

FARM AND YARD

January 2020

ISU Extension Bremer County

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FOR RURAL AND URBAN FAMILIES

Riparian Buffers Can Make Good Pollinator Habitat

Dana Schweitzer: Program Coordinator, Iowa Monarch Conservation Consortium

Farmers and landowners who want to increase pollinator habitat while also improving water quality should consider the benefits of saturated riparian buffers enhanced with native wildflowers.

Establishing pollinator habitat within riparian zones, where the agricultural value is lower and where the conservation and wildlife benefits are likely high, can be a win-win.

“Landowners looking for the combined benefits of native habitat and water quality can capture both by establishing pollinator-friendly species on top of saturated buffers,” said Dana Schweitzer, program coordinator with the Iowa Monarch Conservation Consortium at Iowa State University.

As part of a four-year field demonstration, Schweitzer, Tom Isenhardt, professor of natural resource ecology and management at Iowa State, and Steve Bradbury, professor of entomology at Iowa State, co-authored a new publication that helps landowners identify the best sites for buffers, the steps to establish a buffer with pollinator habitat and the programs available to help with funding and technical information.

“Establishing and Managing Pollinator Habitat on Saturated Riparian Buffers is a four page publication available on the ISU Extension Store.

Seeding a new or existing buffer with native perennials takes planning, and Schweitzer said landowners should plan at least a year ahead of putting native seed in the soil. Some areas, such as those that have been in a corn-soybean rotation for several years, typically have less weed pressure and are easier to transition. Other areas, including those with cool-season grasses, require more upfront weed management prior to planting a native seed mix.

The publication also outlines the anticipated costs for establishing pollinator habitat over a buffer by comparing different types of site locations, seed and labor costs.

Schweitzer said plots are usually fairly small, ranging from 1-3 acres and require some maintenance every three to five years to sustain a diverse native plant community.



Is your grain in the bin going out of condition?

Kristina TeBockhorst & Shawn Shouse: ISU Extension Agricultural Engineering Specialists

Many producers put grain into their storage bins last fall at higher moisture contents than normal, due to late crop maturity and less in-field drying in 2019. For grain stored wetter than recommended for storage through the winter months (above 15% for corn and 13% for soybeans), it is especially vital to monitor grain this winter to get ahead of situations that could cause a loss in condition.

Maintaining grain temperatures below 35-40 degrees is the best defense against spoilage for grain that is wetter than ideal. To do so, it is necessary to aerate to cool grain in the fall after filling the bin, **plus aerate as often as needed throughout the winter to keep grain cool.**

Even after cooling, grain can warm in storage bins in the winter by solar heating on the bin roof and south-facing walls. It is important to remember that the time required to fully aerate a bin (to cool grain and even out grain temperatures) depends on the fan size, or airflow. A small aeration fan (0.1cfm/bushel) can take nearly a week to fully cool a bin of corn. Determine how long to run your aeration fan in this ICM blog post. Err on the side of running the fan too long to prevent uneven grain temperatures. Run aeration cycles when the averages between the daily high and low temperatures are near 30-35 degrees.

This winter, as you are monitoring grain condition weekly and aerating as needed, be sure to inspect and probe the grain for crusting, damp spots, and warm spots. Smell the first flush of exhaust air after turning on the fan to notice any off-smelling odors that indicate molding (musty or sour). The first flush of air exits the grain within seconds for a large drying fan and within minutes for an aeration fan. Have a plan of action and move grain at the first sign of it going out of condition. Remember that grain above safe storage moisture content will have to be dried or marketed prior to warm temperatures returning in spring.

Producers should also be aware that low test weight corn and or low-quality grain will have a shorter allowable storage time than good quality grain (refer to recent ICM blog post). Corn with a test weight below 53 lbs/bushel may only have about half the effective storage life of 56 lbs/bushel corn. It is not advised to store grain longer than half of its allowable storage time to reduce the risk of quality loss before marketing.



