April 2, 2015

**Mitchell County**

**ISU Extension and Outreach**

315 Main St.

Osage, IA 50461

641-732-5574
daolson@iastate.edu

www.extension.iastate.edu/mitchell

---

**Water Quality and Conservation Tour**

Iowa State University Extension and Outreach will host a water quality and conservation practice tour on April 9. The tour will begin with coffee and discussion at the Borlaug Center at the Northeast Research Farm at 9:30 AM. The bus will leave at 10 AM and join the Mitchell County Soil and Water Conservation District and Iowa Soybean Association Field Day featuring strip-till, no-till, and cover crops hosted by Dean and Josh Sponheim. The tour will continue after lunch with stops at the Charles City WhiteWater at Riverfront Park, a Conservation Reserve Enhancement Program (CREP) wetland near Nashua, a denitrification bioreactor at the Northeast Research Farm, and the Northeast Research Farm water quality research sites. The tour will conclude at 2:30 PM at the Borlaug Center, Northeast Research Farm, 3327 290th Street, Nashua, IA 50658, [http://www.ag.iastate.edu/farms/BorlaugLearningCenter.php](http://www.ag.iastate.edu/farms/BorlaugLearningCenter.php)

The conservation tour is sponsored by Cerro Gordo, Floyd, and Mitchell County Extensions. To reserve your seat on the tour, RSVP to Darla Olson at 641-732-557 or daolson@iastate.edu.

---

**Emerald Ash Borer Treatment Options Recently Revised**

*By Mark Shour, Pesticide Safety Education, 515-294-5963, mshour@iastate.edu*

The four-page Emerald Ash Borer Management Options, PM 2084, has been revised and is available from Iowa State University Extension and Outreach as a free download. The publication provides recommendations on how to protect ash trees from the emerald ash borer. Information about the life stages affected by systemic insecticides, two new professional products and proper use to protect insect pollinators has been added to the publication. It also highlights two pesticides that protect the ash tree for two years. *Agrilus planipennis* is an exotic beetle commonly called Emerald Ash Borer and is native to eastern Asia. It was first detected in the United States near Detroit, Mich., in 2002. Emerald ash borer kills all ash trees by larval burrowing under the bark and eating the actively growing layers of the cambium.

Read more at [http://www.extension.iastate.edu/article/emerald-ash-borer-treatment-options-recently-revised](http://www.extension.iastate.edu/article/emerald-ash-borer-treatment-options-recently-revised)
The Changed Estate Planning World
From ISU CALT March Brief
2013 marked the beginning of major changes in the estate planning landscape. While there had been significant changes to the transfer tax system before 2013, particularly with respect to the changes wrought by the Economic Growth and Tax Relief Recovery Act of 2001 (EGTRRA), the EGTRRA changes expired after 10 years. Further extensions of EGTRRA were only of a temporary nature until the enactment of the American Taxpayer Relief Act (ATRA) of 2013 which constituted a major income tax increase, and increased the tax rates on capital gains, dividends and transfer taxes. ATRA’s changes were of a permanent nature. Also, the additional 3.8 percent tax on passive sources of income under I.R.C. §1411 that was included in the Patient Protection and Affordable Care Act (Obamacare) which was enacted in 2010 and became effective for tax years beginning after 2012, has important implications for the structuring of business entities and succession planning. For many retired clients, Obamacare increases their tax burden in a material way.
Read more at https://www.calt.iastate.edu/article/changed-estate-planning-world.

What Is MidWest Plan Service?
MidWest Plan Service (MWPS), is a university-based publishing cooperative dedicated to disseminating research-based, peer-reviewed, and un-biased publications that support the outreach missions of the 12 North Central Region land-grant universities plus the U.S. Department of Agriculture (USDA).
Publication areas include:
- Construction on the farm
- Crop production
- Farm business
- Fruit & vegetable production
- Grain handling and storage
- Country and rural living
- Livestock operations
- Manure management for livestock
- Ventilation for livestock housing
- Water and septic systems.

Authors of MWPS publications identify new issues, concepts, and technologies, then translate them into practical educational materials used by a variety of individuals, including educators (secondary, collegiate, continuing, and professional education), agricultural producers, agribusiness professionals, homeowners, landowners, conservationists, and municipal planners. MWPS provides the cost-and-time-effective mechanism for publishing and distributing these materials. Access these resources at https://www-mwps.sws.iastate.edu/.

Biennial Thistles of Iowa
By Bob Hartzler, ISU Professor/Extension Weed Scientist, (515) 294-1164, hartzler@iastate.edu

Biennial thistles are commonly found in Iowa's pastures, roadsides, CRP and other untitled areas. Musk (Carduus nutans) and bull (Cirsium vulgare) thistle are exotic species (originate from outside of North America) and are responsible for the majority of problems caused by this group of plants. Tall (Cirsium altissimum), Flodmans (Cirsium flodmani) and field thistle (Cirsium discolor) are native to Iowa and far less prevalent than musk or bull thistle. Although all species in the Carduus and Cirsium genera are classified as noxious weeds by Iowa's Noxious Weed Law, the less common, native thistle species rarely invade managed areas at densities that crowd out desirable plants or interfere with human activities.

