

# 2006 Michigan Alfalfa Variety Trials Report

Richard Leep<sup>1</sup>, Timothy Dietz<sup>2</sup>, Doo-Hong Min<sup>3</sup>, and Christian Kapp<sup>4</sup>  
December 11, 2006

## Comments on the 2006 Growing Season

Alfalfa stands in Michigan benefited from adequate snow cover and moderate to near-normal winter temperatures, which was a welcome relief after 2004-5's open/cold winter that led to wide-spread ice-sheeting damage. The 2006 growing season began with ideal planting conditions in April; followed by cool-wet conditions in May, which delayed growth of many early spring seedings. Above-average rainfall prevailed across much of the Lower-Peninsula throughout the season, while Chatham received below-average rainfall for all months except May (+2.5") and October (+0.5") (Table 1.). Rains in July resulted higher yields, but reduced hay quality due to poor hay curing conditions.

Alfalfa varieties are tested in four locations across the state, using cutting, fertility, and IPM management strategies that are optimal for each location. Alfalfa 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. A pre-incorporated application of EPTC herbicide is normally used for weed control with, if necessary, follow-up applications of Imazamox and/or Sethoxydim for escapes. Phosphorus, Potassium, and Boron fertilizer (0-13-39+0.5% B) is applied according to soil tests the seeding year, and fertilizer applications following the "rule of thumb" that one ton of dry alfalfa harvested removes 14 lbs of P and 40 lbs of K per acre the subsequent years. Plots are harvested with a three-foot Carter Flail-type Forage Harvester with sub-samples collected for DM determination. Trials are normally maintained for a total of 4 years (seeding year plus three).

## Chatham (46.347°N) and Daggett (45.48°N) in the Upper Peninsula

New trials were seeded at the Upper Peninsula Experiment Station in August, 2006. Established trials were seeded in June 2, 2003 and June 3, 2005 at Chatham, Alger Co. (location 1), and May 4, 2005 in Daggett, Menominee Co. approximately 250 miles north of East Lansing. These areas have colder winters than Lake City, but more snow. Winterhardiness and persistence are important at Chatham. Trials are normally seeded in the spring, and are usually cut three times per year: Cut 1- June 10-20; Cut 2 – July 15-25



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

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

<sup>3</sup> Forage Specialist, Upper Peninsula Exp. Sta., Michigan State Univ.

<sup>4</sup> Research Technician, Upper Peninsula Exp. Sta., Michigan State Univ.

and Cut 3 – end of September. Potato leafhopper (PLH) is not normally a problem, but populations are monitored and controlled if necessary. Below average rainfall was received in the 2006 growing season at Chatham which contributed to lower yields, while Daggett received near-normal rainfall (Table 1). There was moderate PLH insect pest pressure in Daggett and low pressure in Chatham. Dry-matter yields for the Chatham 2003 and 2005 seedings are presented in Table 2 and 3, the Daggett Trial in Table 4.

### **Lake City (44.35°N) in Central Northern Lower Michigan**

Lake City (location 2) 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. Trials at Lake City are typically cut three times per year: Cut 1 - June 10-20; Cut 2 - July 25 to August 5; Cut 3 - mid to late September. Yield data for 2003, 2004, and 2005 seedings at Lake City are reported in Tables 5, 6, and 7, respectively. The 2006 trial was seeded May 8 and an application of Imazomox with spray-grade AMS was made in June. Data for the 2006 seeding is presented in Table 8.

### **Saginaw (43.35°N) in East-Central Lower Michigan**

The East-Central location is on the Saginaw Experiment Station in Saginaw County on Swan Creek Rd (location 3). Saginaw is located about 90 miles northeast of East Lansing. The soils of this area are lake/river bed soils which are prone to heaving as a result of freeze-thawing cycles. This trial is usually cut four times a year: Cut 1 ~ June 1; Cut 2 ~ July 1; Cut 3 – August 10-15; Cut 4 – October 15-20. A rain-delayed first cutting produce yields greater than 3 tons and above-average rainfall in July supported higher 3<sup>rd</sup> cutting yields. A total of four cuttings were obtained from this trial and yield data is reported in Table 9.

