EFFECT OF MID-SEASON HARVEST ON SEED QUALITY OF SWITCHGRASS

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Introduction

Switchgrass (*Panicum virgatum* L.) is a tall growing native warm season grass with wide adaptation and multiple uses. Forage utilization and seed production offer the potential for economic returns as acreage is developed for biomass feedstock. .

Objective

To evaluate seed production of switchgrass within a biomass system.

Materials and Methods

'Alamo' switchgrass was harvested on 13 June and 16 December 2006 as forage and biomass.

Seed was harvested 30 October for half and full season yield. Seed was harvested within hand clipped 3.28 ft2 quadrats, bagged and air dried.

Seed was cleaned into 1st and 2nd grades by weight using a suction cleaning machine.

The summer of 2006 was hot and very dry with less than 2 inches of rainfall from June through August. Eight inches of rainfall occurred in both September and October.

Results and Discussion

Total herbage yield was 7.8 tons acre^{-1} harvested once in December (full season) and 5.9 tons acre^{-1} harvested in June and December (half season). Total threshed seed yield in October was 165 lb acre^{-1} for switchgrass grown full season and 53 lb acre^{-1} for half season switchgrass.

Table 1. Seasonal total yield, purity and viability of Grade 1 Alamo seed harvested in October 2006

Season	Yield	Pure live seed	Purity	Germination	Dormant	Total viable
	--lb/acre---		----------%----------			
Full	57.1a	34.5a	86.1a	59.6a	6.1a	65.6a
Half	40.7b	27.8a	94.7a	63.6a	6.6a	70.2a

Means within a column followed by different letters are significantly different (p<0.05)

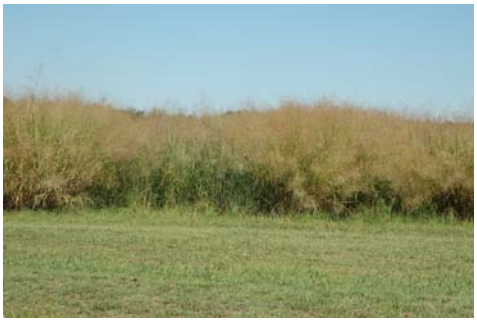
Germination and purity of grade 2 seed was less than 10%

Switchgrass harvested in June had forage quality characteristics suitable for beef animals. *In vitro* dry matter digestibility (IVDMD) was 53.7%, acid detergent fiber was 34.5%, neutral detergent fiber was 72.5%, lignin was 5.7% and protein was 7%. In contrast, neither half nor full season switchgrass harvested in December was suitable for anything other than as a biomass feedstock. IVDMD was 32.4 and 26.9% for half and full season switchgrass. There were 8100^{+} BTU's per lb in both half and season biomass harvested in December.

Conclusions

Seed production was not viable in 2006 due to hot and dry conditions followed by heavy fall rain that shattered seed before harvest.

Biomass yield was excellent. Switchgrass harvested in June was suitable as hay for beef animals.



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