; a passion for learning about gardening and sharing this knowledge with others is a must!

Working with county Extension personnel, Master Gardener Volunteers provide educational services to their communities such as: answering gardening questions from the public; conducting plant clinics; gardening activities with children, senior citizens, or disabled persons; beautifying the community; developing community or demonstration gardens; and other horticultural activities.

OSU Extension Morrow County will be holding a MGV training class in the spring and summer of 2022. If you are interested in becoming a Morrow County Master Gardener Volunteer please call Carri Jagger 419-947-1070 to learn more.

AGRICULTURE

Heifer development beginning at weaning

By Steve Boyles,
OSU Extension Beef Specialist

HEIFER SELECTION: Heifers can be sold at weaning or anytime thereafter. Select at least 20% excess and continue growing the heifers until breeding. A second selection at yearling age is helpful. Let the bull or artificial insemination program select the heifers you keep by maintaining a relatively short breeding season (45 days). Pregnancy diagnosis after the breeding season provides another opportunity for culling. A final selection can be made after heifers wean their first calf. Weaning weight of the first calf is a fairly good, though not foolproof, indicator of future production.

EARLY GROWTH (weaning and yearling weight) AND FRAME: The traditional method for choosing replacements is pick the big ones at weaning. Traditional selection is simple and is not necessarily all bad. If growth is needed, selection on size will provide it. The bigger heifers are generally older, and thus selection is from the earlier calving cows. It also may (or may not) select heifers of heavier milking cows. Heavier and older heifers are more likely to cycle and breed early and be well on their way to having acceptable lifetime performance.

However, there are problems with the traditional method of selection. Some of the heaviest heifers at weaning may be fat and offer the potential of poor lifetime milk production due to fat deposits in the udder. Some big heifers are fast growing due to an endocrine imbalance and are subfertile at breeding.

The biggest problems traditional heifer selection is "frame creep". This is the gradual increase in mature cow size over time resulting from the use of larger frame bulls and retention of their daughters. The larger, higher maintenance dams may be too big for the feed resources. If nutrition does not change, these cows may suffer reproductively.

Selecting heifers for larger actual weight will generally result in a more uniform group capable of reaching pubertal weight at about the same time. So long as their sires and grandsires are not too big, there is little danger that selecting the larger heifers will cause significant "frame creep". Be careful not to mistake frame for weight. Framey heifers with below average body condition may be "hard keepers" later in life.

FRAME SIZE: Matching the development program with genotype: We know that most components of fertility that influence first calving and subsequent reproductive performance are not highly heritable. This suggests that management practices are most likely to influence the majority of factors related to reproductive performance. How we manage replacement heifer calves from the time they are weaned from their dams to the beginning of the first breeding period is extremely critical for their subsequent performance.

Studies indicate that puberty can be expected to occur at a genetically predetermined size among individual animals, and only when heifers reach target weights can high pregnancy rates be obtained. In other words, heifers with the genetic potential to reach a heavier mature weight must attain a heavier prebreeding weight before their first breeding season. Using the standard set by the Beef Improvement Federation for nine frame-size classifications for U.S. breeding cattle (Table 5), producers can estimate body composition and energy requirements per pound of gain at various weights during the feeding period.

Weaning weight and yearling weight are moderately to highly heritable traits (.25-.50). As a rough guide, heifers that have within-herd weaning weight ratios below 90 (herd average 100) should be culled in a commercial herd. One caution to keep in mind is watch for calves that have high adjusted weaning weights and low actual weaning weights. These calves may come from heavy milking cows that are late calvers in the herd. In a purebred herd, the heifer's EPDs for weaning and yearling weight should be used when making selection decisions on growth. If seedstock producers are having trouble keeping their heaviest milking cows (high milk EPDs) in the early part of the calving season, they need to be aware of the impact that the some of these cows could have for their commercial bull buyers.

