

ILLINOIS STUDIES OF *MISCANTHUS* × *GIGANTEUS* FOR BIOMASS FEEDSTOCK PRODUCTION

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While switchgrass (*Panicum virgatum*) is considered to be the primary biomass feedstock for many portions of the United States, another biomass-producing grass, *Miscanthus* × *giganteus* (*M.* × *g.*), deserves consideration. Originating in Japan, *M.* × *g.* has been used for many years as a landscape plant in the United States, but since 2002, it has been the subject of University of Illinois research interest because of its potentially great biomass production. For more than 15 years, the grass has been studied and grown in Europe where its senescent stems are harvested and burned to produce heat and electricity. *Miscanthus* × *giganteus* is a perennial, warm-season grass native to Asia. It is a reproductively sterile hybrid believed to have *Miscanthus sinensis* and *M. sacchariflorus* as its parents. *M.* × *g.* begins growth in April and typically reaches 2 m by the end of May in central Illinois. Growth continues throughout the summer, and it normally grows taller than 4 m by the end of September. It is propagated asexually using plantlets produced in tissue culture or by rhizome divisions. Following field planting, *M.* × *g.* generally takes at least three growing seasons to become fully established and reach optimal biomass production. In Illinois, the senesced stems can be harvested from early December through early March. As an example of its prolific biomass production, annual dry-matter *M.* × *g.* yields from University of Illinois research plots planted in 2002 and averaged over 2004, 2005, and 2006 produced 22.0 t ha⁻¹, 34.7 t ha⁻¹, and 35.4 t ha⁻¹ in northern, central, and southern Illinois, respectively. In this presentation, Illinois research findings that include evaluations of greenhouse and field propagation of *M.* × *g.* rhizomes and rhizome harvesting and planting methods will be shared. The tolerance of *M.* × *g.* to pre- and post-emergence herbicides used to control grassy and broadleaf weeds in new plantings also will be discussed. Finally, this presentation will explore past Illinois agronomic experiences and the realistic opportunities for future expansion of this crop.

KEY WORDS: bioenergy, herbaceous perennial, sterile hybrid

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*** INVITED SPEAKER ***