UF UNIVERSITY of FLORIDA
IFAS Extension

SS-AGR-363

Identification and Control of Johnsongrass, Vaseygrass, and Guinea Grass in Pastures[1]

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Johnsongrass is a common perennial grass that grows throughout the South and Midwest. It is so common and well known as a troublesome weed that any large undesirable grass is often called johnsongrass. This is problematic because it is one of three perennial grasses found in pastures. Vaseygrass and guinea grass are often misidentified as johnsongrass but they have very different herbicide recommendations. Calling a plant johnsongrass when it is really vaseygrass or guinea grass can result in the wrong recommendation and lead to an expensive herbicide failure.

Identification: Johnsongrass, Vaseygrass, Guinea Grass

All three grasses have a prominent white midrib that extends the length of the leaf. But few similarities exist beyond this characteristic.

Growth Habit

All three grasses are perennial, but only johnsongrass has a creeping rhizome system and grows in patches rather than in individual bunches. Vaseygrass and guinea grass are both bunch-type grasses without a significant rhizome system. Additionally, vaseygrass is most commonly found in wet fields or along drainage ditches. Johnsongrass and guinea grass prefer dryer sites.

Seedhead

Johnsongrass and guinea grass have an open panicle seedhead that is angular. Color and size are the key differences between johnsongrass and guinea grass seedheads. Johnsongrass seeds are much larger and have a red/black mottled color, while the guinea grass seeds are smaller and somewhat green. Vaseygrass has a very different seedhead with alternating spikelets forming silky hairs around the seeds. Seeds are produced along the entire length of the seedhead branch, which does not occur in johnsongrass or guinea grass seedheads.

Figure 1. From left to right, guinea grass seedhead (Credits: Hunter Smith); johnsongrass seedhead (Credits: Brent Sellers); vaseygrass seedhead (Credits: Brent Sellers).

1. This document is SS-AGR-363, one of a series of the Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date August 2012. Visit the EDIS website at http://edis.ifas.ufl.edu.

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Seeds

Guinea grass has small, oval, light green seeds, which often have wrinkles. Vaseygrass seeds have similar characteristics but are flatter, with the presence of hairs. Johnsongrass has much larger, pointed seeds that develop a reddish/brown tint as they mature.

Figure 2. From left to right, guinea grass seedhead branch (Credits: Brent Sellers); johnsongrass seedhead branch (Credits: Hunter Smith); and vaseygrass spikelet (Credits: Brent Sellers).

Stems

The stems of johnsongrass and guinea grass can look very similar. Inspection of the stems will show scattered but abundant hairs along the stem of guinea grass. Stem hair on guinea grass varies because of the different biotypes. Johnsongrass stems are totally smooth with no hairs. Vaseygrass stems have hairs where the leaf meets the stem or on the stem toward the base of the plant. This is because vaseygrass will generally lose stem hairs as the stems elongate.

Leaves

Johnsongrass leaves have a large white midrib and a smooth, glossy appearance. Guinea grass leaves have a less prominent white midrib, and the undersides are rough with stiff hairs. Vaseygrass leaves are long and narrow with an indented midrib and crinkled leaf margins.

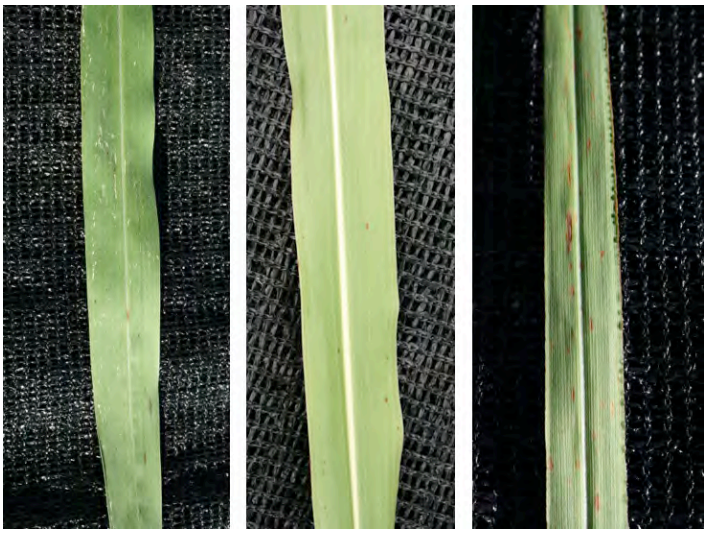

Figure 4. From left to right, guinea grass leaf blade; johnsongrass leaf blade; vaseygrass leaf blade. Credits: Hunter Smith