### **East Lansing (42.72°N) in Southern Lower Michigan**

Alfalfa variety trials are seeded annually at East Lansing in southern lower-Michigan (location 4). These trials are located on the Crop and Soil Sciences Agronomy Farm and are usually seeded in the spring. Trials are managed for high yields (8 tons/acre) using four cuttings per year. Typical cutting dates are: Cut 1 - late May to early June (late bud to early bloom); Cut 2 - July 5-15 (1/10 bloom); Cut 3 - August 5-15 (1/10 bloom); Cut 4 - mid to late October with little regrowth after cutting. High fertility with P and especially K is essential for obtaining high yields. Potato leafhopper (*Empoasca fabae*) are controlled with an application of Sevin (carbaryl) insecticide prior to cut 2 and 3, and Alfalfa weevil (*Hypera posticata*) populations are controlled as needed with Sevin prior to the first cutting in the standard trials. The Potato leafhopper resistant variety trials are not treated with insecticides. The 2006 growing season was cool and wet in May following the seeding of the 2006 trials. Imazomox and spray-grade AMS was applied for weed control of Redroot pigweed (*Amaranthus palmeri*), Common lambsquarter (*Chenopodium album*), and foxtail (*Setaria spp.*) when weeds were approximately 4 inches tall. Standard

variety trial data is presented in Tables 10, 12, 14, 16 while the Potato leafhopper resistant (PLHR) alfalfa data are in Tables 11, 13, 15 and 17.

### 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.

The MCV% is the LSD divided by the mean and LSR% is the LSD divided by the range.

Table 1.

#### 2006 Precipitation (inches)

|       | Chatham |       |       | Lake City |       |       | Saginaw |       |       | East Lansing |       |       |
|-------|---------|-------|-------|-----------|-------|-------|---------|-------|-------|--------------|-------|-------|
|       | Normal* | 2006  | dev   | Normal*   | 2006  | dev   | Normal* | 2006  | dev   | Normal*      | 2006  | dev   |
| Apr   | 2.46    | 1.99  | -0.47 | 2.88      | 3.66  | 0.78  | 2.76    | 1.87  | -0.89 | 2.81         | 2.33  | -0.48 |
| May   | 3.15    | 5.71  | 2.56  | 2.67      | 5.53  | 2.86  | 2.70    | 4.17  | 1.47  | 2.73         | 5.61  | 2.88  |
| June  | 3.61    | 0.86  | -2.75 | 3.09      | 5.00  | 1.91  | 3.32    | 2.03  | -1.29 | 3.54         | 2.93  | -0.61 |
| July  | 3.56    | 2.12  | -1.44 | 3.26      | 2.18  | -1.08 | 2.72    | 5.72  | 3.00  | 3.02         | 3.68  | 0.66  |
| Aug   | 3.55    | 3.31  | -0.24 | 3.01      | 4.58  | 1.57  | 3.13    | 2.61  | -0.52 | 3.12         | 5.62  | 2.50  |
| Sept  | 4.16    | 2.55  | -1.61 | 3.25      | 3.28  | 0.03  | 2.82    | 2.53  | -0.29 | 2.50         | 2.95  | 0.45  |
| Oct   | 3.24    | 3.79  | 0.55  | 2.65      | 4.68  | 2.03  | 2.39    | 3.80  | 1.41  | 2.20         | 3.82  | 1.62  |
| Total | 23.73   | 20.33 | -3.40 | 20.81     | 28.91 | 8.10  | 19.84   | 22.73 | 2.89  | 19.92        | 26.94 | 7.02  |

\*30 yr ave.

Table 2.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**Upper Peninsula Exp. Sta., Chatham**  
 Sown June 2003  
 Non-irrigated

