

# **2005 Michigan Red Clover Variety Trials Report**

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

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## **Comments on the 2005 Growing Season**

The 2004/2005 winter was a good test of winterhardiness for several species due to periods with no snow cover and very cold conditions. Our red clover trials came through the winter surprising well with no discernable winter injury in East Lansing (EL) or Lake City (LC). The spring was warm but dry, and red clover in East Lansing (EL) performed very well with an average first cutting yield of 2.31 tons of dry matter/acre. The second and third cuttings benefited from adequate rainfall in June and July (Table 1).

Red clover varieties are tested in two locations in the state, using cutting, fertility, and IPM management strategies that are optimal for each location. Varieties are planted with a Carter Nursery Seeder in three-ft. wide (5 rows with 6" spacing) by twenty-five ft. long plots into conventionally tilled soil in a randomized complete block design with a minimum of four replications. Irrigation may be used in the seeding year to insure good stands, but subsequent years are supported only by natural rainfall. Phosphorus, Potassium, and Boron fertilizer (0-13-39+0.5% B) is applied according to soil tests the seeding year and at 500 lbs/acre in subsequent years. Plots are harvested with a three-ft. Carter Flail-type Forage Harvester with sub-samples collected for DM determination. Trials are maintained for a total of 4 years (seeding year plus three) if stands persist.

## **Lake City in Central Northern Lower Michigan**

Lake City is 130 miles north of East Lansing and has colder winters than East Lansing and less snow than Chatham. Both winterhardiness and persistence are important characteristics for alfalfa varieties grown at Lake City. Trials are managed for good yields (4-6 tons/acre) and long stand life. Yield data for the 2004 seeding at Lake City are reported in Table 2.

## **East Lansing in Southern Lower Michigan**

Red clover variety trials are seeded on the Crop and Soil Sciences Agronomy Farm at East Lansing in southern lower-Michigan. These trials are located and are usually seeded in the spring. Trials are managed for high yields (5 tons/acre) using two to three cuttings per year. Yield data is reported in Table 3.

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

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

## Statistics

Data are analyzed using PROC GLM or MIXED in SAS v. 8.2 software (Cary, NC). Means, coefficient of variation (CV%), and Fischer's Least Significant Difference (LSD) are reported at the bottom of each column. The CV is a percentage that indicates the precision of measurement. Columns with low CV's had lower error between replications within a given treatment. 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.  
2005 Precipitation (inches)

	East Lansing			Lake City		
	Normal*	2005	dev	Normal*	2005	dev
Apr	2.81	1.19	-1.62	2.88	1.04	-1.84
May	2.73	1.88	-0.85	2.67	2.58	-0.09
June	3.54	4.47	0.93	3.09	2.05	-1.04
July	3.02	6.42	3.40	3.26	3.69	0.43
Aug	3.12	1.09	-2.03	3.01	4.48	1.47
Sept	2.50	3.83	1.33	3.25	4.06	0.81
Oct	2.20	0.24	-1.96	2.65	0.72	-1.93
Total	19.92	19.12	-0.80	20.81	18.62	-2.19

\*30 yr ave.

Table 2.

Red clover yields (tons dry matter/acre) in Lake City, seeded in May 2004

Cultivar	Marketer	6-Jun	8-Jul	15-Aug	2005 Total
Cardinal	Seed Research of Oregon	1.60	1.33	0.60	3.53
FSG 9601	Allied Seed, LLC	1.63	1.15	0.61	3.39
Start	Barenbrug Seed	1.59	1.17	0.62	3.37
Dominion	Seed Research of Oregon	1.69	1.12	0.48	3.28
VNS*		1.43	1.12	0.67	3.21
Amos	DLF International	1.47	0.93	0.48	2.87
Starfire	AMPAC Seed	1.20	1.04	0.62	2.85
Average		1.51	1.12	0.58	3.21
CV		13	12	20	8
LSD (0.05)		0.28	0.19	0.17	0.40

Location: Lake City Exp. Station, Missaukee County

Design: RCB, plot size: 3 x 23(3 x20 harvested)

Seeded: 5/29/2004, 12 lbs PLS/acre

Fertility: 0-65-195 + 2.5 B

Soil Type: Kent Silt loam

Cuttings: One in seeding year for weed control

\* Variety Not Stated- may be a blend of other named cultivars

Table 3.

Red clover yield (tons dry matter/acre) in East Lansing, seeded in May 2004

Cultivar	Marketer	31-May	8-Jul	24-Aug	2005 Total	2004 Total	2-yr. Total
FSG9601	Allied Seed	2.31	1.96	1.54	5.82	3.24	9.06
Dominion	Seed Res.of OR	2.30	1.95	1.63	5.88	3.09	8.97
Cardinal	Seed Res.of OR/ Mich. State Seed	2.36	1.94	1.39	5.69	3.14	8.83
Starfire	AMPAC	2.32	1.96	1.56	5.84	2.97	8.81
VNS*		2.26	1.79	1.35	5.40	3.20	8.60
Average		2.31	1.92	1.49	5.73	3.13	8.85
CV		5	5	9	4	4	3
LSD (0.05)		0.15	0.14	0.19	0.3	0.16	0.21

Location: Mich. State Univ. Exp. Station, Ingham County

Design: RCB, plot size 3 x 24' (3 x 21' harvested)

Seeded: May 2004, 12 lbs. PLS/A.

Fertility: 0-65-195 + 2.5 B

Soil Type: Capac, tile drainage

Cuttings: Two in 2004

\* Variety Not Stated- may be a blend of other named cultivars