Spring Pasture Weed Control

March is a recommended spring timing to control biennial and perennial pasture weeds such as thistles, poison hemlock and buttercup. Application made at this timing are targeting particular weeds that are in a vegetative basal rosette. Applying herbicides to small actively growing weeds is critical to achieve maximum control and prevent seed production.

Products containing 2,4-D, dicamba, triclopyr, picloram, aminopyralid, or pre-mixed products containing two or more of these products provide good to excellent control of broadleaf weeds in pasture. Use caution: these products are safe at labeled rates on grass species but can kill or severely injure desirable broadleaves in grass-legume pasture mixes. In some cases spot treatment of areas may provide adequate control. Always read label for proper rates, target weeds, and grazing or harvest restrictions.

In addition to herbicide applications, timely mowing can help suppress seed production. Successful mowing for seed suppression must occur prior to pollination. In many cases, a combination of both timely herbicide application and timely mowing will be needed during the growing season to manage weeds and improve pasture health.

An good resource for pasture management is MU IPM Guide 1031 Weed and Brush Control for Forages, Pastures, and Noncropland.

Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Jackson, MO.
Warm weather has rapidly moved wheat through green-up stages (Feekes 4-5) this week and into early jointing (Feekes 6) in some areas. Continue to scout your fields to identify the stage of your wheat. Jointing is the cutoff for many wheat herbicides, so always be sure to read and follow herbicide label directions and visually inspect your field before making an application. Wheat serving as both pasture and cereal grain, grazing livestock should be taken before this point. Jointing wheat will incur damage if temperatures fall to 24 degrees Fahrenheit or lower. A good reference for overall wheat management is IPM Guide Management of Soft Red Winter Wheat.

Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Jackson, MO.

**BRINGING BACK THE AMERICAN SMALL FARM**

Creating Income from Small Acreage - Join us for a conference sharing instruction on how to contribute to your regional food supply using whatever land resources are available to you. Whether that's a backyard garden area or 100 acres, get the information you need to start producing local foods your way.

Learn low-input cost farming with hands-on instruction. Topics include low-tunnel farming for year-round production, no-till organic farming to improve soil and plant health, and livestock grading, butchering and cutting meat. Demonstrations will be provided for how to use small-farming equipment.

**West Plains Civic Center, 110 Saint Louis Street, West Plains, MO**

**Wednesday, March 8 - Thursday, March 9, 2017**

**Seminar Topics** - No-till organic farming; Drip irrigation; High- and low-tunnel farming; Winter food production; Soil Nutrition; Growers' Panel; Livestock (cattle, sheep & goat) grading; Butchering small farm animals and meat cutting

**Register** - [http://AmericanSmallFarm.com](http://AmericanSmallFarm.com)

**Contact**  Patrice Jennings, Ozark Farmers, (417) 293-0590, plj463@yahoo.com
As the sun heats the ground during the day, warm air rises and is replaced by cooler air, which in turn warms and rises. This continual motion keeps air moving near the ground, producing wind. Sometimes, on very clear days, the air can become dangerously still. This happens most often as the sun sets and the ground cools and stops rising, resulting in a stable air mass hanging just above the ground, unmoving.

When growers spray during these conditions, the spray droplets cannot fall to the ground and instead hang, suspended in that air mass, until the inversion ends and wind arrives to move them -- possibly off-target. These conditions can be detected by measuring air temperatures at different heights -- during a temperature inversion, the temperature near the ground will be cooler than the air above it. For two years, University researchers have been measuring temperature 24 hours a day, year round in three different locations in Missouri at three different heights -- every five minutes. The results have been eye-opening.

University of Missouri weed scientist Mandy Bish found, "Across all growing seasons, from March to July, it looks like inversions occur at least half of the evenings at some point. We estimate that in the early part of season, they're mostly setting up between 5 and 6 p.m., and later, in June and July, they're setting up between 6 and 8 p.m."

In the past, scientists have pegged fog, dew or frost as signs of a temperature inversion. However, these are characteristics of morning hours, when temperature inversions are usually breaking up for the day. Based on the new data applicators and growers need to be on alert for clear, windless evenings.

When looking at the data over two years in June and July, evenings when winds fell below 3 miles per hour (mph) predicted the beginning of an inversion 90% of the time. "When the wind dies down on a clear night, that's when it's time to stop spraying," said Bish. Other signs include dust or smoke hanging or moving laterally in the air.

To demonstrate volatility of an herbicide, researchers sprayed bare ground plots with the herbicide dicamba. Thirty minutes after application, they placed potted tomato and pepper plants on plastic film on the sprayed test plot and on an unsprayed plot 40 feet away and downwind of the treated plot. After six hours, they removed the plants and grew them in the greenhouse for nearly two weeks, monitoring the plants for dicamba injury. Within one week, the tomato plant in the untreated plot that was downwind of the dicamba application began showing dicamba injury. By two weeks after application, both the pepper and tomato plants had cupped leaves. Plants in the treated plots had much less injury.

