Saturated Riparian Buffers as Promising Water-quality Practice for Crop Fields
Ann Robinson, ISU Ag and Life Sciences Communications

AMES, Iowa — A new technology for cleansing nutrients from water leaving Iowa’s tile-drained fields began with two Iowa State University researchers brainstorming after a professional meeting. Their “back of the napkin” discussion in 2010 led to development of saturated riparian buffers, a new conservation practice that is rapidly gaining interest in Iowa and far beyond.

The challenge they were addressing – how to make traditional riparian conservation buffers more effective at reducing nutrient pollution – has since become a major research focus for Tom Isenhart, professor of natural resources ecology and management, and Dan Jaynes, a soil scientist with the USDA Agricultural Research Service’s National Laboratory for Agriculture and the Environment on campus and affiliate professor of agronomy.

Research had shown that traditional riparian buffers, comprised of trees, shrubs and grasses planted along streams or drainage ditches, have multiple conservation benefits. They can stabilize stream banks, reduce erosion, provide habitat for wildlife and pollinators and sequester carbon. They also improve water quality as surface runoff filters through the buffer’s vegetation and soils.
Dougherty Joins ISU Extension and Outreach as Agricultural Engineering Specialist
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AMES, Iowa – Brian Dougherty has joined Iowa State University Extension and Outreach as an agricultural engineering specialist.

Dougherty, who holds a Master’s degree in agricultural and biosystems engineering from Iowa State, will work with farmers and producers in the northeast portion of the state.

“I am excited to return to northeast Iowa and I look forward to helping producers with the many engineering and environmental challenges they face on their farming operations,” Dougherty said. “ISU Extension and Outreach staff were a tremendous resource for me when I was farming, and I hope to carry that tradition forward and be a resource for others.”

Dougherty joins a team of five agricultural engineering specialists who provide science-based information to conserve land, air and water resources; promote efficient livestock and poultry systems that incorporate a high degree of animal well-being; illustrate the latest techniques in precision agriculture; keep Iowans safe; teach responsible manure management and improve water quality in the state.

“Brian’s experience as a dairy producer is extremely relevant to the environmental issues that are pertinent in northeast Iowa,” said Jay Harmon, interim director of Agriculture and Natural Resources Extension at Iowa State University. “Brian will be a tremendous asset to ISU Extension and Outreach and will be a valuable resource for the producers and communities he serves.”

Before joining the ISU Extension and Outreach staff, Dougherty spent 18 months as a graduate research assistant at Iowa State, investigating the effects of cropping management practices on soil health and nutrient losses to subsurface drainage water. He was chosen as a Nuffield International Farming Scholar, traveling internationally to study soil health, nutrient management and regenerative agricultural practices worldwide.

He also spent time as a research assistant in Oregon State’s Department of Crop and Soil Science while receiving his bachelor’s degree in ecological engineering.

In addition to his academic experience, Dougherty spent 17 years working as the co-owner of Dougherty Family Farms in Waukon, Iowa.
Pruning Oak Trees in Winter
Richard Jauron, Willy Klein, ISU Extension Horticulturalist

Winter, December through February, is the best time to prune oak trees in Iowa. Pruning oak trees in winter greatly reduces the risk of an oak wilt infection. Oak wilt is a fungal disease that is lethal to many oaks. It can be spread from infected trees to healthy trees by sap-feeding beetles called picnic bugs. Oak wilt infections most commonly occur in spring and early summer when the sap-feeding beetles are very active.

During this same time, oak wilt infected trees are producing masses of spore-producing fungal material or spore mats. These mats release a fruity odor that attracts sap-feeding beetles and other insects. As the beetles feed on the spore mats, spores often accumulate on the surface of their bodies. Sap that forms at the surface of pruning cuts made on oaks in spring and early summer may attract sap-feeding beetles that were previously feeding on an oak wilt infested tree. As the beetles feed on the sap of the pruning cut, fungal spores may be dislodged from the bodies of the insects and get into the fresh wound, infecting the tree. Pruning oak trees in winter greatly reduces the risk of an oak wilt infection, as the beetles and fungal mats are not present at that time of year.

What is the proper way to prune oaks and other trees?

When pruning oak and other trees, cut off the branch just beyond the branch collar and branch bark ridge. The branch collar is the swollen area at the base of the branch. The branch bark ridge is the dark, rough bark ridge that separates the branch from the main branch or trunk. Pruning just beyond the branch collar and branch bark ridge retains the tree’s natural defense mechanisms and promotes compartmentalization and callus formation.