Pruning Landscape Trees

Landscape trees need proper care and management throughout their lives, and one of the most important tree management practices is pruning. When done properly, pruning can improve the health and structure of trees, and provide a safer environment for people, pets, and property. Pruning is more than just indiscriminately removing branches. Proper pruning includes knowing which branches to remove, when to do it, and how to minimize damage to the tree.

The main reason to prune young trees is to develop good branch structure and tree strength. Removing weak branches and correcting poor form when branches are small, will minimize the size of the pruning wounds. Early pruning will also promote strength and balance that will make a tree less susceptible to damage from wind, ice, and snow storms. Attention to developing good structure is most critical in the first 15-20 years of a tree's life.



When To Prune

The best time to prune is in mid to late winter (January-March). When pruned during this time of the year, the tree will begin responding to the wounding early in the spring. A coniferous tree planted in a suitable site, will need minimal pruning throughout its life.

Pruning at other times of the year will not hurt a tree; however the process of sealing the wound may be slowed. Do not prune during the spring from bud break through leaf expansion, and during the period of leaf color change in the fall. A tree is going through major changes at these times, and branch removal can reduce the vigor of a tree. One species where timing of pruning is critical, is oak. The pathogen that causes the disease Oak Wilt can be transmitted to open wounds by a small beetle. Avoid wounding (pruning) oak between early March until late July.

Training Young Trees

Limit pruning of newly planted trees to the removal of dead and broken branches or the correction of multiple leaders. Begin developmental pruning of deciduous trees 2-3 years after planting. Other key things to remember when pruning young trees are to:

- Know the general growth habit of a tree before beginning.
- Leave the temporary lower branches on the tree until they reach 1 inch in diameter to increase trunk growth and root development.
- Always leave 70 percent of the tree height with live branches
- Avoid removing lower branches too quickly, keeping lower branches longer allows for larger and stronger tree trunks
- Concentrate efforts on removing crossing, rubbing, broken, diseased and weak-angled branches in the upper portion of the tree.
- Eliminate double leaders and basal sprouts.
- Develop one main leader on shade tree species such as: oak, maple, ash, and linden.
- Concentrate efforts on removing rubbing and competing branches on species such as crabapple.
- Space permanent branches 15-35 inches apart.
- Remember developmental pruning is an on-going process over the first 15-20 years of a tree's life.

How to Make a Pruning Cut

Before deciding which branches to remove, always examine the tree carefully. Before making a pruning cut, identify the branch bark ridge and branch collar. The branch bark ridge is where the branch and trunk tissue meet. The branch collar is the swollen area just outside the branch bark ridge.

- Do not cut behind the collar and branch bark ridge creating a "flush cut". Removal of these two structures impedes the tree's ability to respond to the wound, which increases the chances of decay development.
- Do not leave a stub.
- Do not top a tree, which is the indiscriminate removal of branches without regard to the location of lateral branches or buds.
- Always remove branches back to their point of origin or to a side branch of sufficient size to assume dominance.

The best indicator of the proficiency of your pruning is the development of wound closure tissue on the tree. Usually within a year after branch removal, a ring (donut-shaped) of callus tissue will begin to develop around the existing wound.

Wound Treatment

Proper pruning is the key to good wound closure. A number of studies have shown that the use of wound dressings or paints does not speed up the tree's ability to seal a wound. In most cases, pruning paints create a more favorable environment for decay causing organisms compared to doing nothing at all. At this time pruning paints are no longer recommended.

How far has tar spot spread in Iowa in 2019?

Dr Alison Robertyson, ISU Associate Professor of Plant Pathology and Microbiology

Throughout the 2019 growing season, pathologists at Iowa State University have been mapping the distribution of tar spot in Iowa. To our surprise, the disease has been observed in 75 counties. While the disease has not been severe enough to cause losses, it is a concern to see it widespread throughout the state. Firstly, it has spread west across the state more quickly than we expected. Secondly, the pathogen is now present throughout the state and consequently tar spot will be another disease for us to keep an eye on in 2020 and beyond.

