Crops in the sorghum family, including sorghum, sorghum-sudan hybrids, and Johnsongrass, accumulate prussic acid in response to plant stress. Plant stress can be from drought, grazing, or frost. With the possibility of frost nearing, the chances of prussic acid poisoning increase.

When sorghum plants are injured or under stress, enzymes that convert glycosides to sugar and prussic acid are released. Levels of cyanide greater than 2 milligrams per kilogram (2 ppm) of dry plant tissue are considered potentially dangerous. Prussic acid is readily absorbed into the bloodstream and causes toxicity by blocking normal cellular respiration in the animal.

The environmental conditions that favor toxic levels of prussic acid are drought stress and frost damage. If under drought stress, avoid grazing until the plants have recovered and exhibit at least 24 inches of regrowth. Following a severe frost, avoid grazing for 14 days or until the leaves turn brown, whichever is longer.

In addition, prussic acid levels are highest in young, leafy tissue, whether it is initial growth after planting or regrowth after clipping. Since it is the young, fast-growing tissue that contains dangerous levels of prussic acid, avoid grazing until the plant reaches a height of at least 24 inches to allow prussic acid to dissipate. Unlike nitrates, which are persistent, prussic acid disappears during the hay curing or ensiling process.

Sarah Kenyon, Agronomy Specialist, Houston, MO
The number one target weed for fall herbicides should be horseweed, also known as marestail, with all the other winter weeds controlled considered a bonus. This past spring’s wet and cold weather played havoc on burndown products providing complete control in a timely manner, especially of marestail. The photo is an example of some the spring burndown failures.

Products containing 2,4-D or dicamba provide good control of emerged marestail in the seedling to rosette stage prior to spring bolting. These products provide more consistent control in the fall vs. spring. Scout fields for newly emerged marestail following this fall’s harvest. Although Marestail is considered a winter annual it continues to emerge well into spring, therefore the use of residual products is recommended as part of a base 2,4-D or dicamba program, especially in problem fields. However, the use of residual products does not guarantee that you will be free of weeds such as marestail at planting, so always scout in the spring ahead of planting.

Keep in mind that fall herbicide programs will not deliver control of summer annual weeds such as waterhemp and Palmer amaranth. These weeds should be managed with residuals close to planting in order to extend the residual control into early crop emergence.

There have been two articles recently written on fall herbicide programs in the MidAmerica Farmer Grower by Dr. Kevin Bradley, University of Missouri and Dr. Aaron Hager, University of Illinois. Dr. Bradley’s article looked at several aspects of fall herbicides including soil conditions such as spring soil temperatures, soil moisture, and soil nutrients available in the spring and pest interactions. Both articles addressed weed control, in particular fall herbicide programs that target horseweed.

More information on residual herbicides can be found in the Pest Management Guide, M171 at the following website: [http://extension.missouri.edu/p/M171](http://extension.missouri.edu/p/M171). Dr. Bradley’s and Dr. Hager’s articles can be found on the MAFG website: [http://www.mafg.net/2013-Archives/](http://www.mafg.net/2013-Archives/). Dr. Bradley’s article is in the September 27 issue titled, “Considering Fall Herbicide Applications: It’s Not Just About the Weeds” and Dr. Hager’s article is in the October 11 issue titled, “Fall Herbicides To Control Marestail (Horseweed).”

Anthony Ohmes, Agronomy Specialist, University of Missouri, Cape Girardeau, MO.
**Winter Wheat Workshop**

**Thursday, November 7, 2013**

The workshop will begin at 9:00 a.m. at the University of Missouri Extension Center in Jackson, MO, on the lower level. The Extension Center is located at 684 West Jackson Trail just south of Jackson, MO on Highway 25. The workshop will cover wheat management after emergence including wheat weed resistance and management, fertility management, insect and disease management, and marketing. The workshop will conclude with a wheat field visit at 11 a.m., weather permitting. Contact Anthony Ohmes via email (ohmesg@missouri.edu) or phone (573-243-3581).

**Annual Certified Crop Advisor Meeting**

**Monday, November 25 and Tuesday, November 26, 2013**

A two-day CCA meeting will be conducted at the University of Missouri Fisher Delta Research Center in Portageville, MO the Monday and Tuesday before Thanksgiving. This meeting provides research based information to Crop Advisors seeking Continuing Education Units. A total of 16 CEU’s can be obtained in the areas of IPM, Nutrient Management, Crop Production, and Soil and Water by attending both days. Participants can also choose to attend only the categories they need CEU hours. Contact David Dunn (dunnd@missouri.edu) or phone (573-379-5431) for more information. More information will be sent out closer to meeting date.

