UT Extension
W 308

Pasture Weed Fact Sheet

Knotroot Foxtail

Trevor D. Israel, UT Extension Assistant
G. Neil Rhodes Jr., Professor and UT Extension Weed Management Specialist
Jeffery D. Via, UT Extension Agent and County Director, Fayette County
Becky Muller, UT Extension Agent, Shelby County

Knotroot Foxtail *Setaria parviflora* (Poir.) Kerguélen

Classification and Description

Knotroot foxtail is a warm-season perennial grass that is also known as knotroot bristlegrass or simply perennial foxtail. It is native to the Americas and can be found throughout Tennessee in hay fields, pastures, lawns, roadsides and waste sites (Fig. 1). Plants emerge in late spring or early summer from rhizomes or seeds. In seedlings, leaf blades are rough on the upper side and smooth on the lower side. The sheath is smooth and the ligule is a fringed membrane. Mature stems are smooth, reaching heights of over 3 feet and can be erect or bent abruptly just above ground level. Mature leaves are 0.1 to 0.4 inches wide, 2.25 to 10 inches long, and can be hairy on the upper side near the stem (Fig. 2). The sheaths are smooth and usually keeled. The seedhead is cylindrical, 0.25 to 1 inch wide, 0.5 to 4 inches long, and yellow to brown or purple in color (Fig. 3). Each spikelet has four to 12 bristles that are 0.1 to 0.5 inches long. Roots of mature plants are fibrous, but also produce short, knotty rhizomes (Fig. 4).

Problems in Pastures and Hay Fields

Knotroot foxtail in tall fescue pastures is difficult to control. As fescue growth slows in the summer, the foxtails are growing strong. Seedheads can interfere with grazing and lead to an accumulation of trash on top of the fescue. The most serious knotroot foxtail problems are in bermudagrass hay fields. The rough texture of foxtail seedheads in hay can cause ulcers around the mouths of horses. Most other foxtails are annuals and are less difficult to control in bermudagrass. However, the perennial nature of knotroot foxtail makes it a greater challenge. Plants can send up more shoots from the rhizomes even after herbicide application.

Fig. 1. Bermudagrass field infested with knotroot foxtail.

Fig. 2. Keeled sheaths and hairs on bases of leaves.

Fig. 3. Stiff, yellow-to-brown bristles surround knotroot foxtail seedheads.

Fig. 4. Fibrous roots with knotty rhizomes.

THE UNIVERSITY of TENNESSEE
INSTITUTE of AGRICULTURE

Management in Pastures and Hay Fields

Prevention is a crucial component in the management of pasture and hay field weeds. Feeding hay that is contaminated with knotroot foxtail seedheads can spread the weed from field to field and farm to farm. In tall fescue pastures, there are no safe and effective herbicides for the control of grassy weeds such as foxtails. Maintaining a healthy stand of forage grass is the best way to combat grassy weeds. Proper fertilization, liming and managed grazing are all key components of a healthy pasture. Clipping foxtail stems before the seeds are mature can help slow the spread of plants in the pasture. Controlling knotroot foxtail in bermudagrass hay fields is also difficult. For very small-scale infestations, digging up foxtail plants will help prevent a larger problem. Spot-spray applications of Pastora or glyphosate will need to be repeated to target plants that survive. Currently, the most effective herbicide treatments only provide suppression of knotroot foxtail, not complete control. The University of Tennessee recommends applying Pastora at 1 to 1.5 ounces per acre plus glyphosate at 8 ounces per acre (if using a 4 pound per gallon product) for knotroot foxtail suppression. Be sure to include a nonionic surfactant at 1 quart per 100 gallons of spray mixture. For heavily infested fields, a second application of Pastora at 1 ounce per acre can be made 10 to 14 days after the first application. Applications of Pastora or Pastora plus glyphosate at these rates will cause noticeable stunting and discoloration of bermudagrass, but it will recover. Keep in mind that no more than 2.5 ounces per acre of Pastora can be applied to a bermudagrass field per year. The University of Tennessee is conducting ongoing research to help identify additional management strategies for knotroot foxtail.

As is the case with all pesticide applications, be sure to thoroughly read and follow the label directions. For application rates and instructions, precautions and other useful information, consult UT Extension Publication 1801, Weed Management in Pastures and Hay Crops (https://utextension.tennessee.edu/publications/Documents/PB1801.pdf). For information regarding herbicide stewardship and reducing off-target damage to crops, please visit the stewardship website at http://herbicidestewardship.utk.edu.

References

Bryson, C. T. and M. S. DeFelice, eds. 2009. p. 295 in Weeds of the South, Univ. of Georgia Press, Athens, GA 30602. 468 pp.

ag.tennessee.edu

W 308 12/13 14-0108