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Headline: Troublesome Pasture Plant of the Week – Johnsongrass



Hermitage, MO - This time of year we receive a lot of calls about Johnsongrass. Is it bad for my cows? Will it kill my cows? Is it true that it can cause cattle to abort? The answer to these questions is yes, however, Johnsongrass is also an excellent summer pasture plant under certain conditions. **MANAGEMENT IS THE KEY TO SUCCESS WHEN DEALING WITH JOHNSONGRASS.**

Johnsongrass (*Sorghum halepense*) is a troublesome perennial grass weed that reduces yields in corn, grain sorghum, soybean, cotton, and leguminous forages. Originally introduced into the United States as a forage crop, it is now an agricultural pest in most states south of the 42nd parallel. Dense Johnsongrass infestations severely limited corn production until the relatively recent introduction of Accent and Beacon herbicides. Several states have legislation requiring eradication or control programs. Johnsongrass is listed as a noxious weed by the Missouri Department of Agriculture, which requires that landowners take steps toward controlling and eradicating the weed on all property owned or under their control.

“Johnsongrass” weed or forage, that is the question. This invasive introduced warm season perennial bunch-grass is often found in crop fields, pastures, abandoned fields, wetlands, rights-of-ways, and forest edges. It thrives in open, disturbed, rich, bottom ground, particularly in cultivated fields, as well as along river bottoms, and floodplains. Really, it can be found almost anywhere plants will grow.

Johnsongrass has been used successfully by producers as a forage, when properly managed, as well as a form of soil erosion control. However, when Johnsongrass is stressed, whether by drought or frost damage, the plant produces hydrocyanic acid (a derivative of cyanide), which is also known as prussic acid. This compound can be very toxic and even lethal to cattle as it

interferes with the oxygen carrying capacity of red blood cells causing suffocation. Also, as with most sorghum/sudangrass plants, we must also be aware of nitrate poisoning as the plant may accumulate too much nitrogen in its early growth stages when fields are fertilized. It is best to graze it when it is at least 24 to 36 inches in height. When in doubt, always test your forage before allowing livestock in to graze it. If you bale Johnsongrass, prussic acid will go away but nitrate concentrations will not. If it is put up as silage and allowed to age a bit, around 50% of the nitrate toxicity will be removed.

Johnsongrass that is resistant to the common herbicide glyphosate has been found in Argentina and the United States. It is considered to be one of the ten worst weeds in the world. In the United States, Johnsongrass is listed as either a noxious or quarantined weed in more than 19 states. However, many livestock producers in Missouri really like it on their farms as a warm season forage, especially during drought years. It was considered a nutritious, palatable, and a productive forage. The average crude protein content of properly harvested and/or grazed Johnsongrass is around 11.6% with a TDN rating of 58%. Few wildlife species use Johnsongrass, and as with most warm season grassland plants, it does not stockpile well.

This plant can commonly reach heights of 6 to 8 feet. The leaf structure may grow to lengths of 1 ½ to 2 feet and over 1 to 2 inches in width showing a prominent white midvein as it alternates on a stout upright stem. The blade is flat, hairless to sparsely hairy, especially near the ligules. Leaves are rolled in the bud. The leaf collar, where the leaf sheath and leaf blade meet, can serve as a useful identification tool as well. Pulling the collar back and detaching it from the stem will reveal the presence of a toothed membrane called the ligule. With age, some ligules may develop a fringe of hairs in the upper portion. There are no auricles. The seed head, flower if you will, blooms from May through October. The purplish colored seed heads are arranged in loose structures, 6 to 12 inches tall with small seeds, occurring in sets of three, containing a small awn. This plant is extremely prolific as it spreads by both seed and rhizome. A single plant can produce up to 80,000 seeds per year which can remain viable in the soil for many years to come. The rhizomes, which branch out from a fibrous root system, may travel as much as 250 feet underground, in any direction, before surfacing as a new plant. The rhizomes are white to brown in color and may contain purple spots on them. The nodes are usually covered by brown scaly sheaths. Johnsongrass will out compete most plant species, shading them out, and if left alone for any length of time may take over the entire field.

Control of this plant is difficult if it is allowed to take control of a field. Treatment of plants with glyphosate (Roundup) when they are in seedling stage will allow for translocation to the root system. Using a weed wiper at this point in time, as a spot treatment, may be your cheapest control method available. Mixing a solution of 50% Round-up and 50% water with a good surfactant will usually do the trick in the weed wiper. When treated with a chemical that terminates the plant, you should allow at least 14 to 21 days for the plant to die before turning your cattle out on it. This will allow for the necessary time to avoid stress related issues. Tillage or disking, is not recommended as it will most likely make the problem worst by distributing more rhizomes. Pulling up the plants is possible, but making sure that all the roots are removed is very important. Mowing or intensive grazing practices, to prevent seed head production will help keep the plant at bay as well. Grazing or repetitive mowing, keeping the plant very short, will stress the root system/rhizomes and will eventually eliminate the plant from your pastures. The objective here is to keep the plants shorter than 8 inches in height depleting the carbohydrates in the rootstock, thus weakening the plants to the point of death. Selective herbicides for control in pastures and hayfields may include Outrider (sulfosulfuron), which is an acetolactate synthase (ALS)-inhibiting herbicide which should be applied at 0.75 to 2 ounces/acre in bermudagrass and bahiagrass for Johnsongrass control. Pastora (nicosulfuron + metsulfuron)

may also be used at 1.25 ounces/acre with Impose (imazapic) at 4 ounces/acre as a control of Johnsongrass in bermudagrass pastures, however it is more injurious than Outrider. All three of these choices will affect cool season grasses so be sure to follow the label as to application. These herbicides should be applied with a nonionic surfactant. This may be accomplished by applying 1 -2 quarts per 100 gallons of water in the spray solution. Applications three weeks after a mowing or prior to plants reaching the seedhead stage can be critical to optimize control. There are no grazing restrictions for Pastora or Outrider. Growers should delay harvesting hay for two to three weeks after treatments to provide these herbicides sufficient time for movement in the Johnsongrass root system, thus maximizing control. Pre-emergent applications of Prowl H2O prior to green-up will help prevent any new seed germination in the fields. The objective here is to keep the plants shorter than 8 inches in height depleting the carbohydrates in the rootstock thus weakening the plants to the point of death. There is definitely plenty of Johnsongrass out there right now, and it's up the individual producer to decide if it is a wanted or hated plant in their operation.

For more information on pasture plant identification, please contact your local MU Extension Agronomy Field Specialist.