**Watermelon Meeting**

**American Legion in Kennett, MO**

**Wednesday, December 4, 2013**

Lunch is provided through our sponsors. For more information or to let us know you will attend call: 573-686-8064
Fall Weed Management

Weeds that form a rosette typically germinate in the fall or early spring. Plants that form a rosette include: Thistles, dandelion, Queen Anne’s lace, chicory, spotted knapweed, red sorrel, poison hemlock, and others. Because of their low, spreading growth, these weeds can smother the grass and create open spaces in the pasture. In addition to decreasing forage quality, weeds like Queen Anne’s lace, chicory, and dock can gum up fescue seed combining equipment and create more trash in the gleaned seed.

Fall and early spring is one of the best times of the year to control rosette-forming weeds and other winter annual weeds. Make sure spraying occurs on days where the high temperature is a minimum of 60 degrees F, there is no hard freezing at night, and plenty of sunshine.

The most common thistles that occur in southern Missouri are muck, bull, and tall thistles. Control is best achieved when sprayed in the rosette stage, from October through April. Use products that contain 2,4-D, have dicamba as the active ingredient, Grazon P+D, Chaparral, GrazonNext HL, or Tordon 22K. If mowing, the best time is to mow within two days after the terminal flower head blooms, then repeat 3-4 weeks later. For musk thistle, do not spray during flowering; the musk thistle flower head weevil will provide the best control at that time. Thistle weevils are a help in the control process and cannot be relied on for full control.

Poison hemlock is poisonous to both humans and livestock. It can also be mistaken for Queen Anne’s lace. Poison hemlock has purple/red spots on the stem and has an odor. Both weeds remain green throughout the winter, and can quickly overtake a pasture. Use Grazon P+D products, Tordon 22K, or Remedy Ultra before the plants bolt in the spring. Best control is achieved during the rosette stage in the fall or spring.

Spotted knapweed can also be controlled with fall spraying. This weed has been rapidly taking over many pastures and hayfields in southern Missouri. This is because the roots excrete a toxin that kills neighboring plants. Use Milestone, Grazon P+D, Chaparral, or Tordon 22K when in the rosette or early bud stage. Control is more effective when the plant is sprayed before it reaches a foot tall. Spotted knapweed weevils can also be released and are anticipated to provide control within a few years.

Other weeds to consider for fall spraying are henbit and chickweed. These plants germinate in the fall, grow through the winter, and produce seed in the spring. They are most common in dormant warm-season grass pastures or in new seedings, but can also be problematic in established pastures or yards. Banvil or clarity (active ingredient dicamba) mixed with 2,4-D, or Grazon P+D can be used in grass pastures. Round-up or Gramoxone can be used on warm-season grasses, like bermudagrass, after the crop is in winter dormancy.

Make sure to read the herbicide label carefully before applying, because many herbicides can damage newly germinated grass seedlings. New seedlings need to have a sufficient root system before herbicides can be applied.

Sarah Kenyon, Agronomy Specialist, Houston, MO.
Soybean Drying

Soybean field drying is slow this season and some questions about bin drying have come up. In-bin drying with natural air by running fans is usually enough to drop moisture 2 to 3 points when air temperature is 60 degrees F or above and relative humidity is below 75%. Beans above 16% moisture should have fans running continuously and may need supplemental heat but one must be careful since soybeans are more fragile than grain crops such as corn. Air temperature increases of 5 to 15 degrees F is generally sufficient. Relative humidity should always be maintained about 40% to protect the seed coat and relative humidity is cut in half for each 20 degrees that the air is warmed. University of Kentucky provides some good detailed information on the subject of harvesting and drying soybeans at the link provided below. The second link is an equilibrium moisture chart for corn, soybeans and wheat.

For more information go to: http://www2.ca.uky.edu/agc/pubs/agr/agr132/agr132.htm
http://www.uky.edu/Ag/GrainCrops/Briefs/EMC_CornSoybeanWheat.pdf

Anthony Ohmes, Agronomy Specialist,
University of Missouri, Cape Girardeau, MO.
It costs less than $500 to make it safer to enter farm grain bins, says a University of Missouri Extension rural safety and health specialist.

“You can’t afford not to follow safe procedures,” says Karen Funkenbusch as the harvest season approaches. While $500 may sound like a lot, the savings are priceless, she says.

Entering grain bins is dangerous, and farm safety experts say grain producers should develop a “zero entry” mentality. “Stay out of the bin,” Funkenbusch says. “But if you must enter, do not go alone. Grain entrapment is one of the least understood hazards in today’s family farm operations.”

There are simple, inexpensive safety techniques that can help avoid grain bin fatalities.