"Herbicide droplets may initially land on target plants and/or soil," Bish says. "Conditions that favor evaporation instead of absorption can allow herbicide to move back into the air." Moisture, temperature, ground cover and wind speed influence movement.

Herbicide formulations matter as well. Low-volatile herbicide formulations are essential in minimizing injury of nontarget plants due to volatility.

Temperature inversions can also affect off-target herbicide movement. Inversions occur when the air temperature near the ground is cooler than at higher altitudes. This causes a stable air mass with little wind. When this occurs, spray particles remain suspended instead of reaching the target surface.
Most temperature inversions occur around sunset to sunrise when the following conditions occur:

- Wind speeds less than 2-3 miles per hour; dew or frost; after reaching their target, spray particles may evaporate before being absorbed; horizontal smoke patterns, which indicate horizontal wind movement; ground fog in low-lying areas and clear evening skies, which indicate a lack of clouds to trap warm air in the atmosphere.

For more information about how a temperature inversion occurs visit [https://www.ag.ndsu.edu/pubs/plantsci/pests/ae1705.pdf](https://www.ag.ndsu.edu/pubs/plantsci/pests/ae1705.pdf)

The following websites will also help applicators:

- DriftWatch, at [mo.driftwatch.org](mo.driftwatch.org), is a communication tool that helps crop producers, beekeepers and pesticide applicators work together to protect specialty crops and apiaries.
- Missouri Mesonet, at [agebb.missouri.edu/weather/stations](agebb.missouri.edu/weather/stations), provides real-time weather data from stations across Missouri.

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**What is an Inversion?**

Tuesday, March 21, from 6 to 8 p.m. Oregon County Courthouse in Alton.
Thursday, March 30, from 6 to 8 p.m. 4-H exhibit building in Doniphan.

Pond workshops help landowners learn to manage fish habitat and populations. The Missouri Department of Conservation (MDC) and University of Missouri Extension will host pond management workshops in Ripley and Oregon counties. Blake Stephens, a MDC fisheries management biologist, said the workshops are designed for anyone who has, or would like to install a pond on their property. “We’ll discuss pond construction considerations, the best ways to manage pond fish and improve your personal fishery,” Stephens said, adding common problems with fish populations such as aquatic plant habitat and water quality are on the workshop agenda. Landowners can expect opportunities to interact and ask questions of local conservation professionals.

Light refreshments will be provided. Space is limited. Registration for Oregon county is requested by March 20 by calling the Oregon County Extension Office at (417)778-7490. Registration for Ripley county is requested by March 29 by calling the Ripley County Extension Office at (573)996-2921. For more information about pond management, go online to [www.mdc.mo.gov](www.mdc.mo.gov).
In addition to fescue foot, toxic tall fescue reduces livestock weight gains and lowers reproductive performance. Come learn about novel endophyte tall fescue and say “Goodbye and Good Riddance” to profit-robbing toxic tall fescue.

- Fescue Toxicosis: Symptoms and Cause
- Economics
- Establishment and First Year Management
- Seed and Endophyte Testing
- Transition from Toxic to Non-Toxic Fescue
- Company Products
- Incentives
- Producer Panel

Advanced registration due by Tuesday, February 28, 2017:
$60.00 individual or $110 couple

Late/Door Registration: $75 individual or $125 couple

Includes: Meal, Refreshments & Proceedings

Enrollment limited

Name______________________________
Address______________________________________________________________
City/Zip______________________________________________________________
Telephone________________________________ e-mail________________________________

Send to: Lawrence Co. Extension Center, Courthouse, P.O. Box 388, Mt. Vernon, MO 65712
Make Checks Payable To: Alliance for Grassland Renewal

For more information: Eldon Cole; ColeE@missouri.edu or (417) 466-3102

http://grasslandrenewal.org/

Alliance Partners and Collaborators
- AgResearch USA
- Agrinostics
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- DLF Int’l Seeds
- Dow AgroSciences
- Forage & Grassland Foundation, Inc.
- Kansas State University
- MFGC/GLCI
- MU CAFNR
- MU Extension
- Noble Foundation
- KY Forage and Grassland Council
- Mountain View Seeds
- Pennington
- USDA-NRCS
- Forage Producers
- Livestock Producers
- University of Kentucky
March 8-9, 2017 Conference
March 10, 2017 Symposium

The Conference will offer many speakers from throughout the U.S. presenting on a wide range of topics.

The Symposium will highlight grape and wine research taking place in Missouri and the surrounding region.

Registration ends Monday, March 6, 2017. All registration is online. Credit cards are accepted. Please click here for the event registration website.