| Entry           | 8-Jun | 17-Jul | 21-Aug | 2006  | 2005  | 2004  | 3-yr. | final                  |
|-----------------|-------|--------|--------|-------|-------|-------|-------|------------------------|
|                 |       |        |        | Total | Total | Total | Total | plant                  |
| DM tons/acre    |       |        |        |       |       |       |       | counts                 |
|                 |       |        |        |       |       |       |       | plants/ft <sup>2</sup> |
| WL 357 HQ       | 1.87  | 1.59   | 1.02   | 4.48  | 3.11  | 4.72  | 12.31 | 15.0                   |
| Pioneer 54V46   | 1.81  | 1.44   | 1.00   | 4.25  | 2.89  | 4.31  | 11.45 | 16.0                   |
| Radiant         | 1.63  | 1.34   | 0.96   | 3.93  | 2.88  | 4.46  | 11.27 | 13.7                   |
| Prolific        | 1.68  | 1.36   | 0.96   | 4.00  | 2.82  | 4.41  | 11.23 | 20.0                   |
| Starbuck        | 1.64  | 1.35   | 0.96   | 3.94  | 2.82  | 4.42  | 11.18 | 14.0                   |
| Attention       | 1.66  | 1.43   | 0.95   | 4.03  | 2.64  | 4.41  | 11.08 | 12.0                   |
| Pioneer 54H91   | 1.53  | 1.33   | 0.92   | 3.77  | 2.70  | 4.60  | 11.07 | 9.3                    |
| Ameristand 403T | 1.69  | 1.28   | 0.86   | 3.83  | 2.77  | 4.33  | 10.93 | 15.7                   |
| WL 319 HQ       | 1.77  | 1.13   | 0.80   | 3.70  | 2.70  | 4.32  | 10.72 | 13.7                   |
| Garst 620       | 1.55  | 1.25   | 0.87   | 3.67  | 2.66  | 4.39  | 10.72 | 18.7                   |
| Baralfa 32IG    | 1.54  | 1.24   | 0.94   | 3.72  | 2.76  | 4.20  | 10.68 | 14.7                   |
| Baralfa 42      | 1.54  | 1.24   | 0.85   | 3.63  | 2.63  | 4.39  | 10.65 | 22.3                   |
| Dynamic         | 1.50  | 1.00   | 0.77   | 3.27  | 2.49  | 4.25  | 10.01 | 18.3                   |
| WRV 931         | 1.44  | 1.11   | 0.83   | 3.39  | 2.46  | 4.05  | 9.90  | 21.7                   |
| Extend          | 1.55  | 1.07   | 0.78   | 3.40  | 2.28  | 4.10  | 9.78  | 19.0                   |
| Vernal          | 1.43  | 1.17   | 0.81   | 3.41  | 2.16  | 4.02  | 9.59  | 10.7                   |
| LHR100          | 1.34  | 1.03   | 0.80   | 3.17  | 2.21  | 4.21  | 9.59  | 14.6                   |
| Skiveru         | 1.43  | 0.78   | 0.61   | 2.82  | 1.86  | 3.39  | 8.07  | 12.7                   |
| Mean            | 1.59  | 1.23   | 0.87   | 3.69  | 2.60  | 4.28  | 10.57 | 15.7                   |
| CV%             | 14    | 15     | 14     | 12    | 13    | 6     | 8     | 31                     |
| LSD 5%          | 0.3   | 0.25   | 0.17   | 0.65  | 0.49  | 0.33  | 1.1   | 8                      |
| MCV (%)         |       |        |        |       | 19    | 8     | 10    |                        |
| LSR (%)         |       |        |        |       | 39    | 24    | 26    |                        |

Location: Upper Peninsula Exp. Sta., Alger Co.  
 Design: RCB, plot size: 3 x 24 (3 x 21 harvested)  
 Seeded: 6/2/2003, 20 lbs/A PLS.  
 Soil Type: Eben Very Cobbly Sandy Loam  
 Cuttings: Three in 2004 & 2005  
 Fertility: 0-63-189 Split application

Table 3.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**Upper Peninsula Exp. Sta., Chatham**  
 Sown June 2005  
 Non-irrigated