Identification

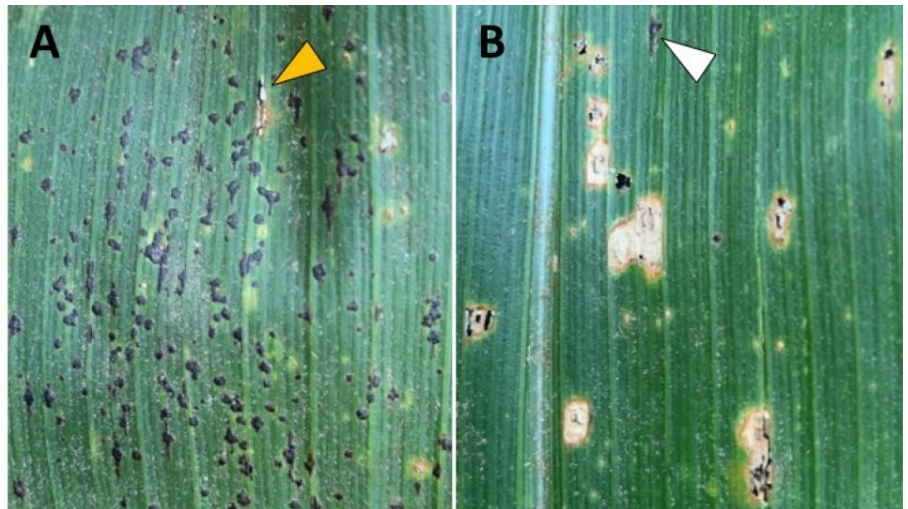
Tar spot produces small, raised, round to irregular-shaped black spots (stroma (singular); stromata (plural)) on the upper and lower leaf surface. These can occur singularly or in clusters with more severe infections. Sometimes tan or brown lesions develop around the tar spots, called fisheye lesions. The key to identifying tar spot is that the black spots cannot be scraped or wiped off the leaf.

We are finding tar spot in fields that still have green leaves and other diseases (northern corn leaf blight, southern rust, grey leaf spot) present in the canopy. Look for tar spots on the ear leaf and above. Be careful not to confuse southern or common rust with tar spot. At this stage of the season, rusts start to produce black teliospores and consequently the pustules are black, so it is easy to confuse rusts for tar spot. If you are not sure, send a sample to the ISU Plant Disease and Insect Clinic.

If you have observed tar spot in a county where we have not documented the disease yet, we would like to know. Diseased leaves can be placed in an envelope and sent to the ISU Plant Disease and Insect Clinic, 2445 ATRB, 2213 Pammel Dr., Ames, IA 50011. There is no charge associated with samples submitted to the clinic for tar spot diagnosis.

The tar spot triangle

Observations at hybrid demonstration plots and trials over the past two growing seasons suggest that while all hybrids are susceptible, some are more susceptible than others. Epidemiological studies suggest the disease is favored by cool (60-70 F), wet conditions. The presence of the disease in the U.S over the past 4 years plus research studies done at Universities across the Midwest indicate that the pathogen that causes tar spot (*Phyllachora maydis*) survives the winter in infested crop residue.



Managing tar spot in 2020

We have a lot to learn about tar spot. Pathologists across the Midwest have been collaborating on various research projects throughout 2019. Data will be shared at winter meetings. For the moment, talk with your seed dealer regarding what hybrids to plant in 2020. If you have observed tar spot on your farm, rotating affected fields out of corn may help reduce the inoculum in the field by allowing time for the infested corn residue to decompose. Stay up-to-date with tar spot reporting at <https://corn.ipmpipe.org/tarspot/>. Scout corn fields. If tar spot is observed, a fungicide may help reduce the disease depending upon when the disease is observed and the timing of the fungicide application.

Beef Carcass and Maternal Traits Mesh

Dan Loy, Professor of Animal Science and Director of Iowa Beef Center; Katy Lippolis, Assistant Professor of Animal Science and Extension Beef Specialist; Erika Lundy, Beth Reynolds & Patrick Wall, ISU Extension Beef Specialist

Single-trait selection in beef cattle breeding is fraught with risk regardless of the focus. Some cattlemen have adopted the idea that there are strictly “maternal” and “terminal” lines of cattle within the Angus breed, resulting in sire selection decision by some to purposefully forego selection toward carcass traits for fear of “ruining the cow herd.”