Yearling weights are a more accurate predictor of growth potential than weaning weights. Yearling hip heights are more accurate for predicting mature size than weaning hip height. Heifers with the heaviest yearling weights tend to be the largest framed. Maximum acceptable frame scores may need to be established to match cow size with feed resources. To remove your personal biases, it is suggested an unbiased 3rd party measure your heifers and categorize them to frame and estimated mature size.

Growth is an important trait in heifer selection but there are other important traits. What are those traits?

MATERNAL/PRODUCTION TRAITS: The traits that are important in replacement heifers are the maternal traits: early puberty, fertility, calving ease, milk, soundness (longevity), temperament and efficiency. Early puberty is highly heritable ($H2 = 50\%$) and related to early first pregnancy. Calving ease is important because it affects the time required for rebreeding. Soundness traits (feet, legs, udders, eye, etc.) are highly heritable and are related to longevity and productivity. Genes for mastitis resistance have been identified; selection for bloat resistance have been accomplished; evidence has been developed indicating genetic differences in the incidence of fescue toxicity.

HEIFER SELECTION WITH CROSS-BREEDING SYSTEMS: Hybrid vigor is important but is not everything. Producers should not overlook good replacement prospects just to gain a little more hybrid vigor. Keeping heifers of terminal sires may cause "frame creep".

TIME WHEN BORN: Adjusted 205-day weights and ratios provide a better estimate of the true genetic differences in preweaning growth of the calves and milking ability of the cow than do actual weaning weights. Late-born calves with light, actual weaning weights can still have excellent adjusted 205-day weights and ratios.

Table 5. Relationship of Frame Score and Hip Height to Estimated Mature Cow Weight[a]

	Hip Height (inches)			Cow Weight
Frame Score	7 Months	12 Months	Maturity	*(estimated, lbs)*
1	35	39	44	880
2	37	41	46	955
3	39	43	48	1030
4	41	45	50	1100
5	43	47	52	1175
6	45	49	54	1250
7	47	51	56	1320
8	49	53	58	1395
9	51	55	60	1470

[a]Hip height (in.) based on Beef Improvement Federation standards. Weights (lb) are expected averages for flesh condition (body condition score 5). Source: Fox, D. G., C. J. Sniffen, and J. D. O'Connor. 1988. Adjusting nutrient requirements of beef cattle for animal and environmental variations. Journal of Animal Science 66:1475.

MILK PRODUCTION: Caution, some heavy milking cows may not meet nutritional requirements through the available forage. The calving intervals for these cows will generally exceed 370 days. Selecting replacement heifers out of these cows could eventually cause an increase in open cows. Heifers with the heavier actual weaning weights are more likely to cycle early and calve early as 2-year-olds. Therefore, actual weaning weights may do a better job of identifying the heifers and cows that will be the most productive. Seldom should heifers be selected as replacements that have low actual weaning weights, but high adjusted weights and ratios.

Seedstock producers are selling the "genetics" for growth and milk. The adjusted weights and other genetic indicators such as pedigree EPDs become more important. However, seedstock operators should not produce cattle that are not adaptable to their customer's resources. If seedstock producers are having trouble keeping their heaviest milking cows in the early part of the calving season, they need to be aware of the impact that the some of these cows could have for their commercial bull buyers.

DISPOSITION: Research has found differences in chute scores between heifer and steers. It has been found that steers have a lower (more desirable) average temperament rating than heifers. Cattle that are calmer have higher average daily gains than do cattle with excitable temperaments.

Developing a Winter feeding program

By Steve Boyles,
OSU Extension Beef Specialist

Winter feed costs are the largest single expense in most livestock grazing production systems. Extending the grazing to reduce the cost of feeding stored feed will greatly increase profits. Labor can be reduced 25% or more. Rotational grazing takes about three hours per acre per year as opposed to hay production, which takes seven hours per acre per year. The cost for grazing a cow per day is $0.25 compared to $1.00 per day to feed hay to a cow.

