

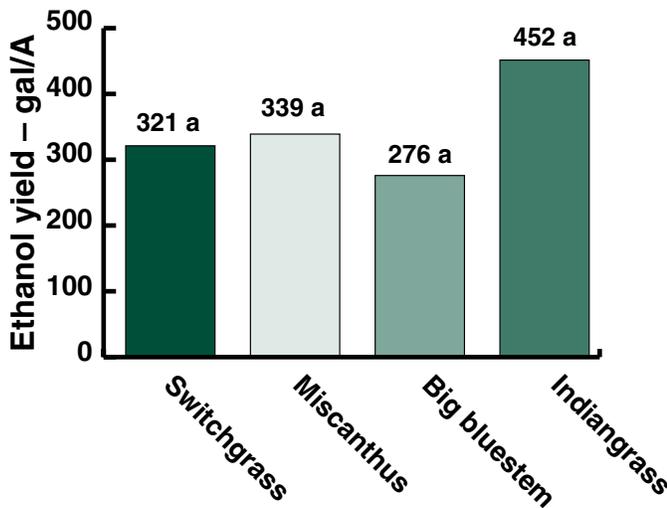


Purpose

Evaluate biofuel crop productivity on various soils and microclimates across Michigan.

Materials and methods

This experiment was established as a randomized complete block design with four replications. Big bluestem, indiagrass, switchgrass and miscanthus were established in May 2009. A walk behind sickle bar mower was used to cut a 28-inch swath from the switchgrass plots. Sweet sorghum and canola were also planted, but not harvested due to poor weed control which resulted in negligible yields.



County	Cass
Cooperator	Edward Lowe Foundation
Nearest town	Cassopolis
Soil type	Schoolcraft loam
Weed control	Canola: Stinger 0.5 pt/A Sweet sorghum, miscanthus: 8 oz/A 2,4-D + 0.5 lb/A Indiagrass, big bluestem, miscanthus and switchgrass: 8 oz/A 2,4-D
Fertilizer	Canola, sweet sorghum: 400 lbs/A 15-15-15 (60 lbs. actual), Indiagrass, big bluestem, miscanthus and switchgrass: 152 lbs/A 46-0-0 (70 lbs/A actual)
Exp. design	RCB, 4 replications

Variety	Biomass yield		Ethanol yield	
Switchgrass	3.6	tons/A	321 a	gal/A ¹
Miscanthus	3.8	tons/A	339 a	gal/A ¹
Big bluestem	3.1	tons/A	276 a	gal/A ¹
Indiagrass	5.0	tons/A	452 a	gal/A ¹

¹ tons/A X 90 gal/ton = gal. of ethanol/A

Results and discussion

Means separation test showed that biomass and ethanol yields were not significantly different. Indiagrass had the highest mean yield, but was quite variable. Big bluestem yields could be over exaggerated here as they were severely lodged. Traditional harvest equipment would not have been able to pick up as much as the hand harvest did. All of these grasses out competed foxtail, the primary weed.

Sponsored by Project GREEN.