Lodging is at Hampton Inn & Suites directly to book one of the block of rooms reserved until February 8, 2017.
How Does Health Insurance Affect Farmers/Ranchers

Help influence rural health policy by participating in an upcoming USDA funded survey. Your responses will help researchers understand how health-insurance policy affects farmers’ and ranchers’ decisions to invest, expand, and grow their enterprises.

This survey is a chance for farmers and ranchers to make their voices heard about their experiences with health insurance and how that affects both their economic development and family’s quality of life. If you would like to participate go to https://survey.uvm.edu/index.php/132344?lang=en.

“We’re interested in hearing from multi-generation, beginning, and first generation farm and ranch families across all ages and sectors of agriculture. We want to understand what parts of health insurance is working for farmers and ranchers and what types of policy and program modifications need to be made. Results will be shared with agriculture and health policy makers,” said lead researcher, Shoshanah Inwood, rural sociologist and professor at the University of Vermont. All responses will be confidential and only summary statistics will be reported.

“We know from our prior research that farmers identify the cost of health insurance as a key barrier to growing their farms or farming full-time,” said Inwood. This study is a joint effort with the NORC Walsh Center for Rural Health Policy, and the four USDA Rural Development Centers. Findings will be used to guide the development of training materials for professionals who work with farmers and ranchers - such as Extension Educators, farm consultants, and tax accountants - so that they can support farmers’ and ranchers' ability to make well-informed decisions regarding health insurance.

The survey questions are based on interviews conducted in 2016 with smaller groups of farmers and ranchers in the 10 states being researched. This study is a four-year national project exploring how health insurance options impact the farm and ranch population in the U.S. The project, titled “Health Insurance, Rural Economic Development and Agriculture” (HIREDnAG), is funded by a $500,000 USDA Rural Communities and Regional Development grant. States included in the study are California, Kentucky, Massachusetts, Michigan, Mississippi, Nebraska, Pennsylvania, Utah, Vermont, and Washington.

Project partners include Northeastern, North Central, Southern and Western Regional Rural Development Centers; University of Vermont Center for Rural Studies; University of Vermont Extension; Center for Rural Affairs; University of Maryland Extension and Farm Foundation.

For more information, visit the HIREDnAG website: http://www.hirednag.net/ or contact Katlyn Morris, HIREDnAG Project Coordinator at katlyn.morris@uvm.edu or by phone at 802-656-0257.

Xtend Technology System

For those who plant to use Xtend Technology in 2017 it will be critical for applicants to routinely monitor the herbicide websites to stay current on what has changed. Follow the links to find information on Monsanto’s Xtendimax Herbicide w/ VaporGrip and BASF’s Engenia Herbicide. The third product available for this system is DuPont’s FeXapan Herbicide w/ VaporGrip.
Future Meetings & Events -

Livestock Project Meeting. March 6, 2017. Jackson, MO Extension Center; 7:00 pm. 4-H and FFA members and parents will learn basic requirements for raising a livestock project. Please RSVP to 573-243-3581.

2017 Show Me Grape and Wine Conference and Symposium - March 8-9 Conference, March 10 Symposium. The Conference will offer many speakers from throughout the U.S. presenting on a wide range of topics. The Symposium will highlight grape and wine research taking place in Missouri and the surrounding region. Registration ends Monday, March 6, 2017. All registration is online. Credit cards are accepted. Please click here for the event registration website. Lodging is at Hampton Inn & Suites directly to book one of the block of rooms reserved until February 8, 2017.

SEMO Fair Steer Weigh-In - March 11, 2017. Fruitland Livestock Auction; 9:00-11:00 am.

Missouri Pesticide Collection Program - 2 Locations in Southeast Missouri
March 11, 2017- Saturday at MU Fisher Delta Research Center, Portageville, MO. 8:00 to 12:00 p.m.
June 24, 2017 - Saturday at DeWitt Auction Company, 220 DeWitt Drive, Sikeston, MO. 8:00 to 12:00 p.m.

Preventing and Responding to Disease Outbreak Workshop - March 17, 2017.. Held at the Jackson, MO Extension Office from 9:30 am to 3:15 pm. https://www.facebook.com/events/356649244717032/


Farmers Market Workshop
Friday, March 24, 2017, Clinton Center in Sikeston, MO. Beginning at 8:30 am
Saturday, March 25, 2017 - North College Center, MAC in Park Hills, MO. Begins at 8:30 am. Fee $15. Print registration form at http://extension.missouri.edu/butler/documents/farmer's%20Market%20%20flyer%202017.pdf and mail in or call 573-883-3548.

Show-Me-Select Replacement Heifer Sales - Farmington- Friday, April 21, 2017 @ 7:00 pm; Fruitland- Friday, May 5, 2017 @ 7:00 pm

Commodities and markets - http://extension.missouri.edu/scott/crop-budgets.aspx

Contributions to this publication are made by University of Missouri agriculture food and natural resource specialists. If you would like to receive this publication please send an email with request to: denklers@missouri.edu

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