Fall treatments are very effective against established rosettes, and can be made after several frosts have occurred. Spring treatments should be made prior to bolting since thistle tolerance increases greatly after bolting has initiated. Grazon P&D and Milestone provide more consistent control of thistles that have bolted than other treatments, but treatment costs increase since higher rates are required. A potential advantage of spring treatments is they can control both second year rosettes and first year seedlings, whereas fall treatments typically only control rosettes that established earlier in the spring.

Caution must be used when applying any herbicide to avoid off-target movement that may damage susceptible vegetation in adjacent areas. All listed herbicides will kill any legumes present in pastures.

Herbicides work best when used in combination with other control strategies. Due to persistent seed banks, biennial thistles are likely to reinfest treated areas. Enhancing the competitiveness of the desirable vegetation and implementing appropriate follow up tactics will provide economical long-term management of the biennial thistles.

For more information, check out these publications from the Extension Online Store on weeds and weed control at https://store.extension.iastate.edu/Topic/Crops/Weeds-and-Weed-Control and this one on small sprayer calibration at https://store.extension.iastate.edu/Product/Small-Sprayer-Calibration.
Questions and Answers Regarding Nitrogen and Water Quality

By Angie Rieck-Hinz, ISU Extension Field Agronomist, 515-532-3453, Cell: 515-231-2830, amrieck@iastate.edu, @nciacrops

Due to increased awareness of nutrient management and water quality, Iowa State University Extension and Outreach has received a number of questions about nitrogen movement from Iowa’s cropping systems into surface and subsurface water. The following frequently asked questions and answers have been prepared to clarify aspects of nitrogen management and nitrogen movement in the soil system.

**Nitrogen Fertilizer**

**Question:** Is there a legal limit to the amount of fertilizer that can be applied?  
**Answer:** For commercial fertilizer, the answer is no. However, from an economic standpoint, farmers choose to balance nutrient applications with a crop yield response. If a farmer over-applies nutrients, then a reduction in yield causes loss of revenue. If the farm operation has livestock or is distributing manure to other acres, and is of a certain size, they are required to apply manure at the rate determined by their state required manure management plan.

**Question:** How do farmers determine how much fertilizer they should apply?  
**Answer:** Nutrients are required to grow Iowa’s major crops, corn and soybeans. Farmers and agronomists use soil testing as a means to determine the nutrient-supplying capacity of the soil for certain nutrients and if additional nutrient inputs such as commercial fertilizer or manure applications are needed. Under-application of nutrients can lead to loss of revenue from loss of crop yield and over-application can also lead to loss of revenue when supplying nutrients beyond what is needed to maximize crop production. Over-application can also lead to increased risk of loss of nutrients to the environment.

Determined nitrogen (N) application rates is based on grain yield response to nitrogen rate trials (varying rates of nitrogen inputs compared to yield response). The goal of conducting nitrogen rate trials is to find the point where the value from grain yield increase by adding more nitrogen matches the cost of the added nitrogen. This concept, known as the maximum return to nitrogen (MRTN) is the foundation of web-based tool used in Iowa, the Corn Nitrogen Rate Calculator (http://extension.agron.iastate.edu/soilfertility/nrate.aspx). Please refer to ISU publication PM 2015, Concepts and Rationale for Regional Nitrogen Rate Guidelines for Corn (https://store.extension.iastate.edu/Product/pm2015), for the science behind nitrogen rate guidelines.

Using soil tests to determine phosphorus (P) and potassium (K) levels in the soil is based on years of soil testing research conducted at Iowa State University. Soil test values are classified into five categories: very low (VL), low (L), optimum (Opt), high (H) and very high (VH). The categories represent a decreasing probability of economic yield response to applied nutrients. Please refer to ISU publication PM 1688, A General Guide for Crop Nutrient and Limestone Recommendations in Iowa (https://store.extension.iastate.edu/Product/pm1688), for P, K, zinc (Zn) and limestone recommendations based on soil testing for major agronomic crops grown in Iowa.

**Springtime Mud Impact and Management**

By Russ Euken ISU Extension beef program specialist and Kris Kohl, ISU Extension ag engineering program specialist

Earth surface feedlots and springtime in Iowa typically don’t go well together. When temperatures start to warm above freezing and ground begins to thaw, any additional moisture can create mud issues. Of course, spring is not the only time mud can be an issue. Any time we have excess moisture from rain and snow, mud can become a problem.

Mud can affect cattle performance and well-being in three ways, all negative as far as performance is concerned. It can affect the insulation provided by the hair coat if the hair becomes matted, mud in a feedlot also can decrease feed intake, and finally, if mud is deep enough that cattle have to increase their effort to move or they can’t lay down to rest, that increased effort also would increase maintenance requirements. This could occur even at higher temperatures than the effect on hair coat insulation.

All of these effects are likely combined when reports of the impact of mud are reported. Several reports show impact of 10 -15% decreased gain and 10 -12% decreased feed efficiency with mud depths of 4 -10 inches.

Read more at http://www.iowabeefcenter.org/growingbeef.html.

**Crop Management Climate Tools**

By Brian Lang, ISU Extension Agronomist, 563-382-2949, bjlang@iastate.edu

4-inch Soil Temperature - Temperatures are posted in the NPKnowledge website at: http://extension.agron.iastate.edu/NPKnowledge/ Currently, soil temperatures are around 49º.