

# 2005 Michigan Wildlife Food/Cover Variety Trials

Richard Leep<sup>1</sup> and Timothy Dietz<sup>2</sup>  
February 6, 2006

## Results from the 2005 Growing Season

Three wildlife variety trials (perennial, annual, and cover) were established in East Lansing, Ingham Co., Michigan on May 18, 2005. Trials (randomized complete block design with four replications) were seeded with a Carter Nursery seeder in plot lengths of 25 ft. and width of 3 ft in a conventionally prepared seedbed of tiled-drained Capac loam soil (Soil test taken April 2005: pH: 7.4, P:26 ppm, K:124 ppm). No irrigation was used in the establishment of the plots and near-average rainfall was received after seeding (Table 1).

Weed control was the biggest challenge in establishing these plots, since entries were comprised of multiple species and plots were in close proximity. Yellow foxtail (*Setaria glauca*) was prevalent in many stands and only the most aggressive crop species (ryegrasses, brassicas, warm-season grasses) could compete. Entries containing only broadleaf species were sprayed with Poast Plus (sethoxydim) to control the foxtail, and for all other treatments; the foxtail was clipped with a flail harvester at a height exceeding that of the crop. Mollie California brome grass was especially slow to establish and resulted in no harvestable biomass in 2005, but a near 100% stand was visible in the fall of the year. PowerPlant (sorghum, sunflower, beans and peas) resulted in the highest dry matter yield in the establishment year with four tons of dry matter produced per acre (Table 2 & 3). Some of the lower-yielding entries were still in the process of establishing and continued to grow after the September 12 harvest. Regrowth of the entries containing forage brassicas was impressive and continued into late November. A subsample of each plot in the annual and perennial trials was collected, dried, and ground (1mm screen) for forage quality analysis. Crude protein was estimated from total nitrogen determination via the Hach modified Kjeldahl method. Neutral detergent fiber (NDF) and Acid Detergent Fiber (ADF) were obtained using the Goering/VanSoest Sequential Fiber

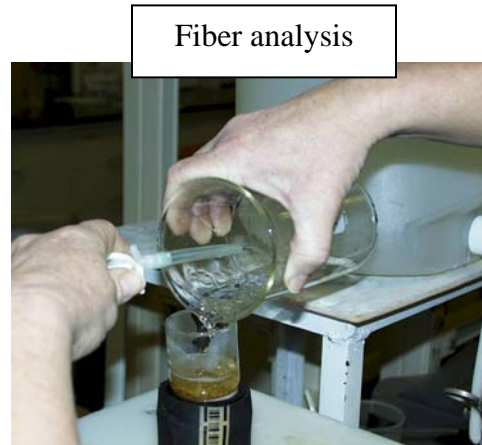


<sup>1</sup> Forage Agronomist, Crop and Soil Sciences, Michigan State Univ.

<sup>2</sup> Research Assistant, Crop and Soil Sciences, Michigan State Univ.

Analysis with the addition of 1ml of alpha-amylase for the breakdown of starch. The ADF (cellulose and lignin) and NDF (hemicellulose + ADF) content of forages are important measurements because they provide an estimate of digestibility. The higher the ADF content, the less digestible a forage would be to a ruminant. The higher the NDF content of a forage, the greater the level of satiety (fullness) a ruminant would experience when feeding on that forage, thereby decreasing the forage intake. Mixtures containing a large amount of legumes maintained the highest level of forage quality with crude protein and fiber contents approaching that of high-quality dairy feed. Lactating ruminants require NDF fiber content around 40 %. Many of the perennial species were just about perfect for providing excellent intake potential to ruminants. Crude protein content of perennial species ranged from 15.9 to 18.8%. Crude protein levels of these entries are more than sufficient for all game species feeding on the plants. Crude protein content of this is near the level of high quality alfalfa hay needed for high producing lactating dairy cows. Crude protein and fiber are usually lower in annual food plot materials; however, if harvested by animals at the proper growth stage, they can rival perennial species. This was the case in most of the entries in this trial.

The Cover trial had a wide-range of species included as well, with clovers, bromegrass, and sorghum-sudan grass that varied greatly in height and density (Table 4). The greatest biomass was obtained with Buckshot Game Bird Food Plot Mix and the least from Mollie California bromegrass. Cover ratings were made on September 12 and were based on visual stand assessment of height and density.



**Statistics**

Data are analyzed using PROC GLM or MIXED in SAS v. 8.2 software (Cary, NC). Means and Fischer’s Least Significant Difference (LSD) are reported at the bottom of each column. The LSD is used to compare values *within* a column and is the minimum difference between two values for a “real” difference to exist. The alpha level for the LSD in these trials was 0.05 or 5%, which means, we are 95% certain that values differing by more than the LSD are not due to chance.

Table 1. Growing season rainfall (inches) in East Lansing in 2005 (Normal: 30 yr.-average).

