Concern over Ornamental Grass in Fields

Sericea lespedeza, johnsongrass, multiflora rose, kudzu, perilla mint and spotted knapweed are some examples of plants introduced to Missouri, either intentionally as an agriculture forage, erosion control, or ornamental or unintentionally through contamination, that have become troublesome weeds to forage and row crop producers. Another example of an ornamental that has made its way into pastures is fountain grass (*Pennisetum spp.*) pictured.

I was asked to look this fall at a grass that was established in some pastures. This particular fountain grass was found at varying densities in a concentrated area of pastures in southeast Missouri. Fountain grass is a warm season perennial bunch grass grown as an ornamental in landscapes. Stems are flat and grow in dense clumps. Sheath margin has white hairs. Leaves are bright green which can deepen to purplish or reddish in color with cooler temperatures and maturity. Fountain grass identifying feature is its purplish, bottlebrush seed head (panicle). It reproduces by seed and germinates in late spring. The seeds are viable, according to USDA guide, for up to 7 years. Seeds have bristles that can attach to animal fur or clothing. Seeds can also be distributed by wind, water and equipment. It appears, in the situation I looked at, seed was inadvertently spread by mowing equipment.

Management of plants such as fountain grass has to be proactive and focus on controlling plants prior to seed production. Management would include physical, cultural and chemical control practices. Such as removing plants, mowing plants prior to viable seed production can reduce the number of seed heads but will not stop seed production completely, promoting landscaping alternatives, maintaining thick competitive pastures to limit infestation of fountain grass, spot spraying with glyphosate and selective grass herbicides. The USDA has a field guide to managing fountain grass: [http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5410113.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5410113.pdf).

David Reintbott, Ag Business Specialists, University of Missouri Extension, Benton, MO
Insights on Produce Safety Water Requirements

There has been a lot of talk about the water requirements that are part of the Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR). As January 26, 2018 approaches it is important to understand what is covered under those requirements.

Understand When Water Qualifies as Agricultural Water

The water quality requirements in the FSMA PSR only apply to farms covered by the rule that are using water that directly contacts the edible portion of the crop during growing activities, or during and after harvest activities. The language directly from the PSR requires that “all agricultural water must be safe and of adequate sanitary quality for its intended use” (§ 112.41). Agricultural water is defined in part as “water (that is) intended to, or is likely to, contact covered produce or food contact surfaces” and covered produce is defined in part as “the harvestable or harvested part of the crop” (§ 112.3(c)). It is important to note that food-contact surfaces are also included in this definition, so agricultural water quality requirements will have to be met when establishing cleaning and sanitation programs as well.

Microbial Quality Requirements For Agricultural Water Used During Growing Activities, or During and After Harvest

Different water quality criteria are established for water used during growing activities and for water used during and after harvest. Both are based on testing water for generic Escherichia coli, which is an indicator of fecal contamination. Below are the requirements. Please note, water used during growing activities can have a limited amount of E. coli present in the water, whereas water used during or after harvest must have no detectable generic E.coli present in the 100 mL water sample.

- The requirement for agricultural water used during growing activities is a microbial water quality profile, based on a rolling 4-year sample data set, that has a geometric mean of 126 or less CFU/100 mL generic E. coli and a statistical threshold value of 410 or less CFU/100 mL generic E. coli.

- The requirement for agricultural water used during and after harvest is no detectable generic E. coli in 100 mL of water.

The PSR only covers microbiological hazards, so the water requirements only include microbiological testing. Controlling fecal contamination is one key to minimizing produce safety issues, and the test for generic E. coli indicates fecal contamination without the cost of testing for all microbial human pathogens. Again, it is important to be clear about the term agricultural water so here is the exact definition from the PSR.

“Agricultural water means water used in activities on produce where water is intended to, or is likely to, contact produce or food contact surfaces, including water used in growing activities (including irrigation water applied using direct water application methods, water used for preparing crop sprays, and water used for growing sprouts) and in harvesting, packing, and holding activities (including water used for washing or cooling harvested produce and water used for preventing dehydration of covered produce).”

It is important to remember (as mentioned above) that “all agricultural water must be safe and of adequate sanitary quality for its intended use” (§ 112.41) so you may have to pay attention to other water quality issues in addition to the presence of E. coli if other risks are identified.

Don Stoeckel, Ph.D., Gretchen Wall, M.S. and Betsy Bihn, Ph.D. of the Produce Safety Alliance
EPA Registers Dicamba Formulation for Use

Dicamba Formulation for Use on Dicamba Tolerant Crops

EPA is registering a dicamba formulation, Xtendimax™ with Vapor Grip™ Technology, which is specifically designed to have lower volatility, to control weeds in cotton and soybean crops genetically engineered to tolerate dicamba.

This registration is for a formulation of dicamba that contains an additive that reduces volatility. This formulation is different from the products that are alleged to have been recently used illegally. EPA continues to investigate these issues in several locations in the Midwest. [link to the node if possible]

The label requires very specific and rigorous drift mitigation measures. Restrictions on the use of the product to further reduce the potential for exposure from spray drift include: no application from aircraft; no application when wind speed is over 15 mph; application only with approved nozzles at specified pressures; and buffer zones to protect sensitive areas when the wind is blowing toward them.