| Entry           | 12-Jun | 13-Jul | 21-Aug | 2006<br>Total | 2005<br>Total | 2-yr.<br>Total |
|-----------------|--------|--------|--------|---------------|---------------|----------------|
| Garst 6410      | 2.26   | 1.41   | 1.18   | 4.85          | 1.09          | 5.94           |
| Ameristand 403T | 2.39   | 1.30   | 1.07   | 4.76          | 1.17          | 5.93           |
| Dakota          | 2.16   | 1.39   | 1.11   | 4.66          | 1.25          | 5.91           |
| HybriForce 400  | 2.24   | 1.31   | 1.14   | 4.69          | 1.08          | 5.77           |
| 4S419           | 2.27   | 1.29   | 1.03   | 4.59          | 1.10          | 5.69           |
| WL 357 HQ       | 2.28   | 1.38   | 1.03   | 4.69          | 0.95          | 5.64           |
| FSG 400 LH      | 2.29   | 1.24   | 1.02   | 4.55          | 1.08          | 5.63           |
| FSG 406         | 2.20   | 1.32   | 1.07   | 4.59          | 1.04          | 5.63           |
| 4R419           | 2.19   | 1.34   | 1.03   | 4.55          | 1.07          | 5.62           |
| Somerset        | 2.27   | 1.35   | 1.08   | 4.70          | 0.92          | 5.62           |
| Nova            | 2.22   | 1.21   | 1.07   | 4.50          | 1.11          | 5.61           |
| FSG 407SF       | 2.14   | 1.34   | 1.08   | 4.56          | 1.01          | 5.57           |
| Wintergold      | 2.15   | 1.33   | 1.06   | 4.54          | 1.03          | 5.57           |
| Duragreen       | 2.30   | 1.20   | 0.99   | 4.49          | 1.07          | 5.56           |
| 54H91           | 2.15   | 1.21   | 1.13   | 4.49          | 1.06          | 5.55           |
| Magnum V        | 2.10   | 1.29   | 1.13   | 4.52          | 1.03          | 5.55           |
| Garst 6200 HT   | 2.24   | 1.21   | 1.05   | 4.50          | 0.99          | 5.49           |
| 4A421           | 2.22   | 1.17   | 1.10   | 4.49          | 0.98          | 5.47           |
| Summergold      | 2.08   | 1.26   | 1.08   | 4.42          | 1.04          | 5.46           |
| Vernal          | 2.23   | 1.11   | 1.04   | 4.38          | 1.01          | 5.39           |
| Genoa           | 2.23   | 1.21   | 0.95   | 4.39          | 0.99          | 5.38           |
| WL 319 HQ       | 2.23   | 1.28   | 0.93   | 4.44          | 0.91          | 5.35           |
| Evergreen 2     | 2.02   | 1.21   | 1.03   | 4.26          | 0.98          | 5.24           |
| Mean            | 2.21   | 1.28   | 1.06   | 4.54          | 1.04          | 5.59           |
| CV%             | 5      | 9      | 11     | 6             | 12            | 6              |
| LSD 5%          | 0.16   | 0.16   | 0.16   | 0.37          | 0.16          | 0.47           |
| MCV (%)         |        |        |        | 8             | 15            | 8              |
| LSR (%)         |        |        |        | 63            | 47            | 60             |

Location: Upper Peninsula Exp. Sta., Alger Co.  
 Design: RCB, plot size: 3 x 24 (3 x 21 harvested)  
 Seeded: 6/3/2005, 20 lbs. PLS/acre  
 Soil Type: Eben Very Cobbly Sandy Loam  
 Cuttings: one in 2005  
 Fertility: 0-91-247+3 lbs boron/acre

Table 4.  
**Michigan State Alfalfa Variety Trial Yield (DM  
tons/acre)**  
**Daggett, Menominee Co.**  
Sown May 2005  
Non-irrigated

| Entry           | 9-Jun | 19-Jul | 22-Aug | 2006<br>Total |
|-----------------|-------|--------|--------|---------------|
| 4R429           | 2.66  | 1.60   | 1.26   | 5.52          |
| Ameristand 403T | 2.62  | 1.59   | 1.26   | 5.47          |
| WL 357 HQ       | 2.47  | 1.63   | 1.37   | 5.47          |
| Somerset        | 2.53  | 1.65   | 1.24   | 5.42          |
| Nova            | 2.53  | 1.63   | 1.17   | 5.33          |
| Pioneer 54H91   | 2.33  | 1.71   | 1.29   | 5.33          |
| Vernal          | 2.50  | 1.51   | 1.32   | 5.33          |
| Garst 6200 HT   | 2.33  | 1.65   | 1.32   | 5.30          |
| HayGrazer       | 2.45  | 1.54   | 1.26   | 5.26          |
| Cimarron VL400  | 2.61  | 1.50   | 1.10   | 5.21          |
| Magnum V        | 2.41  | 1.59   | 1.18   | 5.18          |
| 4A421           | 2.12  | 1.85   | 1.16   | 5.13          |
| Genoa           | 2.32  | 1.56   | 1.20   | 5.07          |
| Garst 6410      | 2.33  | 1.49   | 1.24   | 5.06          |
| WL 319 HQ       | 2.17  | 1.70   | 1.14   | 5.01          |
| Dakota          | 2.33  | 1.61   | 1.07   | 5.00          |
| HybriForce 400  | 2.31  | 1.47   | 1.17   | 4.95          |
| 4S419           | 2.39  | 1.29   | 1.17   | 4.84          |
| Duragreen       | 2.31  | 1.34   | 1.17   | 4.82          |
| Pioneer 54V46   | 1.95  | 1.64   | 1.23   | 4.81          |
| Spreader 4      | 2.19  | 1.34   | 1.24   | 4.77          |
| Wintergold      | 2.19  | 1.29   | 1.25   | 4.72          |
| Mean            | 2.37  | 1.55   | 1.22   | 5.14          |
| CV%             | 14    | 19     | 10     | 12            |
| LSD 5%          | 0.45  | 0.42   | 1.22   | NS            |

MCV (%)

LSR (%)

