

# Switchgrass nitrogen fertility trial for a bioenergy crop

Alger County



MICHIGAN STATE UNIVERSITY EXTENSION

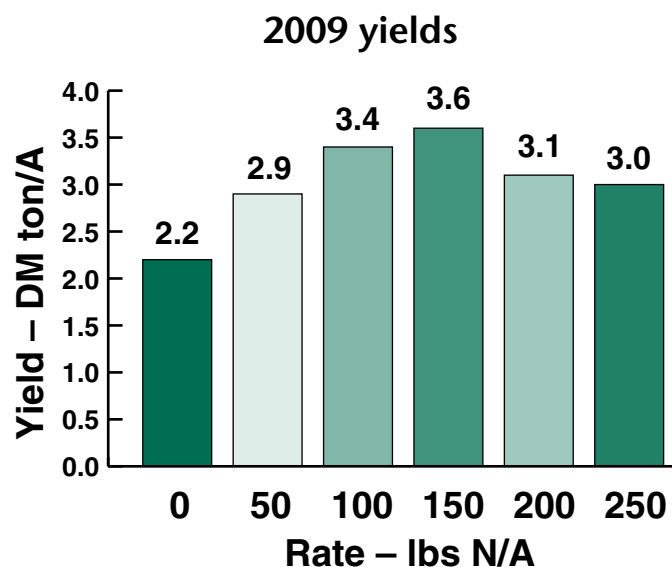
MICHIGAN AGRICULTURAL EXPERIMENT STATION

Cropping Systems  
Other

County	Alger
Cooperator	Upper Peninsula Experiment Station
Nearest town	Chatham
Soil type	Eben very cobbly sandy loam
Tillage	Fall plowed, disked, field cultivated
Previous crop	Fallow
Planting date	See table
Seeding rate	12 lbs/A pure live seed
Fertilizer	Urea (46-0-0)
Herbicide	1 qt. Atrazine 41, 1 pt. Dicamba applied at green-up
Row width	6 inches
Variety	Cave-in-Rock
Harvest date	See table
Exp. design	RCB, 4 replications

## Purpose

Evaluate the yield response of switchgrass to differing nitrogen rates.



**Table 1. UP switchgrass fertility trial yield (DM ton/A).**

Rate (lbs. N/A)	2007 yield	2008 yield	2009 yield	Total yield
0	1.6	2.9	2.2	6.6
50	2.1	3.5	2.9	8.6
100	2.3	4.2	3.4	9.9
150	2.5	5.6	3.6	11.8
200	2.39	5.2	3.1	10.7
250	2.67	5.1	3.0	10.9
Mean	2.3	4.4	3.0	9.7
C.V. %	16.7	10.9	13.5	7.8
LSD 0.05	0.6	0.7	0.6	1.2
Seeding date	06/05/06			
Harvest date	10/24/07	10/24/08	10/29/09	

## Results

There was a significant difference in switchgrass yield when different application rates (0, 50, 100, 150, 200 and 250 lbs/A N) of nitrogen fertilizer were applied. Based on a three-year total, the highest and lowest yield occurred at 150 and 0 lbs/A, respectively. There was no switchgrass yield increase beyond 150 lbs/A N.

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