Weeds that are becoming increasingly resistant to glyphosate-based herbicides cause problems for farmers. This registration will provide an additional tool to reduce the spread of glyphosate resistant weeds. This final decision is designed to ensure that weed resistance is successfully managed, including reporting by the registrant to EPA of any suspected resistance, as well as remediation and grower education.

EPA is placing time limits on the registration to allow the Agency to either let it expire or to easily make the necessary changes in the registration if there are problems with resistant weeds or pesticide drift. Nevertheless, herbicide resistance is adequately addressed by the terms of the registration, and the Agency does not expect off-site incidents to occur.

This dicamba formula for use on dicamba-tolerant soybean and cotton has been registered for sale and use in Alabama, Arizona, Arkansas, Colorado, Delaware, Florida, Georgia, Illinois, Iowa, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, and Wisconsin.

EPA proposed this decision on March 31, 2016. EPA’s final regulatory decision and supporting documents, including a response to public comments, are available in docket number EPA-HQ-OPP-2016-0187 at www.regulations.gov.
Once the horse is groomed make preparations and double check before mounting.

**Haltering:** Be sure to use a halter that fits the horse properly. The headpiece or crown piece should lie flat behind the ears, and the throat latch should lie flat at the swell of the cheek with no big gaps when horse is viewed from the front. The jaw piece should show approximately two finger widths below the cheek bone with approximately three finger widths below the gullet so the horse can move its jaws comfortably. It is recommended not to pasture horses with halters; if it is necessary, though, use a leather halter instead of a nylon one. Leather halters are easier to break if the horse should happen to become hung on something. To halter the horse, approach the horse at the left shoulder, while talking calmly to the horse. It is recommended to lead from the left side while walking shoulder to shoulder; however, handling the horse from both sides also helps prevent you and the horse from becoming “one-sided.” Never wrap the bight (excess) shank around your hand to prevent getting trapped and potentially dragged; instead wrap the bight in a figure eight and hold this in your hand. When turning your horse while leading you should turn the horse away from you (to the right) to avoid being accidentally stepped on.

**Saddling:** Before saddling your horse make sure he is haltered and secured using a quick-release knot in a safe place free of objects on the ground to prevent tripping. Ensure the saddle is a good fit for the horse so as not to put undue pressure on the withers or restrict the movement of the shoulders. Check the blanket for foreign objects or dirt buildup, and be sure that the blanket is dry. Place the blanket well forward over the withers and pull it slowly and gently toward the rear to lay the hair down. Never pull the blanket forward. Make sure there are no wrinkles in blanket or saddle pad. If using a western saddle, hook the right stirrup over the saddle horn and lay the cinch over the seat of the saddle prior to placing the saddle on the horse’s back. Pick up the saddle as high as possible and place it a bit too far forward of where it should lie, then ease it gently back onto the blanket or pad and settle it into its place. The saddle should be placed so at least an inch of the blanket lies in front of it. You should tent the saddle blanket or pad under
the gullet or pommel so that, when tightened, the saddle doesn’t cause excess pressure over this area. Walk carefully behind the horse to be sure the saddle is centered over the back of the horse. Move to the far-(right) side of the horse and let the cinches and stirrup down if using a western saddle. If this is done from the near side, the cinch and stirrup can hit the side of the horse and startle him or bruise his sides. If using an English saddle attach the girth on the far side. Move back to the near side and reach under horse with your left hand to catch the front cinch or girth. Pull the cinch or girth up firmly until it is just tight enough to prevent slipping. If a back cinch is present, tighten it leaving a hand’s width between the cinch and the belly. The back cinch should be tight enough to prevent a foot from being caught but not tight enough that the belly will touch the cinch when the horse breathes. After a few minutes tighten the front cinch or girth another 1-2 holes and secure the strap through the keeper.

**Bridling:** Before bridling your horse, again ensure the bridle is a good fit for the horse and is appropriate for the work to be done. Undo the quick-release knot in the lead shank. Drop the noseband of the halter off the nose and refasten the headpiece around the horse’s neck. While standing beside the horse to the left side and facing the front of the horse, spread the crown of the bridle using your right hand and grasp the bit in your left, then move your right hand with crownpiece slowly up right side of the horse’s head. The bit should be pushed lightly against teeth. Using your left hand insert your thumb behind the incisors at the bars of horse’s mouth. The bars are an area of the horse’s jaw in which there are no teeth. The bit should slip into the horse’s mouth. With your right hand continue to move upward toward the ears while holding the crownpiece. Move the horse’s ears forward and slip the crownpiece over them. Fasten the throatlatch leaving a three- to four-finger-width gap. The bit should be high enough in the mouth to create one small wrinkle at corners of the horse’s mouth. Unbuckle the halter. Never lead a horse with the reins still over his neck, but rather hold both reins together as a lead shank.