The first step is to evaluate the potential, available, existing feed. Crop residue can be an abundant winter feed. Corn stalks can maintain a spring calving cow in good body condition for about 60 days after corn harvest. The feed value will decline quickly after the 60-day period. Cattle will select and eat grain, then husks and leaves, and last cobs and stalks. Strip grazing increases utilization, rations the feed, and reduces the need for supplementation. The crop fields should be grazed so that adequate residue remains soil erosion control.

Stockpiled perennial grasses can be grazed in the late fall/early winter. The general recommendation is to clip or make hay in the field during the end of July and apply 30 to 50 pounds of nitrogen per acre. High-producing, clean, well-drained fescue and orchard grass meadows would be a good choice. Let the forage grow until you need it. Strip grazing will increase utilization.

Winter annual forage crops can be used to provide grazing. Brassicas are easy to establish, fast-growing, high-yielding, and high-quality and can withstand cold temperatures. Turnips can reach maximum quality in as little as 60 days. The tops can tolerate temperatures down to 20 degrees and the bulbs down to 10 degrees. Cows and sheep will eat both the tops and bulbs.

Grazing and presetting round bales prior to feeding can reduce trampling and extend the grazing season. Setting rounds 20 feet on center in the fall when the weather is fit and moving a temporary electric fence to feed them reduces winter feeding time. Hay should be fed away from drainage ways and near livestock watering sources. Feeding hay in low fertility areas will improve the fertility and future pasture quality.

Livestock heavy use areas or pads should be located outside the flood plains. If the pad is located close to a watercourse, run off and manure from the pad should be managed to protect the stream from pollution. These areas should be located at least 300 feet away from neighboring residences and away from wells. A manure management system should be designed to handle any accumulated manure on the pad.

More details on these options can be found in OSU Extension Bulletin 872: Maximizing Fall and Winter Grazing of Beef Cows and Stocker Cattle.

AGRICULTURE

Recognizing the risks of broadleaf weeds in pasture

By Christine Gelley, Agriculture and Natural Resources Educator, Noble County OSU Extension

It is often said that, "Any plant in the wrong place is a weed."

Well, in a pasture situation, there tend to be quite a few plants that weren't intentionally planted there but thrive there regardless. It can be challenging to determine if these weeds are threatening or adding beneficial diversity to our pasture sward. Broadleaf weeds tend to be easier to identify and control than grassy weeds in a pasture setting, but can still be puzzling depending on lifecycle, growth stage, flower arrangement, and growth habit.

One that commonly confuses land managers in Southeast Ohio is spotted knapweed. Spotted knapweed is a detrimental weed that shares similarities to many less threatening pasture plants. The color of the flower is similar to that of red clover, the growth habit is similar to chicory, and the flower shape is similar to Canada thistle and ironweed. However, the combination of growth habit, color, and flower shape is unique to spotted knapweed. Spotted knapweed may possess as many as 200 pink to purple blooms per plant. The mature seed heads resemble Canada thistle, a tight cluster of seeds with a fluffy pappus attached. The pappus helps the seed move with wind, water, animals, and vehicles.

This weed is similar to a biennial, in that the first year of growth there is no flower, just a rosette of five to twelve irregularly lobed hairy leaves. The plant will flower in the second year and continue to flower in the years following. Mature plants may be one to four feet in height, slender or bushy, and will have a deep taproot. It is quite attractive to a variety of pollinators but should not be propagated or preserved in the landscape for this purpose. Many other wildflowers with fewer risks are equivalent food stocks for pollinators.

Spotted knapweed is a prolific seed producer, so if knapweed is not addressed in year two, a population explosion may occur in year three. It gets the name "spotted" because the flower receptacle bracts have dark brown tips. Knapweed is aggressive because it has few natural predators in Ohio. Allelopathic compounds have been isolated from knapweeds, which are chemical substances that can leach from plants and weaken competitors, but the severity of the allelopathic potential remains under investigation. Animals are unfamiliar with it, so grazing as a control is ineffective and it thrives on marginal soils. It can easily out compete weak stands of desirable plants for nutrients.