Location: Brock Dairy Farm, Menominee Co.  
Design: RCB, plot size: 3 x 24 (3 x 21 harvested)  
Seeded: 5/3/2005, 20 lbs. PLS/acre  
Soil Type: Onaway-Nadeau fine sandy loam  
Fertility: 0-91-247+3 lbs boron/acre

Table 5.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**Lake City, Missaukee Co., Mich. State Univ.**  
 Sown June 2003  
 Non-irrigated

| Entry              | 8-Jun | 9-Jul | 9-Aug | 2006  | 2005  | 2004  | 3-yr  |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
|                    |       |       |       | Total | Total | Total | Total |
| Somerset           | 2.11  | 0.90  | 0.67  | 3.68  | 4.21  | 4.34  | 12.23 |
| Pioneer 54Q25      | 2.13  | 0.90  | 0.60  | 3.63  | 4.03  | 4.46  | 12.12 |
| Pioneer 54V46      | 2.09  | 0.85  | 0.61  | 3.54  | 4.09  | 4.30  | 11.93 |
| HybriForce 420/Wet | 1.91  | 0.83  | 0.63  | 3.37  | 4.33  | 4.09  | 11.79 |
| WL 319 HQ          | 2.05  | 0.78  | 0.56  | 3.39  | 4.11  | 4.13  | 11.63 |
| Vernal             | 1.99  | 0.68  | 0.49  | 3.16  | 4.00  | 4.15  | 11.31 |
| Pioneer 54H91      | 1.82  | 0.76  | 0.51  | 3.09  | 3.90  | 3.75  | 10.74 |
| Skriveru           | 1.72  | 0.58  | 0.38  | 2.68  | 4.10  | 3.92  | 10.70 |
| Mean               | 1.98  | 0.78  | 0.56  | 3.31  | 4.10  | 4.14  | 11.56 |
| CV%                | 11    | 18    | 23    | 14    | 18    | 7     | 5     |
| LSD 5%             | 0.32  | NS    | 0.19  | 0.67  | NS    | 0.41  | 0.88  |
| MCV (%)            |       |       |       |       |       | 10    | 8     |
| LSR (%)            |       |       |       |       |       | 58    | 58    |

Location: Lake City Exp. Station, Lake City  
 Design: RCB, plot size: 3 x 23' (3 x20' harvested)  
 Seeded: 6/5/2003, 20 lbs/A.  
 Soil Type: Kent Silt loam  
 Cuttings: two in 2003 not reported, three in 2004 and 2005  
 Fertility: 0-65-195 + 2.5 boron lbs./acre

Table 6.

**Michigan State Alfalfa Variety Trial Yields (DM tons/acre)**  
**Lake City, Missaukee Co., Mich. State Univ.**

Sown May 2004

Non-irrigated

| Entry              | 8-Jun | 9-Jul | 9-Aug | 2006  | 2005  | 2-yr. |
|--------------------|-------|-------|-------|-------|-------|-------|
|                    |       |       |       | Total | Total | Total |
| Rugged             | 3.02  | 1.91  | 1.29  | 6.23  | 5.03  | 11.26 |
| Rebel              | 2.95  | 1.98  | 1.18  | 6.11  | 4.78  | 10.89 |
| Garst 6200HT       | 2.92  | 1.80  | 1.22  | 5.94  | 4.91  | 10.85 |
| LegenDairy 5.0     | 2.81  | 1.95  | 1.25  | 6.01  | 4.84  | 10.85 |
| HybriForce 420/wet | 2.85  | 1.90  | 1.19  | 5.94  | 4.89  | 10.83 |
| DKA42-15           | 2.86  | 1.85  | 1.23  | 5.94  | 4.72  | 10.66 |
| Rebound 5.0        | 2.69  | 1.89  | 1.19  | 5.78  | 4.57  | 10.35 |
| Vernal             | 2.74  | 1.70  | 1.16  | 5.60  | 4.51  | 10.11 |
| Mean               | 2.86  | 1.87  | 1.21  | 5.94  | 4.78  | 10.73 |
| CV%                | 9     | 10    | 9     | 8     | 9     | 8     |
| LSD 5%             |       |       |       | 0.5   | NS    | NS    |
| MCV (%)            |       |       |       |       |       |       |
| LSR (%)            |       |       |       |       |       |       |

Location: Lake City Exp. Station, Lake City  
 Design: RCB, plot size: 3 x 23'(3 x20' harvested)  
 Seeded: 29-May-04  
 Soil Type: Kent Silt loam  
 Cuttings: three in 2005  
 Fertility: 0-65-195 + 2.5 boron lbs./acre



Table 7.