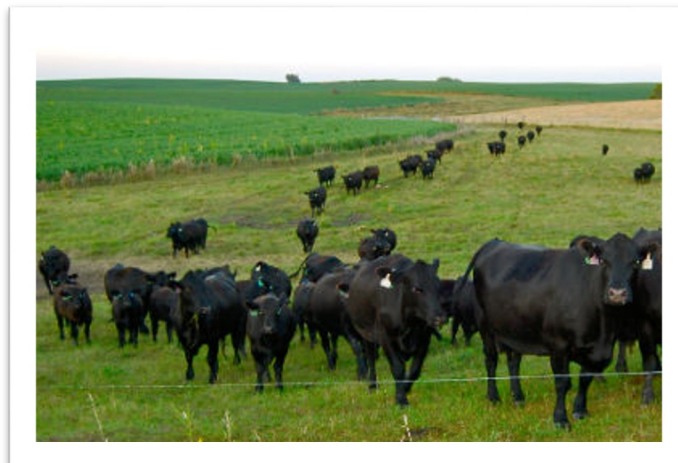
Fortunately, cattlemen seeking multi-trait excellence need not choose between the ideal cow and exceptional carcass merit.

The results of the analyses conducted on the ISU McNay Breeding Project herd that has been selected for intramuscular fat or marbling are mostly consistent with research reviewed in the literature. These results include:

1. Small, positive relationship between milk and marbling EPDs in the herd.
2. A significant positive relationship ($r = 0.206$) between marbling and heifer pregnancy EPDs in the herd.
3. Positive correlations between marbling EPD and the EPDs for scrotal circumference, heifer pregnancy and maternal calving ease.
4. Marbling EPD of the cows in the herd had a weak negative relationship to total number of calves, a weak positive relationship to number of calves born in the spring herd under the management scheme of the herd, and a weak negative relationship with calving interval.
5. Relationships between ultrasound intramuscular fat phenotypes of the progeny were not significantly related to reproductive EPD (CED, CEM, HP, SC and MILK).
6. A tendency for a positive correlation between yearling bull scrotal circumference and marbling scores indicate that selection for increased marbling in this herd may indirectly impacted SC with marbling having no measurable impact on sperm MOT or MOR.

One interesting and notable result that has not been observed previously is positive relationship between heifer pregnancy and marbling EPDs. This is consistent with the relationship of body composition and heifer growth, as well as the use of intramuscular fat serving as a depot to contribute to the energy demands of pregnancy. Selection for marbling in this herd has also not resulted in a detrimental effect on bull fertility. Overall, we could find minimal data to support the assertion that selection for marbling in Angus cattle would have a negative impact on fertility, reproductive or maternal traits. To the contrary, many of the relationships between carcass quality and cow function, although weak, were positive.

For the complete article go to: <https://www.cabcattle.com/about/research/relationship-between-carcass-merit-and-maternal-traits-in-beef-cattle/>



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Calendar of Events



- Jan 25 – Bird/Wildlife Meeting, 9:30-10:30 am, Denver Library
- Feb 12 – Commercial Ag Training, 9 am, Extension Office, Tripoli
- Feb 18 - Soil Fertility Workshop, 9 am, Extension Office, Tripoli
- Feb 19 – Seed Treatment Training, 9 am, Extension Office, Tripoli
- Feb 20 – Volunteer Income Tax Assistance (VITA) 9am-3pm,
Extension Office, Tripoli
- Mar 4 - Ornamental and Turfgrass Training, 9 am, Extension Office,
Tripoli
- Mar 8 - 4-H Annual Omelet Brunch, 8 am-noon, 4-H Building at the
Waverly Fairgrounds
- Mar 11 - Certified Handlers , 9 am, Extension Office, Tripoli