There are 21 knapweed species and three hybrid knapweeds present in North America. All of them are exotic. They originally arrived with settlers from Europe and Asia in the late-1800s and early 1900s in contaminated hay. Contaminated hay continues to be one of the leading ways seed spreads throughout ecosystems. It is how we suspect it was introduced in our region as well. Spotted knapweed is just one of six especially problematic knapweeds that now colonize over five million acres of rangelands, pastures, crop fields, and waste spaces across the continent. It is also the most prevalent and has been detected in 46 states as of 2015.

Mowing for control is marginally successful. It does help prevent the development of seed, but the plant is able to flower below the height of a mower deck. Biological control using various insects has proven beneficial in western systems but are difficult to secure in the eastern part of the United States. Chemical treatment with readily available broadleaf herbicides and glyphosate for spot treatment has been successful in grass pastures of our region if timed appropriately. Adequately fertilizing pastures can be helpful for increasing the health and competitiveness of desirable plants against the onslaught of this invader.

Some commonly used broadleaf herbicides that are also effective on spotted knapweed include:

- Aminopyralid
- Aminopyralid + 2,4-D
- Clopyralid 3,
- 2,4-D amine or ester
- Dicamba
- Dicamba + 2,4-D
- Picloram 22K

Others may work as well, but effectiveness is unknown or only considered fair in comparison.

The best control tools for spotted knapweed and many other weeds are early detection and early action. Hand pulling and spot spraying young plants that are few and far between can be effective on new invasions. However, heavy infestations will likely take a more creative and lengthy approach to treat including a combination of management tactics.

If you come across something you suspect might be spotted knapweed or another broadleaf weed that is unfamiliar, please contact your county Extension office for assistance with identification and corresponding treatment, especially for those with toxicity concerns for livestock. Examples of other high-profile weeds include: poison hemlock, the nightshades, pokeweed, cress-leaf groundsel, milkweed, hemp dogbane, buttercup, and more. There are some ways that you can streamline the identification process and improve the swiftness of a determination when seeking assistance.

If you bring in a plant sample to an office for identification, bring a whole plant- roots, stems, leaves, flowers, and all. Also, take a photo of the environment it was taken from. When submitting a photograph or video sample take a shot from far away including the surrounding location where the plant was found. Then take shots up close and in focus that capture all sides of the specimen- top side, under side, and side view. Also include an "element of scale". This is a common item that everyone should have in their home that can be used to compare size (ex: a ruler, a pop can, a business card, etc.).

In pasture systems, I define a weed as a plant that has the potential to harm livestock either by poisoning, suppressing the growth of desirable plants, destroying fence, causing skin irritation or injury, and those that reduce by-product value by contaminating hair and hide.

In all cases, getting a confirmed weed I.D. is critical for appropriate treatment, early detection will minimize damages, and integrating multiple control methods into the treatment plan will yield the best results.

Spotted knapweed may possess as many as 200 pink to purple blooms per plant. Photo: by author

Step #1 for treatment of pasture weeds is accurate identification. Spotted knapweed (far left) is often confused on first glance with other flowers like red clover, chicory, or ironweed. Growth habits are drastically different between all of these plants. (Photo Sources: Steve Dewey of Utah State University and Christine Gelley of OSU Extension)

Cover crop seeding rates

By Alyssa Essman, Mark Loux

Cooler temperatures and maturing crops indicate the start of harvest season. For those growers using cover crops to protect soil and suppress weeds over the winter, it also means the time to establish fall-planted cover crops is imminent. When it comes to cover crops that are used for the suppression of weeds, one species stands alone in effectiveness, affordability, and simplicity of management. Cereal rye is the most popular species planted in the state and in the Midwest for these and many other reasons. Increasingly unpredictable fall weather can delay harvest, and rye can tolerate later fall planting in comparison with some other more frost sensitive species. Rye germinates and grows in lower temperatures than other species and resumes growth with robust biomass production in spring. We know that for the suppression of weeds by cover crops, there are two main drivers – ground cover and biomass production – both of which rye excels at. Beyond planting time and method, rye seeding rate is another factor that requires some consideration when planning establishment. But what is the effect of seeding rate on weed suppression?

