2012 CMDC
Switchgrass for Bioenergy
VOGEL, MITCHELL, & HAY

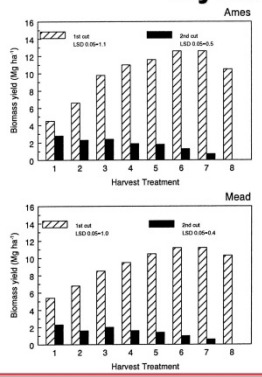
Switchgrass for Bioenergy

- **Continuous research on switchgrass at UN-L since 1936**
- **Released the first switchgrass cultivar 'Nebraska 28' in 1949**
- **Focus on bioenergy since 1990**
- **Nebraska leads the nation in switchgrass breeding, genetics, and management**

2012CMDC-8-30MITCHELLVOGEL (1)

Switchgrass for Bioenergy

Dry matter yield



Yield

Greatest at boot to post-anthesis
Declined after frost
Single harvest in GP & Midwest

Fertilizer

At 120 kg N ha^{-1}, N removed = N applied

Vogel et al. 2002

2012CMDC-8-30MITCHELLVOGEL (2)

Switchgrass for Bioenergy

Hybrids increase dry matter yield

Strain	Yield Tons/acre
Summer (upland)	6.1
Kanlow (lowland)	7.1
Kanlow & Summer F1's	9.4

Hybrid switchgrass can increase yield by 32 to 54% compared with parental lines (Vogel & Mitchell, Crop Science 48:2159-2164, 2008). It will likely require 5-10 years to develop field-scale production systems for hybrid switchgrass.

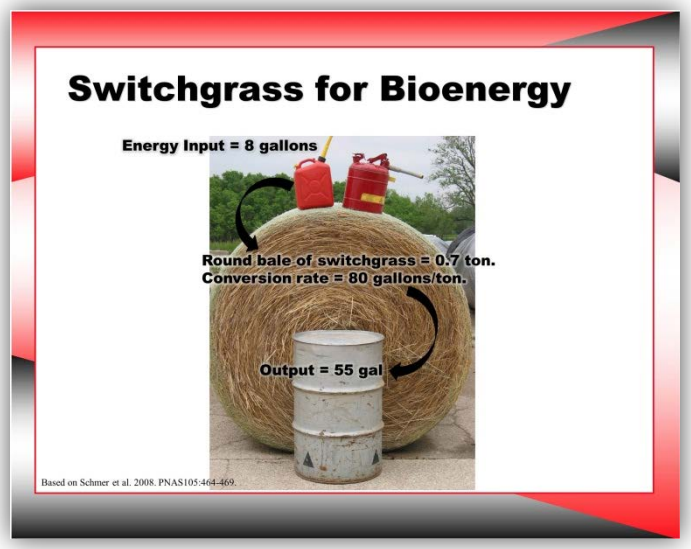
2012CMDC-8-30MITCHELLVOGEL (3)

Switchgrass for Bioenergy

Dry matter loss during storage

Bale & Storage	August DM Loss	Post Frost DM Loss	Mean DM Loss
Square	(%)	(%)	(%)
Open	37.8	42.5	40.2
Covered	4.9	2.7	3.8
Barn	0	11.8	5.9
Round 3x			
Open	13.0	0	6.5
Covered	5.1	0	2.6
Barn	2.5	0	1.3
Round 4x			
Open	10.5	2.4	6.5
Covered	5.4	0	2.7
Barn	3.6	0.9	2.3

2012CMDC-8-30MITCHELLVOGEL (4)



2012CMDC-8-30MITCHELLVOGEL (5)