**Michigan State Alfalfa Variety Trial Yields (DM tons/acre)**  
**Lake City, Missaukee Co., Mich. State Univ.**

Sown May 2005

Non-irrigated

| Entry         | 8-Jun | 9-Jul | 9-Aug | 2006<br>Total |
|---------------|-------|-------|-------|---------------|
| 4A421         | 1.87  | 1.14  | 0.78  | 3.80          |
| Pioneer 54V46 | 1.92  | 1.05  | 0.79  | 3.76          |
| 4S419         | 1.77  | 0.99  | 0.83  | 3.60          |
| Saranac       | 1.76  | 0.95  | 0.76  | 3.47          |
| Pioneer 53Q30 | 1.76  | 0.97  | 0.73  | 3.46          |
| Vernal        | 1.74  | 0.92  | 0.70  | 3.36          |

|        |      |      |      |      |
|--------|------|------|------|------|
| Mean   | 1.80 | 1.00 | 0.77 | 3.58 |
| CV%    | 10   | 12   | 15   | 10   |
| LSD 5% | NS   | 0.18 | NS   | NS   |

MCV (%)

LSR (%)

Location: Lake City Exp. Station, Lake City  
 Design: RCB, plot size: 3 x 23'(3 x20' harvested)  
 Seeded: 27-May-05  
 Soil Type: Kent Silt loam  
 Cuttings: one cutting in seeding year  
 Fertility: 0-65-195 + 2.5 boron lbs./acre

Table 8.  
**Michigan State Alfalfa Variety Trial Yields (DM tons/acre)**  
**Lake City, Missaukee Co., Mich. State Univ.**  
 Sown May 2006  
 Non-irrigated

| Entry         | 24-Jul | 6-Sep | 2006<br>Total |
|---------------|--------|-------|---------------|
| FSG406        | 1.33   | 0.98  | 2.31          |
| FSG351        | 1.22   | 0.96  | 2.18          |
| FSG505        | 1.32   | 0.85  | 2.17          |
| IML04         | 1.1    | 0.96  | 2.06          |
| DS417         | 1.12   | 0.93  | 2.05          |
| DS615         | 1.02   | 0.83  | 1.85          |
| FSG408DP      | 0.96   | 0.88  | 1.84          |
| RadiantAM     | 0.8    | 0.93  | 1.73          |
| Vernal        | 0.91   | 0.81  | 1.72          |
| DS616         | 0.89   | 0.83  | 1.72          |
| Pioneer 54V46 | 0.93   | 0.70  | 1.63          |
| Pioneer 53Q30 | 0.73   | 0.72  | 1.45          |
| Mean          | 1.03   | 0.83  | 1.89          |
| CV%           | 33     | 20    | 25            |
| LSD 5%        | 0.46   | 0.23  | 0.66          |
| MCV (%)       |        |       | 34            |
| LSR (%)       |        |       | 77            |

Location: Lake City Exp. Station, Lake City  
 Design: RCB, plot size: 3 x 23'(3 x20' harvested)  
 Seeded: 8-May-06  
 Soil Type: Kent Silt loam  
 Fertility: 0-65-195 + 2.5 boron lbs./acre

Table 9.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**Saginaw, Saginaw Co.**  
 Sown April 2004  
 Non-irrigated

