

# Identification and Control of Johnsongrass, Vaseygrass, and Guinea Grass in Pastures<sup>1</sup>

Brent Sellers, Hunter Smith, and Jason Ferrell<sup>2</sup>

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 drier 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 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; johnsongrass seedhead; and vaseygrass seedhead. Credit: Hunter Smith and Brent Sellers, UF/IFAS

### 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; johnsongrass seedhead branch; and vaseygrass spikelet. Credit: Hunter Smith and Brent Sellers, UF/IFAS

### 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.

Credit: Hunter Smith, UF/IFAS



Figure 5. Vaseygrass leaf margin.

Credit: Hunter Smith, UF/IFAS

### 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.

Credit: Hunter Smith, UF/IFAS



Figure 7. Vaseygrass root structure.

Credit: Brent Sellers, UF/IFAS



Figure 8. Johnsongrass rhizome.

Credit: Brent Sellers, UF/IFAS

## Control

There are four active ingredients that are commonly used to selectively remove these unwanted grass species from our desirable forages including sulfosulfuron (Outrider), imazapic (Panoramic, Plateau, etc.), glyphosate (various products; be sure to check formulation to determine the appropriate application rate) and a premix of nicosulfuron + metsulfuron (Pastora). Specific recommendations for each grass species are described below.



## 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.

**Panoramic(bermudagrass only):** Use 4–6 ounces per acre on johnsongrass less than 24 inches tall. Higher rates can be used, but unacceptable injury on bermudagrass will likely occur. Although 4 oz of Panoramic 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 Panoramic. Maximum application rate of Pastora is 2.5 ounces per acre per year.

## Vaseygrass

**Panoramic (bermudagrass only):** Vaseygrass control can be accomplished by using 6–8 ounces per acre. This rate of Panoramic 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 Panoramic 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.

An alternative approach to all three grass weeds is to apply glyphosate at 0.38 lb acid equivalent per acre. Since there are various formulations of glyphosate on the market, it is difficult to provide a rate in ounces per acre. However, if the formulation is a 3 lb acid equivalent as in Gly Star Plus, the application rate would be 16 oz per acre. Conversely, if the glyphosate product is formulated as Roundup Powermax III, the application rate would be equivalent to 11 oz per acre. This rate should be applied within 7 to 10 days after cutting; otherwise significant injury and yield loss should be expected.

<sup>1</sup> This document is SS-AGR-363, one of a series of the Department of Agronomy, UF/IFAS Extension. Original publication date August 2012. Revised November 2018 and January 2025. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.

<sup>2</sup> Brent Sellers, center director and professor, Department of Agronomy, UF/IFAS Range Cattle Research and Education Center; Jason A. Ferrell, professor, weed science and invasive plants, and chair, Department of Agronomy; and director, UF/IFAS Center for Aquatic and Invasive Plants; UF/IFAS Extension, Gainesville, FL 32611.

The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication do not signify our approval to the exclusion of other products of suitable composition.

All chemicals should be used in accordance with directions on the manufacturer's label.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office. U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Andra Johnson, dean for UF/IFAS Extension.