First, turn off and disconnect or lock out all power equipment such as augers.

“With today’s high-capacity loading and unloading systems, people are helpless in flowing grain within seconds,” she said. The cost for a lockout kit to prevent this is about $100. The savings are priceless.

“Entrapment by flowing grain can be prevented by restricting access to the grain. Use locks on bin doors and hatches to present unauthorized access,” she added. And adults should enforce a policy of not allowing riding or playing in grain wagons or other transport vehicles.

Second, use a body harness with an anchored lifeline when entering from a level at or above stored grain. The harness costs and $250 and 100 feet of rope costs about $100. Savings are priceless.

“Research shows that rescuing someone from grain is not easy,” Funkenbusch says. “The force ranges from 325 pounds for an average 165-pound person buried in hip-deep grain, to more than 1,500 pounds to rescue the same person who’s 3 feet under the grain surface!”

Running fans to aerate grain before entering will help improve ventilation, at small cost per kilowatt-hour. “Never walk on or down the grain to make it flow,” she said. Grain may become crusted on top and might look stable, but the “bridge” might be formed over a large air pocket that will serve as a deadly tunnel in which a person can be sucked into and suffocated within seconds. It costs only seconds to think about safety. The cost for a few extra kilowatts is small; the savings are priceless.

“Have a trained observer outside the bin,” she said. This person can act as a contact with the person inside the bin and can call for help if needed. The cost, depending on the hourly wage, probably is less than $10. Again, the savings are priceless.

“Confirm that all safety precautions are in place,” she said. “Always avoid entering a grain storage bin if at all possible, but if you must, follow safe procedures. You can’t afford not to,” Funkenbusch said.

What if there is an accident? Funkenbusch recommends the following:

- Shut off all unloading equipment.
- Call 911.
- Stop anyone from entering the scene until trained emergency personnel arrive.
- If the bin has an aeration blower, turn it on to increase the airflow through the bin to help the entrapped person breathe.
- Assemble equipment such as front-end loaders, shovels, plywood for cofferdams and portable augers for assistance with a rescue.

If you should become trapped in a grain bin or silo, stay near the outer wall and keep moving. If necessary, you can walk until the bin is empty or the flow stops.

For more information review MU Extension guide “Safe Storage and Handling of Grain” available at extension.missouri.edu/p/G1969.

Karen Funkenbusch, Ag Engineering Research Assistant, University of Missouri, Columbia, MO.
Ag Expo 2014

Friday and Saturday, January 24 and 25, 2014

- Private Applicator Training
- Kids Tractor Pull
- Portable USDA Certified Kitchen
- Petting Zoo
- Kids Garden Adventure
- Child Safety Scavenger Hunt
- Cow Milking Demonstrations
- Educational Sessions

Exhibit Space is Available
For more information call: 573-686-8064

US Rice Outlook Conference

Wednesday to Friday, December 4-6, 2013
Hyatt Regency in St. Louis, MO

- Bring together rice farmers and industry leaders from all six rice-producing states.
- Provides timely information and educational sessions on topics vital to rice farmers
- Features a trade show devoted to rice-related farm equipment, technology, products and services.

To register: Phone - 703-236-1447 or Email - jdavis@usarice.com or Online - www.usarice.com. Early registration ends November 8.
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Future Meetings & Events -

Winter Wheat Workshop – Thursday, November 7, 2013. University of Missouri Extension Center in Jackson, MO. The workshop will begin at 9 a.m. in the lower level at 684 West Jackson Trail just south of Jackson, MO on Highway 25. Contact Anthony Ohmes via email (ohmesg@missouri.edu) or phone (573-243-3581).

Annual Certified Crop Advisor Meeting – Monday, November 25 and Tuesday, November 26, 2013. A CCA meeting conducted at the University of Missouri Fisher Delta Research Center in Portageville, MO. Contact David Dunn (dunnd@missouri.edu) or phone (573-379-5431) for more information.

Regional Corn Meeting – Wednesday, December 11, 2013. The Miner Convention Center in Miner, MO beginning at 8 a.m.. For more information contact Anthony Ohmes at 573-243-3581 or (ohmesg@missouri.edu) or David Reinbott (reinbottd@missouri.edu) or 573-545-3516.

Watermelon Meeting: Wednesday, December 4, 2013. American Legion in Kennett, MO beginning at 8:30 a.m. Contact Sarah Denkler or Chris Waite to register 573-686-8064.

Ag Expo: Friday and Saturday, January 24 and 25, 2014 at the Black River Coliseum in Poplar Bluff, MO. Admission is free.

Commodities and markets - http://extension.missouri.edu/seregion/fmmkt.htm