| Entry              | 5-Jun | 3-Jul | 8-Aug | 16-Oct | 2006  | 2005  | 2004  | 3-yr. |
|--------------------|-------|-------|-------|--------|-------|-------|-------|-------|
|                    |       |       |       |        | Total | Total | Total | Total |
| Genoa              | 3.17  | 1.82  | 1.51  | 0.89   | 7.39  | 7.34  | 3.62  | 18.35 |
| HybriForce 420/WET | 3.07  | 1.55  | 1.55  | 1.07   | 7.24  | 6.91  | 3.91  | 18.06 |
| SummerGold         | 3.25  | 1.61  | 1.58  | 0.93   | 7.37  | 7.06  | 3.55  | 17.98 |
| WL 357 HQ          | 3.22  | 1.67  | 1.54  | 0.91   | 7.34  | 7.01  | 3.54  | 17.89 |
| Pioneer 54Q25      | 3.07  | 1.65  | 1.63  | 0.89   | 7.24  | 6.74  | 3.64  | 17.62 |
| DKA 42-15          | 3.41  | 1.55  | 1.53  | 0.87   | 7.36  | 6.81  | 3.41  | 17.58 |
| Pioneer 54V46      | 3.24  | 1.55  | 1.55  | 0.86   | 7.20  | 6.75  | 3.35  | 17.30 |
| Garst 6420         | 3.06  | 1.49  | 1.52  | 0.96   | 7.03  | 6.51  | 3.70  | 17.24 |
| Rebound 5.0        | 3.17  | 1.63  | 1.50  | 0.96   | 7.26  | 6.71  | 3.25  | 17.22 |
| Rebel              | 3.15  | 1.48  | 1.49  | 0.88   | 7.00  | 6.56  | 3.48  | 17.04 |
| Vernal             | 3.21  | 1.44  | 1.43  | 0.89   | 6.97  | 6.51  | 3.49  | 16.97 |
| Garst 6200 HT      | 2.89  | 1.46  | 1.41  | 0.84   | 6.60  | 6.60  | 3.63  | 16.83 |
| LegenDairy 5.0     | 3.05  | 1.61  | 1.52  | 0.78   | 6.96  | 6.67  | 3.16  | 16.79 |
| Rugged             | 2.97  | 1.36  | 1.36  | 0.76   | 6.45  | 6.25  | 3.34  | 16.04 |
| Saranac            | 3.02  | 1.26  | 1.34  | 0.73   | 6.35  | 6.15  | 3.46  | 15.96 |
| Mean               | 3.13  | 1.54  | 1.50  | 0.88   | 7.05  | 6.70  | 3.50  | 17.26 |
| CV%                | 8     | 8     | 7     | 11     | 5     | 6     | 7     | 5     |
| LSD 5%             | 0.31  | 0.15  | 0.12  | 0.12   | 0.47  | 0.47  | 0.31  | 1.01  |
| MCV (%)            |       |       |       |        | 7     | 7     | 9     | 6     |
| LSR (%)            |       |       |       |        | 46    | 39    | 41    | 42    |

Location: Saginaw Research Farm, Saginaw  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: April 7, 2004 (20 lbs. PLS/A.)  
 Soil Type: Misteguay silty clay  
 Insects: Baythroid applied prior to cut 2 and cut 3  
 Cuttings: Three in 2004, four in 2005  
 Fertility: 0-84-242 applied following cut 3

Table 10.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**East Lansing, Ingham Co.**  
 Sown June 2003  
 Non-irrigated