For further reading see MU publication G2862, *Practical Horse Psychology*; G2878, *Safe Ground handling of Horses*.

*Heather Conrow, Livestock Specialist, University of Missouri Extension, Fulton, MO.*
Prussic acid (hydrocyanic acid) is produced in certain forage species that contain cyanogenic glucoside compounds. These species include the sorghum family of grasses: Johnson grass, shattercane, milo, sorghum-sudan, and sudan grass. When plant cell walls are ruptured by mowing, chewing, or frost these compounds are released and quickly convert to prussic acid. The compounds are at their highest concentration in new growth less than 18 inches tall. This is why livestock should not be turned in to graze sorghum fields after sufficient growth of greater than 18 inches has occurred (any time of year). Cyanide is a gas which dissipates during the hay drying or silage ensiling processes.

Prussic acid interferes with oxygen transfer in the blood stream which causes death by asphyxiation. Ruminants are more susceptible to prussic acid poisoning than horses or swine because cud chewing and rumen bacteria help release cyanide from plant tissue.

Frost/freezing rapidly ruptures plant cell walls releasing cyanide gas and increasing the risk of prussic acid poisoning in plants of any age or size. High levels of prussic acid can accumulate hours after a ‘burning’ frost or ‘killing’ frost, therefore, remove livestock from sorghum fields if there is a risk of either type of frost.

- In the event of a ‘killing’ frost, the cyanide gas will remain in the plant for 5 to 7 days as it dries down. Do not graze until plants dry down.
- In the event of a ‘burning’ frost, the concentration in combination with green tissue increases the risk, therefore, avoid grazing for 14 days. If new growth occurs at the base of the plant during this time, wait for a killing frost plus 7 to 10 days for dry down. In the event we do not receive a killing frost then new growth must reach sufficient height as mentioned above before grazing.
- Supplement with feed in order to avoid turning hungry livestock into a field to graze young growth of species with prussic acid potential.
- Wait 5 to 7 days after a frost before chopping silage. Delay feeding silage for 8 weeks after ensiling sorghum species. If forage contained high levels at chopping, consider analyzing silage before feeding.

Other species of plants known to produces prussic acid include black cherry, elderberry and indian grass.

One to two days after a hard frost, legumes have an increased risk of causing bloat, especially when grazing pure legume stands. Wait until the legume begins to dry from frost damage.

Anthony Ohmes, Agronomy Specialist, University of Missouri Extension, Jackson, MO
Veterinary Feed Directive for Livestock Antibiotics

Dec. 7th, 2016—6:00 p.m.

Changes and New Regulations will be reviewed by:
Craig Payne: MU Extension Veterinarian
Class will be held in Poplar Bluff, MO
YOU MUST PRE REGISTER FOR THIS CLASS
BY NOV. 30TH BY CALLING 573-224-5600 EXT 8

To register or for additional information contact Joel Tatum-Livestock Specialist at 573-224-5600 ext. 8 or tatumjo@missouri.edu

CLASS IS CONTINGENT ON A MINIMUM OF REGISTERED ATTENDEES

EQUAL OPPORTUNITY/ADA INSTITUTION
Future Meetings & Events -

Winter Education Series - scheduled at 7:00 p.m. in the lower level meeting room of the Cape Girardeau County Extension office over next 4 months. Registration is $20/person to attend all four meetings or $10/person per meeting if choosing a particular topic. We have out of town guest speakers coming in November and December, so we ask that you please call to register so that we can plan accordingly. Please direct questions to Anthony Ohmes or Erin Larimore, (573) 243-3581.

  Workshop 3: Livestock risk protection insurance and weed management in pastures on December 6th
  Workshop 4: Weed management in row crops and grain market outlook on January 10th

Certified Crop Advisor meeting - A two-day Certified Crop Adviser program will be conducted at the University of Missouri Fisher Delta Research Center in Portageville, Missouri on November 21 and 22, 2016. Separate sessions in Pest Management and Crop Production will be offered on Monday, November 21st. Separate sessions in Soil Fertility and Soil and Water will be offered on Tuesday, November 22nd. Each session will offer 4 CEU's. Classes will begin at 8:00 a.m. each day. Registration will be $50 per session or $180 for all four which will include lunch. For more details or specific needs, contact David Dunn (573-379-5431, dunnd@missouri.edu) or Anthony Ohmes (573-243-3581, ohmesg@missouri.edu).

Watermelon meeting - Please join us on Wednesday, November 30 at 8:30 a.m. for the annual watermelon meeting at a new location in the VFW hall in Kennett, MO. Lunch will be provided. Please email denklers@missouri.edu or call the extension center at 573-686-8064 if you plan to attend.

Regional Corn meeting is scheduled for December 7th at the Miner Convention Center in Sikeston, MO. Please direct questions to David Reinbott (ReinbottD@missouri.edu) or Anthony Ohmes.

Regional Soybean meeting is scheduled for January 18th at the Miner Convention Center in Sikeston, MO. Please direct questions to David Reinbott (ReinbottD@missouri.edu) or Anthony Ohmes.

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