To prevent extensive bark damage, use a three-cut procedure when pruning branches that are greater than 1.5 inches in diameter. Make the first cut 6 to 12 inches from the main branch or trunk. Cut upward and go about one-third of the way through the branch. Make the second cut 1 to 2 inches beyond the first. Saw downward from the top of the branch. As the second cut is made, the weight of the branch will cause it to break at the pivot point between the two cuts. (The initial, bottom cut prevents the branch from ripping off a large piece of bark as it breaks.) Make the final cut just beyond the branch collar and branch bark ridge.

Do not apply a pruning paint or wound dressing to pruning cuts. The application of a pruning paint or wound dressing does not prevent wood decay and may interfere with the tree’s natural wound responses. However, there is an exception to the no paint recommendation. If an oak tree needs to be pruned in spring or summer, for example to correct storm damage, paint the pruning cuts with a latex house paint within 15 minutes of making the cuts to prevent the transmission of oak wilt.

Two Advanced Calving Clinics Planned for Eastern Iowa

VINTON, Iowa — Dairy and beef producers are invited to attend one of two advanced calving clinics in early February in Maquoketa and Independence. Iowa State University Extension and Outreach beef specialist Denise Schwab said anyone who attends will learn something new at the clinic regardless of experience with calving out cows.

“These clinics will provide both classroom and hands-on activities presented by Iowa State faculty and private industry veterinarians,” Schwab said. “Classroom topics include nutrition and management for late gestation and early lactation, and neonatal calf care. Hands-on sessions include handling dystocia, including first aid and emergency care.”

Frosty, the life-size cow model, will be used to demonstrate various techniques to help ease calving difficulties and increase live calves. Both clinics will be held on Monday, Feb. 4. The first will be from 9:30 a.m. to 2 p.m. at the Maquoketa High School Ag Building, 600 Washington Street, Maquoketa. The second will run from 5 p.m. to 10 p.m. at the Heartland Acres Event Center, 2600 Swan Lake Blvd., Independence.
Commodity Prices and Higher Interest Rates Drive Modest Farmland Value Loss

Ames, Iowa—After a reprieve in 2017, commodity prices, interest rates, and trade disruptions drove Iowa farmland values down for the fourth time in five years. The average statewide value of an acre of farmland is now estimated to be $7,264. This represents a decrease of 0.8 percent, or $62 per acre, from the 2017 estimate. Land values were determined by the 2018 Iowa State University Land Value Survey, which was conducted in November by the Center for Agricultural and Rural Development (CARD) at Iowa State University and Iowa State University Extension and Outreach. Results from the survey are consistent with results by the Federal Reserve Bank of Chicago, the Realtors Land Institute, and the US Department of Agriculture. Dr. Wendong Zhang, Assistant Professor of Economics at Iowa State University, led the annual survey.

Dr. Zhang said that commodity prices were one of the biggest factors driving down farmland values this year. “Lower commodity prices, in part due to the recent trade disruptions, were cited as the most significant negative factor driving down land values,” Dr. Zhang said. He also noted that despite the downturns, farmers don’t need to worry about a sudden collapse of the US agricultural sector similar to the 1980s farm crisis. “Limited land supply and strong demand by farmers still seems to hold up the land market,” he said. “For five consecutive years, survey respondents have reported fewer sales than the year before, and the ag economy is still robust with 82 percent of the land in Iowa fully paid for.”

Factors Influencing Land Values The most common positive factors influencing land prices noted by survey respondents were limited land supply, strong yields, and low interest rates. The most commonly cited negative influences were lower commodity prices, higher long-term interest rates, and recent tariffs on US soybeans, pork, and other agricultural products. The ISU land value survey was initiated in 1941, the first in the nation, and is sponsored annually by Iowa State University. The survey is typically conducted every November and the results are released mid-December. Only the state average and the district averages are based directly on the ISU survey data. The county estimates are derived using a procedure that combines the ISU survey results with data from the US Census of Agriculture. The ISU Land Value Survey is based on reports by agricultural professionals knowledgeable of land market conditions such as appraisers, farm managers, agricultural lenders, and actual land sales. It is intended to provide information on general land value trends, geographical land price relationships, and factors influencing the Iowa land market. The 2018 survey is based on 793 usable responses from 624 agricultural professionals. Sixty-two percent of the 624 respondents answered the survey online.

For a detailed copy of the report by county, click here or contact your local ISU Extension and Outreach office.
Get to Know More About ISU’s Veterinary Diagnostic and Production Animal Medicine

VDPAM is made up of the following 4 areas:

Veterinary Diagnostic Laboratory  Veterinary Extension  Veterinary Field Services  Food Supply Veterinary Medicine

VDPAM Vision

VDPAM is to support the continual improvement of food animal agriculture and food supply veterinary medicine to benefit Iowa and the world.