If biomass production and ground cover are the main drivers of weed suppression, it would be logical to assume that increased seeding rates would optimize both of these factors and increase the weed suppression potential of a cover crop. Studies have shown that increased seeding rates often lead to higher levels of biomass production. However, the data are less clear in how that translates to differences in weed suppression. When compared to other factors such as spring termination timing, the seeding rate of rye tends to have less of an effect on weed density.

Consider the following:

- A study in Ohio comparing spring marestail density in rye planted at 0, 45 or 90 lb/A found an increase in rye biomass at the higher seeding rate and higher marestail density where no rye was planted. However, there was no difference in marestail density between the two seeding rates of 45 and 90 lb/A.
- Similar marestail suppression was provided by a wheat and cereal rye cover crop drilled at 60 and 120 lb/A before no-till soybeans in a Michigan study.
- In Missouri, researchers saw no difference in biomass among rye seeding rates of 30, 50, 70, 90, and 110 lb/A, and only incremental increases in waterhemp suppression at the higher rates, which they contributed to increases in ground cover.

Results of these and other studies in the Midwest suggest that when cereal rye is used to suppress weeds, increases in seeding rate above 50 lb/A may have less influence than other factors such as spring termination timing. Rates lower than 50 lb/A may also suppress weeds well, but the uniformity of the rye stand and biomass can be more variable. Weed suppression may therefore also be more variable.

For more information on cover crops for weed suppression, visit: https://iwilltakeaction.com/news/cover-crop-fact-sheet-series. This series of four fact sheets covers species selection, establishment, herbicide persistence and carryover, and termination, and how these different factors influence the weed suppression potential of cover crops.

OSU EXTENSION CALENDAR OF EVENTS

OCTOBER 2021

27 Volunteer Appreciation "Drive Thru" Dinner, Morrow County Fairgrounds, 4:30-6:30 p.m.

29 4-H Teen Opportunities Application Due

NOVEMBER 2021

1 Jr. Fair Board, Fairgrounds, 7 p.m.

2 How To Create A Spring Bulb Container Garden, Ag Credit Building Conference Room, 6 p.m.

4 Dairy Board Meeting, Ag Credit Building Conference Room, 12 noon

6 Cattlemen's Meeting, Ag Credit Building Conference Room, 6 p.m.

11 Veterans Day – Office Closed

11 Pork Producers, Ag Credit Building Conference Room, 7 p.m.

17 Dining with Diabetes: Take Charge for the Holidays webinar 12 PM

18 Holiday Wreath Make & Take Workshop, 6 p.m., Perry Cook Memorial Library

18 Horse & Pony Committee, Ag Credit Building Conference Room, 7:30 p.m.

25-26 Thanksgiving Holiday – Office Closed

30 CARTEENS, Ag Credit Building Conference Room, 6:30-8:30 p.m.

DECEMBER 2021

3 Morrow County Chamber of Commerce Christmas Parade, 7 p.m., Mt. Gilead

4 Market Beef Pre-Fair (2022) Weigh-In, 8-11 a.m., Fairgrounds

6 Jr. Fair Board, Fairgrounds, 7 p.m.

6 Holiday Wreath Make & Take Workshop, 6 p.m., Ag Credit Building Conference Room

7 Holiday Wreath Make & Take Workshop, 6 p.m., Ag Credit Building Conference Room