

The Foxtails

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The foxtails (*Setaria*) can be a problem in agronomic, vegetable, and fruit crops as well as in turf and landscapes. The three problematic species in New York, yellow (*S. glauca*), green (*S. viridis*), and giant (*S. faberi*) foxtail are all summer annuals. Germination begins in May when the soils temperatures warm up (50°F) and continues through early summer. Flowering is regulated by day-length and begins as day shorten in July. Seeds mature two weeks after pollination. The seeds do not germinate until the following year. Seeds are not long-lived if they remain near the surface. Most seeds die within three years.

All the foxtails have seedheads that look like fox tails. You distinguish the three, by the locations and size of hairs on the leaves and sheath. For a complete description of each species, go to <https://blogs.cornell.edu/weedid/foxtails/>. (Find a guide to grass identifying characteristics [here](#).)



Giant Foxtail, Photo by Antonio DiTommaso



Hairs on upper leaf surface of giant foxtail. Photo by Antonio DiTommaso of Cornell University.



Yellow foxtail has long hairs at the leaf base. Photo by Lynn Sosnoskie



Green foxtail has no hairs on the upper leaf surface. Like all foxtails, it has a hairy ligule. Photo by Lynn Sosnoskie

Table 5: Compares [yellow](#), [green](#), and [giant](#) foxtails (*Setaria glauca*, *S. viridis*, and *S. faberi* respectively) and [fall panicum](#) (*Panicum dichtomiflorum*).

Species	Yellow foxtail (<i>Setaria glauca</i>)	Green foxtail (<i>Setaria viridis</i>)	Giant foxtail (<i>Setaria faberi</i>)	Fall panicum (<i>Panicum dichtomiflorum</i>)
Similarities	Basic characteristics: have a fringed ligule, upright habit, fibrous root system, and foxtail-shaped flower head.	See basic characteristics description.	See basic characteristics description.	Only at seedling stage does fall panicum resemble foxtail spp.
Differences	On the base of the leaf blade there are long wispy hairs on the upper surface; margins are smooth or somewhat rough	Blades are rough that lacks hair; sheath is hairy at the margins	Largest of the species, especially the nodding seedhead; many short hairs on upper surface of blades and the margins of the sheath on seedlings and mature plants	Fall panicum is hairy on both the blade and sheath, while yellow foxtail is hairy on the upper leaf blade. The other two are largely hairless. Also, yellow foxtail's wispy hairs at the collar region are diagnostic for that species.

There are several management strategies to control foxtails. Tillage timing and depth are key to managing foxtails. A light tillage in late spring will induce a flush of germination and the seedlings can then be killed by tillage or herbicides. Foxtails are susceptible to cultivation, especially when the shoots are severed from the roots. Roots will not grow new shoots, however, shoots can easily re-root in moist soil. Foxtails do not tolerate shade, so a complete canopy closure by the crop is important. Plant spring grains by mid-April to get a competitive stand. Also planting half the seed in one direction, and the other half at 45° or 90° to the first direction will help canopy closure. In perennial forages, Prowl herbicide can be applied to prevent grass emergence (read the label). When mowed, new shoots will form, even after two or three mowings. So, persistence is needed to prevent seed from forming. Mow before the seedheads emerge. Giant foxtail readily germinates at the soil surface, so it does well in systems where a cover crop is rolled & killed. Reducing the weed seedbank and encouraging seed predators is key.

Foxtails are palatable and provide decent nutrition when they are young. (In one study, sheep did not eat giant foxtail.) The seed heads do cause physical irritation when eaten by livestock because they are coarse and sharp.

For a complete review of the foxtails, go to <https://cals.cornell.edu/weed-science/weed-profiles/foxtails>.

References:

Cornell Weed Science, <https://cals.cornell.edu/weed-science/weed-profiles/foxtails>.

Cornell Weed Identification Blog, <https://blogs.cornell.edu/weedid/foxtails/>