

# Kansas Agricultural Experiment Station Research Reports

---

Volume 1

Issue 4 Southeast Agricultural Research Center  
Reports

Article 16

---


January 2015

## Adaptability of Miscanthus Cultivars for Biomass Production

J. L. Moyer

Kansas State University, [jmoyer@ksu.edu](mailto:jmoyer@ksu.edu)

Follow this and additional works at: <https://newprairiepress.org/kaesrr>

 Part of the [Agriculture Commons](#), and the [Agronomy and Crop Sciences Commons](#)

---

### Recommended Citation

Moyer, J. L. (2015) "Adaptability of Miscanthus Cultivars for Biomass Production," *Kansas Agricultural Experiment Station Research Reports*: Vol. 1: Iss. 4. <https://doi.org/10.4148/2378-5977.1066>

This report is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Kansas Agricultural Experiment Station Research Reports by an authorized administrator of New Prairie Press. Copyright January 2015 Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Contents of this publication may be freely reproduced for educational purposes. All other rights reserved. Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned. K-State Research and Extension is an equal opportunity provider and employer.



---

# Adaptability of Miscanthus Cultivars for Biomass Production

## Abstract

In 2014, miscanthus dry matter (DM) did not differ between cultivars, averaging 10,970 lb/a. Total two-year production totaled 15,920 lb DM/a.

## Keywords

bioenergy crop, dry matter, establishment

## Creative Commons License



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

## Adaptability of Miscanthus Cultivars for Biomass Production

*J.L. Moyer*

### Summary

In 2014, miscanthus dry matter (DM) did not differ between cultivars, averaging 10,970 lb/a. Total two-year production totaled 15,920 lb DM/a.

### Introduction

Miscanthus is a productive, efficient genus of warm-season perennial grass. Because of its growth potential and stalk properties, miscanthus has been identified by the U.S. Department of Energy as a possible dedicated energy crop. This study was established to compare cultivars for adaptation in eastern Kansas and to produce biomass to test for suitability as a bioenergy crop.

### Experimental Procedures

Two cultivars were planted on 3-ft spacings on May 24, 2012, in four replications at the Mound Valley Unit of the Southeast Agricultural Research Center. The initial soil test indicated 18 and 280 lb/a of available phosphorus (P) and potassium (K), respectively, with 2.0% organic matter and pH 6.2 in a silty clay loam.

Plots were 3 rows, with seven plants per row. Plants were irrigated occasionally in the summer of 2012, but several were replanted in late May through early June 2013. Cultivation was performed for weed control in the summer of 2012 and once in 2013. No cultural practices were imposed in 2014. The center row of each plot was harvested on December 2, 2013, and on November 26, 2014, at 2.5-in. height, and biomass was subsampled, dried at 140°F for moisture content, and saved for analysis of biomass characteristics.

### Results and Discussion

In 2013, dry matter (DM) production of the cultivars was not significantly different ( $P > 0.10$ ) and averaged less than 5,000 lb/a (Table 1). The relatively low yield may have been partly because only 1.40 in. of rainfall was received between June 5 and July 20 in 2013, and stands were not fully established. In 2014, DM did not differ between cultivars but averaged 10,970 lb/a. The two-year production thus totaled 15,920 lb DM/a.

**Table 1. Yield and dry matter of miscanthus for 2013 and 2014, Mound Valley Unit, Southeast Agricultural Research Center**

Cultivar	2013		2014	
	Yield	Dry matter	Yield	Dry matter
	lb/a	%	lb/a	%
Freedom	5,298	72.2	11,443	78.8
IL clonal	4,586	70.5	10,505	78.5
Average	4,942	71.4	10,974	78.6
LSD (0.10)	NS	NS	NS	NS