Miscanthus, Ornamental and Invasive Grass

By Mary Hockenberry Meyer
Associate Professor, Department of Horticultural Science, University of Minnesota

Miscanthus is a beautiful ornamental grass, admired by many gardeners. It is often planted around water, and has good potential for use on golf courses and large landscape settings. Its tall, showy flowers are dramatic and stately, evoking images of the Orient and Japanese gardens. It has become a best seller as ornamental grasses and other new herbaceous perennials increase in popularity in American gardens.

Over the years, especially in the 1980s new cultivars of Miscanthus came on the market. Over 50 cultivars can be found today for sale, many of which originated from seedlings found in various nurseries. These new cultivars have been selected for earlier flowers, new flower colors and increased winter hardiness. Although these characteristics are desirable ornamental traits, they are also traits that are found in invasive plants.

Recently, I was able to spend a sabbatical study leave looking at the issue of Miscanthus as an invasive plant in the US. The final result of this project, which was funded in part by the National Parks Service, is online: http://horticulture.coafes.umn.edu/miscanthus.

I found a considerable amount of escaped Miscanthus in the US. In Eastern US, it's Miscanthus sinensis. In the Midwest, it's Miscanthus sacchariflorus. In Europe, there is much work on Miscanthus x giganteus, (a natural hybrid of the above two species) as a biomass fuel source. It is important to distinguish between these three kinds of Miscanthus.

Miscanthus sinensis is a bunch grass or clumper with many cultivars; Miscanthus sacchariflorus has aggressive rhizomes and little variation, and Miscanthus x giganteus is a huge plant, with broad leaves, slowly creeping rhizomes, and late flowers that set no seed. (For further details see: http://horticulture.coafes.umn.edu/miscanthus/identification.html.)

Miscanthus Sinensis

As a grounds manager it's important to understand and to be aware of the potential invasiveness of Miscanthus. The biggest potential threat for invasiveness comes from Miscanthus sinensis. Although few nurseries are growing or selling the species, the cultivars can be found at most retailers. When two or more of these cultivars are grown together, seedlings are possible, and almost always revert back to the "wild type" or species, which can become quite aggressive. Currently, the area where Miscanthus sinensis has self-seeded the most is the Middle Atlantic States.

Miscanthus is cross-pollinated, it requires two or more cultivars or species to set seed. Individual, isolated plants usually set little or no seed. Therefore, many gardeners who grow only one plant never see seedlings. In managed landscapes and typical home gardens any

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Miscanthus–

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seedlings will be noticed, removed or enjoyed. When a large planting of Miscanthus including several cultivars or kinds is planted along a highway, natural area, or in landscapes where self-seeding can go unnoticed, potential problems exist.

Miscanthus Sacchariflorus

This rhizomatous species is very cold hardy, even in USDA Zone 2. Locally this species is often referred to as "pampas grass." Although large colonies of this grass are found along roadsides in many counties in Iowa, and to a limited extent in Minnesota, this species sets very little or no seed. Over the years, the diameter of the colony can increase, but it can be controlled with regular mowing during the growing season or gylphosate applied to 6-12" of green actively growing tissue. This species is not as ornamental due to the aggressive rhizomes, and because of this, many nurseries do not sell this plant.

Miscanthus x Giganteus

The giant Miscanthus has been research extensively in Europe as a biomass fuel source. Flowers appear in October, however and the blooms may not form in colder, (USDA Zones 4 or 5) climates. These flowers are male sterile and even when grown with other species, this form has not been known to set any seed.

From an invasive standpoint, giant Miscanthus appears to be of little risk. This species is hardy in USDA Zone 3 in most winters. Because of its size, it makes a good screen, or a maze for children's gardens.

Recommendations

Should you continue to plant Miscanthus? DO NOT PLANT the species Miscanthus sinensis. Plant only vegetative propagated cultivars that have shown little evidence of self-seeding in your area. See http:// horticulture.coafes.umn.edu/miscanthus/recommendations.htm for further recommendations.

Watch for Seedlings!

If you have Miscanthus on your grounds or golf course, be on the lookout for seedlings in beds nearby or new plants appearing where you did not plant them. Remove all seedlings.

Will Miscanthus Be the Next Invasive Plant in Minnesota?

I doubt it. For one thing we are much more aware of invasive plant problems and on the lookout for potential self-seeding plants. Secondly, Miscanthus seeds still may not develop before a fall frost in our climate. Newer, early flowering cultivars pose the biggest threat and should be watched carefully.

In conclusion, Miscanthus sinensis cultivars should only be planted in managed landscapes where they can be watched and controlled for self-seeding. How quickly or much further Miscanthus will spread in the United States is difficult to predict. As responsible horticulturists, we must be aware of potentially invasive plants, open to communication about these issues, and play a role in the education of the gardening public.

U OF M TURF AND GROUNDS FIELD DAY SET FOR JULY 29

The University of Minnesota Turf and Grounds Field Day will be held on July 29, 2004 at the TROE Center on the St. Paul campus. This is an excellent opportunity to see first hand the types of research projects being conducted by University faculty. The following are examples of research projects which will be showcased during the morning field day:

+ Pesticide runoff from bentgrass fairways
+ Use of colonial bentgrasses and fine fescues on golf course fairways
+ Nitrogen leaching and gas emissions from fertilizers applied to a USGA putting green as effected by irrigation inputs
+ National Turfgrass Evaluation Program
+ Perennial ryegrass and Kentucky bluegrass breeding nurseries
+ Using remote sensors to help conserve irrigation water
+ Fertilizer runoff from Kentucky bluegrass
+ No-mow grasses and alternative plant species

These are examples of the types of projects that you can see at field day on July 29, 2004. Following field day, we will offer a phosphorus fertilizer training program for golf personnel and other exciting educational opportunities.

-- Brian Horgan
Extension Turfgrass Specialist, University of Minnesota