Mission Statement

It is the mission of the department to serve animal agriculture through:

- Continuous improvement of the curriculum and methods of teaching in the preeminent Food Supply Veterinary Medical Program.
- Providing timely full-service, high-quality clinical and diagnostic services.
- Leading implementation of disease control, diagnostic practices, enhanced food safety, and animal welfare programs.
- Continuous improvement of food and fiber animal production by whole system analysis, acknowledging the interactions of diet, disease, environment, animal behavior and welfare, and humans.
- Integration and transfer of knowledge obtained through evidence and science based research between academia, practitioners, producers, and the public to establish best practices in food animal production.
- Enhancement of human and animal health through “One Health” research and initiatives.
- Leading research initiatives in food animal diseases, behavior and welfare, food safety, and risk assessment and modeling.
- Sustain a proactive environment for service, teaching, outreach, and research.
- Establishment of interdisciplinary teams answering complex animal and public health, animal welfare, and production efficiency challenges.
- Being globally recognized leaders in identifying and sharing solutions for effective disease control in food animal agriculture.

Our department is made up of highly trained specialists who span a wide range of veterinary disciplines and species interests. We have faculty of all ranks with expertise in diagnostics, medicine, surgery, pathology, microbiology, epidemiology, public health, and production medicine. Most have earned certification from specialty boards. Dozens of additional scientists and laboratory technicians support the research and service components of our department.

Teaching

Our teaching in the professional program emphasizes basic and applied clinical skills for all students. In addition, we offer advanced training in large animal medicine and specialized training for those interested in production medicine. These advanced programs are taught with the premise that the veterinarian can bring a broad-based systems approach to all phases of livestock production in a systemic and effective way.

Research

Our faculty conduct research on diseases of economic importance to swine, beef, dairy, and sheep producers, consumers of animal products, and on environmentally important issues. Access to field cases enhances identification of significant problems and places an emphasis on our abilities to solve those problems.

Examples of projects include circovirus, hepatitis E and PRRSV in swine, anti-microbial resistance associated with human and animal populations, salmonella, toxoplasmosis, BRDC, BVD, Streptococcus suis, community-based swine and beef production, poultry disease control and more.

Professional Practice

Each year more than 75,000 cases are submitted to our Veterinary Diagnostic Laboratory. It is the primary diagnostic institution for Iowa. Nationally, it is one of the largest and ranks in the top echelon for quality of services. We place a high priority on using technological advances to deliver rapid and consistently accurate results to the practitioners and producers who rely on our diagnostic services.

Our professional practice mission is also carried out through the food animal section of the Veterinary Medical Center. Our clinical specialists handle a variety of cases, primarily bovine, as an important referral service for livestock producers throughout the state. Many faculty members travel across Iowa in response to investigatory calls or to provide on-site consultation to deal with production issues affecting swine, beef, dairy or poultry operations.
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Calendar of Events

JANUARY
17 Crop Advantage Series, Hawkeye Community College-Tama Hall, Waterloo, 9 am - 4:30 pm
21 4-H Advisory Committee, Butler County Extension Office, 7 pm
23 Private Pesticide Applicator P-CIC, Christian Reformed Church, Parkersburg, 1:30 - 4:30 pm

FEBRUARY
1 Market Beef Verification due in 4-H Online
2 Clover Patch Meeting, Butler County Extension Office, 9-11 am
2 4-H Club Officer Training, Farm Bureau Office, Allison, 9-11 am
6 Extension Council Meeting, Butler County Extension Office, 7 pm
12 CIC: Commercial Ag Weed, Insect and Plant Disease, Butler County Extension, 9 - 11:30 am
13 Private Pesticide Applicator P-CIC, Butler County Extension Office, 9:30 am - noon
13 4-H Legislative Day, Capitol in Des Moines
20 Confinement Site Manure Applicator Certification, Borlaug Learning Center, Nashua, 1:30 pm
26 North Central Iowa Youth Beef Conference, Ellsworth Comm College, Agriculture & Renewable Energy Center, Iowa Falls, 9 am - 3 pm
27 CIC: Seed Treatment, Butler County Extension Office, 9 - 11:30 am

MARCH
1 Fair Book Cover Contest Due
6 CIC: Ornamental and Turfgrass Applicators, Butler County Extension, 9 - 11:30 am
9 4-H/FFA Swine Weigh In, Butler County Fairgrounds, 10 - 11 am
13 CIC: Certified Handlers, Butler County Extension, 9 - 11:30 am