

GIANT FOXTAIL

(*Setaria faberii*)

SEEDLING DESCRIPTION

The seed leaf (coleoptile) of giant foxtail is a slender green shoot. True leaves are rolled in the bud and have a pale green midvein on the lower surface. Leaf sheaths and stems are smooth and slightly flattened. The ligule is a row of short hairs about $\frac{1}{32}$ inch (0.5 mm) long. Auricles are absent. The upper leaf surface is covered with fine hairs about $\frac{1}{64}$ inch (less than 0.5 mm) long, best seen by bending the leaf blade back and looking across its surface.

1. Giant foxtail seedlings.
2. Older seedlings beginning to branch at the base.
3. Fringed ligule; note the smooth leaf sheath margins.
4. Large panicles drooping in a graceful arch.
5. Mature seed heads of giant foxtail are large and fuzzy.



Giant foxtail grows 3 to 7 feet (0.9 to 2 m) tall. Stems are slender and weak, and the plant may fall over (lodge) if not supported by other vegetation. The joints or nodes are large and pronounced. Stems root at the lower nodes, causing the grass to grow in tufts or clumps. Leaves are flat, up to 12 inches (30 cm) long, up to 1 inch (2.5 cm) wide, and pointed. The upper leaf surface is densely covered with short straight hairs and has a velvety appearance. A pale green midvein is evident on the lower surface.

Flowering occurs in July through September, and seeds mature about one month later. The green cylindrical panicle is covered with many bristly hairs (awns) that give the whole seed head a fuzzy appearance. It measures 3 to 8 inches (7.5 to 20 cm) long and ¼ to 1 inch (2 to 2.5 cm) across, including awns, and bends near the base so that the head droops over.

Seeds are dispersed by animals, water, and humans. They are produced in such huge quantities that infestations may quickly become quite severe, especially in row crops and on land where previous use of 2,4-D has eliminated other weeds.

In addition to competing with crops for light, moisture, and nutrients, giant foxtail can cause abnormal growth in certain crops, including cabbage and tomatoes. Research on these vegetables shows that foxtail may be toxic to these crops. Toxicity occurs when chemicals produced by the foxtail roots travel through the soil and are absorbed by the roots of the vegetable plants. This interaction, called "allelopathy," enables some plants to reduce competition by stunting nearby vegetation.

Giant foxtail prefers sandy soils that are rich in nitrogen. In the United States, it is a noxious weed in corn and other cultivated crops, as well as in pastures, gardens, and river bottom lands.

SIMILAR SPECIES

The *Setaria* grasses include six species, all with the fuzzy cylindrical seed head (panicle) that gives this genus the common name "foxtail."

Hairs appear only near the base of the leaf blade. Green foxtail (*S. viridis*) may have a few short hairs scattered over its upper leaf surface or may be entirely smooth. In giant foxtail, the entire upper leaf surface is densely covered with short, straight hairs.

Panicles, if present, also provide clues for identification. Green and yellow foxtail are named for the color of the bristles (awns) on the seeds, although green foxtail panicles are sometimes purple. Giant foxtail panicles are greenish, grow 3 to 8 inches (7.5 to 20 cm) long, and droop over in a graceful arch. Both green and yellow foxtail panicles are shorter, usually 2 to 5 inches (5 to 12 cm) long, and are straight or only slightly nodding. Giant foxtail and fall panicum seedlings are difficult to tell apart; both have short hairy ligules and no auricles. However, giant foxtail leaf blades are hairy above, while those of fall panicum are usually smooth. The undersides of fall panicum leaves are typically glossy.

NATURAL HISTORY

Giant foxtail came to the United States from China in the 1930s, probably along with the seed of Chinese millet. It now grows throughout the eastern half of the United States except for the far northern and southern corners. It is yet unknown in Europe but has recently been found in Canada.

The importance of giant foxtail as a weed lies in its ability to produce a large amount of seed that can sprout without a dormant period. Given enough light, it can easily crowd out most crops if not controlled.

Other common names for giant foxtail are nodding foxtail, giant bristlegrass, and tall foxtail.

CONTROL

Since seeds can germinate throughout the entire summer, full-season control of this weed can be difficult. Most preemergence herbicides are effective in controlling giant foxtail if applied at the recommended time and rate. Herbicides applied very

seed production is a cost effective way to prevent the spread of foxtail in solid-stand forages. A combination of cultural and chemical methods is recommended for avoiding foxtail problems in row crops. Cultural methods include planting narrow rows and supplying the nutrients necessary for vigorous crop growth and early canopy closure. Giant foxtail can usually be shaded out in this manner.

For specific recommendations, consult your county Extension agent or the most recent *Weed Control Manual and Herbicide Guide*, available through Meister Publishing Company, 37841 Euclid Avenue, Willoughby, Ohio 44094. Follow label instructions for all herbicides and observe restrictions on grazing and harvesting procedures.

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