Forest Health

Invasive Plant Hit List: Chinese Silver Grass

Chinese silver grass, also known as Miscanthus, is an attractive ornamental that is also a serious invasive plant threat.

Photo courtesy: James H. Miller, USDA Forest Service, www.forestryimages.org

by Jeff Stringer

Chinese silver grass is a highly prized ornamental bunch grass that has been widely planted for the aesthetic beauty of its foliage and tall flower heads. Unfortunately, this grass easily escapes from its ornamental grounds and establishes along roadsides and other disturbed ground in rural areas. Chinese silver grass (*Miscanthus sinensis*), also known as zebra grass, eulalia grass, eulalia, Chinese fairy grass, and by its scientific name (Miscanthus) has many varieties that are planted for windbreaks, and some varieties are being considered for large-scale plantings to produce biomass. As is the case with many invasive plants, Miscanthus hails from Asia (China, Japan and Korea) and was brought to the United States as an ornamental. It has spread throughout the eastern United States, Colorado and California.

The species can spread from the physical movement of rhizomes, which it produces abundantly. This occurs when disking ground that is infested and when moving equipment, thus spreading rhizomes to new areas. However, it can also spread from other types of mechanical disturbance. Although spread from rhizomes is common, it can also move from wind dispersion of the seed. However, the latter has not been shown to be as important as the spread from the rhizomes.

Miscanthus establishes along roadsides and other rights-of-way, forest edges, river and lake banks, and disturbed areas and can form very dense infestations. It can also spread from initial planting in yards of abandoned home sites. When thick infestations occur, Miscanthus can easily outgrow and kill out many native species. Also, the dry foliage in the fall can be a wildfire hazard.

Miscanthus establishing along a forest edge.

Photo courtesy: Arthur E. Miller, USDA APHIS PPQ, www.forestryimages.org

Identification and Life Cycle

Miscanthus is easy to identify. It can be confused when young with some native grasses, but there are no native grasses with these particular characteristics:

- occurs in bunches;
- has foliage that reaches 3 to 5 feet in height;
- has pink or reddish flower heads that reach between 5 and 10 feet in height and turn gray or tan in the fall. The flower stalks start to develop in August and mature in November. Some varieties have alternating green and white bands on the long leaves.

There are no native species of Miscanthus, and the few possible look-a-likes include big bluestem grass, that can get as tall as Miscanthus. However, big bluestem grass has a three-pronged flower head that resembles a turkey foot.

As discussed earlier, Miscanthus spreads primarily by underground roots or rhizomes, and mature plants have extensive perennial root systems. New growth emerges in mid-spring and rapidly replaces the previous year's dried leaves. The viability of the seed is different, depending on variety, but the main type of spread is vegetatively from the roots and rhizomes.

Rhizomes of Miscanthus can be spread when ground is disked.

Photo courtesy: Leslie J. Mehrhoff, University of Connecticut, www.forestryimages.org

Miscanthus will grow over a wide range of soils but prefers moist, well-drained soil to reach its maximum height and fullness. It prefers full sunlight, but can persist in the shade of small openings and sparse overstories. Miscanthus will grow in relatively cold climates (Zone 5) as well as warm climates (Zone 9).

Control

Miscanthus can best be controlled using herbicides. Due to the extensive root systems and rhizomes, it is very difficult to control by hand pulling, disking, and other mechanical treatments. Individual plants or small areas can be hand grubbed if follow-up occurs the next year to take care of missed plants. See table below for control options.

Table 1. Control methods for Chinese silver grass (*Miscanthus sinensis*).

Method	Timing	Details and Cautions[1]
Hand pulling/grubbing[1]	anytime	• Limited effectiveness due to extensive root system/rhizomes. • Hand grubbing individual plants or very small patches may be possible with due diligence to removal of all root systems. • Monitoring is necessary, and follow-up treatments will most likely be required.
Mowing/disking	not effective	• Rhizomes will still persist after mowing or disking.
Area-wide broadcast foliar herbicide[1,2]	September - October	• Generic glyphosate brands (see label for appropriate brand required for the area) at 1.0-1.5 quarts per treated acre. Use a non-ionic surfactant (0.5%) to improve effectiveness. • Accord™ used for applications in the forest or forest edge. • Roundup Pro brands for non-crop areas (rights-of-way and industrial sites). • Roundup brands for use in fields and fencerows.
Hand or small equipment applied spot foliar herbicide[1,2]	May/June or September/ October	• Arsenal AC 1% solution in water. • Glyphosate herbicides (Accord, Roundup Pro brands, or Roundup brands, depending on location) 2% solution in water. • Thoroughly wet foliage of treated plants.

[1] All areas or plants need to be checked for resprouting the year following treatment and reapplication to all foliage.
[2] Other herbicide brands can be used for control. The herbicides that are listed are those commonly used regionally and are labeled for use in forests (woodlands).

Drawing courtesy: USDA PLANTS Database, USDA NRCS PLANTS Database, www.forestryimages.org

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