Figure 5. Vaseygrass leaf margin. Credits: Hunter Smith

Roots

A fifth and final identification method is to pull or dig up the roots. All three of these grasses are perennial, but johnsongrass has large white rhizomes that are easily seen if the plant is well established. Vaseygrass and guinea grass have smaller, more fibrous root structures compared to johnsongrass.

Figure 6. Guinea grass root structure. Credits: Hunter Smith

Figure 7. Vaseygrass root structure. Credits: Brent Sellers

Figure 8. Johnsongrass rhizome. Credits: Brent Sellers

Control

Johnsongrass

Outrider: For best johnsongrass control, apply 1.33 ounces per acre when grass is actively growing and is at least 18–24 inches tall, up to the heading stage.

Impose (bermudagrass only): Use 4–6 ounces per acre on johnsongrass less than 24 inches. Higher rates can be used, but unacceptable injury on bermudagrass will likely occur. Although 4 oz of Impose can control johnsongrass, some regrowth should be expected on older stands that are large at the time of application.

Pastora (bermudagrass only): Use 1 oz/A on seedling johnsongrass (rhizomes < 18") and 1.5 oz/A on mature stands. Bermudagrass injury will occur with Pastora, but will be less than that observed with Impose. Maximum application rate of Pastora is 2.5 ounces per acre per year.

Vaseygrass

Impose (bermudagrass only): Vaseygrass control can be accomplished by using 6–8 ounces per acre. This rate of Impose will be highly injurious to bermudagrass and one cutting of hay will likely be lost. This injury can be minimized if the application is made immediately after hay removal and before the bermudagrass leaf-out. Additionally, do not apply Impose until after the first hay cutting when rainfall is common.

Glyphosate: Spot spraying with 1% solution (1.2 oz/gal) can be effective. Care should be taken to avoid contact with desirable grasses.

Guinea grass

Glyphosate: Spot spraying with 1% solution (1.2 oz/gal) can be effective. Care should be taken to avoid contact with desirable grasses.

Palmer Amaranth (*Amaranthus palmeri*)

J. Bosques, UF/IFAS Extension Marion County

Palmer amaranth, or pigweed is an aggressive weed, invasive and highly prolific. It is native to the desert regions of southwest United States and northern Mexico. Palmer amaranth has become one of the major invasive weeds in Florida thanks to its ability to produce huge amounts of seed. Recently this weed has become resistant to glyphosate and ALS herbicides. Farm equipment, wildlife and animal manure can spread palmer amaranth seeds into un-infested pastures. Seed viability has been reported for up to 12 years in the soil.

Picture 1. Palmer Amaranth in vegetative stage.

Picture 2: Palmer Amaranth seedhead.

Smutgrass, small (*Sporobolus indicus*) and large (*Sporobolus indicus* var. *pyramidalis*)

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Smutgrass is a warm-season perennial bunch grass that becomes relatively unpalatable as it matures. There are two varieties of smutgrass in Florida, small and large. Although small smutgrass was once more prevalent, large smutgrass is now the dominate species in central and south Florida pastures. Some grazing of juvenile smutgrass does occur when its quality is similar to bahiagrass, but within a few weeks it is no longer palatable to cattle. Control is difficult due to its aggressive nature and the fact that it is a prolific producer of seeds throughout the growing season with up to 45,000 seeds produced per plant. Seed size is relatively small making them easily transported and they cling to feathers and hair due to an outer gelatinous substance that becomes sticky when wet. Seeds can be viable for up 2 years in the soil and only need bare ground and a little moisture to germinate.

Smutgrass bunch.
http://www.commodities.caes.uga.edu/turfgrass

Smutgrass panicle.
http://www.archbold-station.org

Smutgrass top-killed by frost.
http://www.archbold-station.org