Fall Panicum: Biology and Control in Sugarcane

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Fall panicum is an annual that primarily emerges in spring and summer but seed germination can occur almost year-round in Florida. However, it tends to be sensitive to shading and is typically not found in sugarcane once canopy closure occurs. Fall panicum typically reaches a height of 1.5 to 4 feet, but has been reported to reach over 6 feet in height. Its growth habit can range from erect to sprawling, and it can form large loose tufts. Seedlings and mature plants have different identifying characteristics.

Biology and Identification
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Seedlings
Fall panicum seedlings (Figure 1) often have a purple tint, and the first few leaves have many hairs on the underside. The sheaths and collars of the first few leaves also tend to be densely hairy. However, they gradually become less hairy as the seedling grows and new leaves emerge. Leaves are rolled in the bud, and auricles are absent. Leaf blades are ¾ to 1 ½ inches long and about 1/5 inch wide. Ligules are 1/24 to 1/12 inch long, fringed, hairy, and often fused at the base.

Mature Plants
The leaf blades of mature plants are 4 to 20 inches long by 1/5 to 4/5 inch wide and have a conspicuous midvein. The undersides of leaves on mature plants are without hairs (glabrous) and glossy. Stems are glabrous, round, and sometimes glossy. Nodes along the stem are usually swollen and

Figure 1. Fall panicum seedling in a sugarcane field.
bent in different directions (Figure 2), which contributes to the rather unusual zigzag growth habit of this weed. Stems are capable of rooting at the lower nodes. The seedhead is a wide, spreading panicle 4 to 16 inches long (Figure 3). Individual spikelets are yellow and approximately 1/8 inch long by 1/12 inch wide. Each spikelet produces 1 smooth, dull-yellow-to-brown seed.

**Control in Sugarcane**

**Preemergence or Very Early Postemergence**

- Atrazine¹ (AAtrex, others) can be applied PRE or VEPOST at 6 to 8 pts per acre to control fall panicum. If applied VEPOST, fall panicum should be 2 inches or less in height. It can also be applied in combination with ametryn (Evik) at 0.25 to 1 lb per acre. The addition of ametryn can increase postemergence (POST) activity, but can also result in increased crop injury to sugarcane. Lower rates of ametryn should be used when temperatures are warmer. A tank-mix of atrazine and pendimethalin (Prowl 3.3, Prowl H2O, others) is also effective.

- Pendimethalin applied at 8 (Prowl 3.3, others) or 7.2 pts (Prowl H20) per acre, respectively, will provide PRE control of fall panicum. Pendimethalin does not have POST activity.

- Metribuzin¹ (Metribuzin 75, others) can be applied at 1.33 to 2.33 lbs per acre (for use on muck soils only and not on sandy soils) PRE or VEPOST for control of fall panicum. If applied VEPOST, fall panicum should be 2 inches or less in height. Metribuzin in combination with pendimethalin is also an effective treatment for fall panicum.

- Clomazone (Command 3ME) can be applied at 2.66 to 3.33 pts per acre PRE for control of fall panicum. Bleaching of sugarcane leaves can occur if the crop is spiking at application. Lower rates should be used on light or sandy soils.

¹ WARNING: The following information has been added to the atrazine and metribuzin labels. This statement should be heeded by all prospective users, and steps should be taken to comply with this label change:

“Atrazine and metribuzin are chemicals which can travel (seep or leach) through soil and can contaminate groundwater as a result of agricultural use. Atrazine and metribuzin have been found in groundwater as a result of agricultural use. Users are advised not to apply atrazine or metribuzin where the water table (groundwater) is close to the surface and where the soils are very permeable, i.e., well-drained soils such as sands and loamy sands. Your local agricultural agencies can provide further information on the type of soil in your area and location of groundwater. In addition, some product label statements include as a further qualification of risky soils, soils containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which would allow direct introduction into an aquifer.”
Postemergence

Fall panicum can be effectively controlled POST with the following treatments:

- Asulam (Asulox, others) can be applied broadcast or directed in sugarcane at least 14 inches tall at 6 to 8 pts per acre for POST control of fall panicum. Apply only once per season and not less than 140 days before harvest. The addition of a non-ionic surfactant at 0.25% v/v is recommended.

- Trifloxysulfuron (Envoke) can be applied at 0.3 oz per acre to control fall panicum seedlings less than 6 inches in height. It can be applied broadcast in ratoon cane, but can only be applied directed in plant cane. For control of larger (7–16 inches) fall panicum plants, trifloxysulfuron at 0.3 oz per acre can be tank-mixed with 4 pt asulam and applied broadcast to ratoon cane (Figure 4). Trifloxysulfuron should always be applied with non-ionic surfactant at 0.25% v/v.

Figure 4. Fall panicum treated with an asulam + trifloxysulfuron tank mixture.