	Normal	2005	Dev.
Apr	2.81	1.19	-1.62
May	2.73	1.88	-0.85
June	3.54	4.47	0.93
July	3.02	6.42	3.40
Aug	3.12	1.09	-2.03
Sept	2.50	3.83	1.33
Oct	2.20	0.24	-1.96
Total	19.92	19.12	-0.80

**Table 2. 2005 Perennial Wildlife Food Plot Variety Trial Results**

Ingham County, Michigan  
non-irrigated

Product Name	Company	12-Sep	12-Sep	Quality**		
		Stand Rating 1 to 5*	Yield dry tons/acre	CP	ADF %	NDF
Imperial Whitetail Clover	Whitetail Institute of North America	4.3	1.20	15.9	24.2	38.5
D-K Drought Deer	Kester's Game Food Nurs., Inc.	4.5	1.06	17.3	22.9	36.2
Whitetail Select- Infinity	Get Outdoors Hunting	5	0.85	18.4	22.3	32.0
Farmscapes Champion Brand Clover	Grassland Central	4.5	0.79	18.8	23.4	37.6
Synergy	ProSeeds Marketing	4.9	0.63	18.3	26.2	38.0
Farmscapes Deer & Wildlife Mix	Grassland Central	5	0.62	16.8	24.2	38.5
	Mean	4.7	0.85	17.6	23.9	36.8
	LSD (0.05)	NS	0.45			

Location: Mich. State Univ. Exp. Station, East Lansing

Design: RCB, plot size 3 x 25' (3 x 22'  
harvested)

Seeded: 18-May-05

Soil Type: Capac loam, tile drainage

Cuttings:

Soil test taken April 2005: pH: 7.4, P:26 ppm, K:124

Fertility: ppm

Herbicide: Poast Plus (Sethoxydim) at 0.19 lb a.i./a to mixtures containing broadleaves only

\*Visual rating (1=0-20% stand...5=80-100% stand)

\*\*CP:Crude protein= Total Nitrogen content x 6.25, ADF: Acid Detergent Fiber (Lignin + Cellulose), NDF: Neutral Detergent Fiber (Hemicellulose + ADF)

**Table 3. 2005 Annual Wildlife Food Plot Variety Trial Results**

Ingham County, Michigan  
non-irrigated

Product Name	Company	12-Sep	12-Sep	Quality**		
		Stand Rating 1 to 5*	Yield dry tons/acre	CP	ADF %	NDF
PowerPlant	Whitetail Institute of North America	4.3	4.00	7.6	22.6	36.5
Buckshot Game Bird Food Plot	Grassland Central	4.0	3.41	2.9	29.3	49.6
Brier Ridge EZ II Gro	Mich.State Seed Solutions	3.8	1.78	11.8	22.2	36.2
Crossbow Deer Food Plot	Grassland Central	3.8	1.64	15.4	25.4	39.3
Brier Ridge Buck's Banquet	Mich.State Seed Solutions	5.0	1.45	13.7	25.6	43.6
Brier Ridge Doe's Delight	Mich.State Seed Solutions	4.0	1.08	18.4	21.5	36.4
Brier Ridge Rut-n-Ready	Mich.State Seed Solutions	3.8	0.95	13.1	20.8	31.7
Mollie California Bromegrass	Landmark Seed	2.5	.	.	.	.
	Mean	3.9	2.04	11.8	23.9	39
	LSD (0.05)	0.5	0.72			

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 25' (3 x 22' harvested)  
 Seeded: 18-May-05  
 Soil Type: Capac loam, tile drainage  
 Cuttings: Single cutting taken September 12, 2005  
 Fertility: Soil test taken April 2005: pH: 7.4, P:26 ppm, K:124 ppm  
 Herbicide: Poast Plus (Sethoxydim) at 0.19 lb a.i./a to mixtures containing broadleaves only

\*Visual rating (1=0-20% stand...5=80-100% stand)

\*\*CP:Crude protein= Total Nitrogen content x 6.25, ADF: Acid Detergent Fiber (Lignin + Cellulose), NDF: Neutral Detergent Fiber (Hemicellulose + ADF)

**Table 4. 2005 Wildlife Cover Plot Variety Trial**

Ingham County, Michigan

non-irrigated

<b>Product Name</b>	<b>Company</b>	<b>12-Sep Cover Rating 1 to 5*</b>
Buckshot Game Bird Food Plot	Grassland Central	5.0
Brier Ridge EZ II Gro	Michigan State Seed Solutions	2.5
Brier Ridge Buck's Banquet	Michigan State Seed Solutions	2.5
Whitetail Select- Infinity	Get Outdoors Hunting	2.5
Brier Ridge Rut-n-Ready	Michigan State Seed Solutions	2.0
Mollie California Bromegrass	Landmark Seed	1.8
	Mean	2.7
	LSD (0.05)	0.8

Location: Mich. State Univ. Exp. Station, East Lansing

Design: RCB, 4 replications plot size 3 x 25' (3 x 22' harvested)

Seeded: 18-May-05

Soil Type: Capac loam, tile drainage

Fertility: Soil test taken April 2005: pH: 7.4, P:26 ppm, K:124 ppm

Herbicide: Poast Plus (Sethoxydim) at 0.19 lb a.i./a to mixtures containing broadleaves only

\*Visual rating (average of two visual ratings by people standing at opposite ends of the plot, a rating of 5 was given to plots with 100% stand that had plant heights exceeding 12 inches )