| Entry              | 31-May | 29-Jun | 31-Jul | 31-Aug | 2006  | 2005  | 2004  | 3-yr. | final                  |
|--------------------|--------|--------|--------|--------|-------|-------|-------|-------|------------------------|
|                    |        |        |        |        | Total | Total | Total | Total | plant                  |
| DM tons/acre       |        |        |        |        |       |       |       |       | counts                 |
|                    |        |        |        |        |       |       |       |       | plants/ft <sup>2</sup> |
| Garst 6415         | 2.57   | 1.73   | 1.83   | 1.32   | 7.45  | 10.18 | 8.41  | 26.04 | 5.7                    |
| WL 357 HQ          | 2.73   | 1.77   | 1.79   | 1.28   | 7.57  | 10.16 | 8.17  | 25.90 | 6.3                    |
| DKA50-18           | 2.56   | 1.80   | 1.89   | 1.33   | 7.58  | 9.85  | 8.33  | 25.76 | 8.7                    |
| DKA33-16           | 2.87   | 1.65   | 1.84   | 1.29   | 7.65  | 10.02 | 8.07  | 25.74 | 5.7                    |
| Pioneer 54V46      | 2.66   | 1.71   | 1.73   | 1.21   | 7.31  | 9.57  | 8.07  | 24.95 | 6.7                    |
| Alfatar II         | 2.78   | 1.53   | 1.64   | 1.14   | 7.09  | 9.31  | 7.98  | 24.38 | 4.7                    |
| Power 4.2          | 2.57   | 1.53   | 1.59   | 1.18   | 6.87  | 9.15  | 8.20  | 24.22 | 6.7                    |
| Phabulous II       | 2.45   | 1.55   | 1.62   | 1.23   | 6.85  | 9.27  | 7.85  | 23.97 | 6.3                    |
| DS322**            | 2.74   | 1.41   | 1.48   | 1.07   | 6.70  | 8.81  | 8.18  | 23.69 | 7.3                    |
| Extreme            | 2.58   | 1.42   | 1.58   | 1.12   | 6.70  | 8.99  | 7.95  | 23.64 | 5.3                    |
| Pioneer 54Q25      | 2.39   | 1.37   | 1.58   | 1.12   | 6.46  | 8.50  | 8.01  | 22.97 | 9.0                    |
| Dakota             | 2.37   | 1.35   | 1.57   | 1.08   | 6.37  | 8.65  | 7.84  | 22.86 | 6.0                    |
| HybriForce 420/Wet | 2.59   | 1.36   | 1.49   | 1.07   | 6.51  | 8.48  | 7.73  | 22.72 | 6.0                    |
| Everlast           | 2.40   | 1.39   | 1.45   | 1.10   | 6.34  | 8.41  | 7.62  | 22.37 | 7.3                    |
| Dak 9900**         | 2.51   | 1.27   | 1.50   | 1.05   | 6.33  | 8.34  | 7.70  | 22.37 | 5.3                    |
| DS320**            | 2.34   | 1.32   | 1.37   | 1.04   | 6.07  | 8.98  | 7.30  | 22.35 | 5.7                    |
| DS323**            | 2.48   | 1.28   | 1.45   | 1.00   | 6.21  | 8.19  | 7.39  | 21.79 | 4.3                    |
| DS321**            | 2.36   | 0.99   | 1.38   | 1.04   | 5.77  | 8.60  | 7.38  | 21.75 | 5.7                    |
| Cimarron VL400*    | 2.55   | 1.10   | 1.30   | 0.89   | 5.84  | 8.16  | 7.67  | 21.67 | 4.7                    |
| Nova*              | 2.41   | 1.15   | 1.48   | 0.94   | 5.98  | 7.87  | 7.78  | 21.63 | 6.7                    |
| Phirst             | 2.31   | 1.21   | 1.34   | 0.97   | 5.83  | 8.06  | 7.51  | 21.40 | 5.0                    |
| Vernal             | 2.11   | 0.90   | 1.16   | 0.64   | 4.81  | 6.34  | 6.58  | 17.73 | 2.7                    |
| Skriveru           | 1.91   | 0.70   | 1.00   | 0.54   | 4.15  | 5.34  | 5.70  | 15.19 | 3.7                    |
| Mean               | 2.49   | 1.37   | 1.53   | 1.07   | 6.45  | 8.66  | 7.71  | 22.83 | 5.9                    |
| CV%                | 10     | 12     | 9      | 9      | 7     | 7     | 5     | 5     | 31                     |
| LSD 5%             | 0.35   | 0.23   | 0.18   | 0.13   | 0.63  | 0.80  | 0.58  | 1.64  | 3.0                    |
| MCV (%)            |        |        |        |        | 10    | 9     | 8     | 7     |                        |
| LSR (%)            |        |        |        |        | 18    | 17    | 21    | 17    |                        |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: June 2003 (20 lbs PLS/A)  
 Soil Type: Capac loam, tile drainage  
 Insects: Baythroid applied prior to cut 2 & 3  
 Cuttings: clipped for weed control in 2003, four in 2004 and five in 2005  
 Fertility: 0-104-312 + 4 boron lbs/acre  
 \*Cultivar was seeded from experimental seed  
 \*\*Experimental cultivar

Table 11

**Michigan State Alfalfa Variety Trial**  
**East Lansing Potato Leafhopper-resistant Variety Trial**  
 Sown June 2003

| Entry         | DM tons/acre |        |        |        |       |       |       |       | Hopperburn rating* |       |
|---------------|--------------|--------|--------|--------|-------|-------|-------|-------|--------------------|-------|
|               | 31-May       | 28-Jun | 31-Jul | 31-Aug | 2006  | 2005  | 2004  | 3-yr. |                    |       |
|               |              |        |        |        | Total | Total | Total | Total | cut 2              | cut 3 |
| WL 346 LH     | 2.15         | 1.35   | 1.15   | 1.17   | 5.82  | 8.02  | 8.00  | 21.84 | 1.0                | 1.0   |
| EverGreen2    | 2.12         | 1.28   | 1.10   | 1.01   | 5.51  | 7.68  | 7.99  | 21.18 | 1.0                | 1.0   |
| Pioneer 54H91 | 2.34         | 1.28   | 1.02   | 1.05   | 5.69  | 7.34  | 7.37  | 20.40 | 2.0                | 1.3   |
| 4375LH        | 2.03         | 1.19   | 1.05   | 0.97   | 5.24  | 7.17  | 7.29  | 19.70 | 1.5                | 1.0   |
| Garst 6325    | 2.32         | 1.1    | 0.83   | 0.93   | 5.18  | 7.09  | 6.93  | 19.20 | 3.3                | 4.8   |
| Vernal        | 2.35         | 0.88   | 0.71   | 0.77   | 4.71  | 6.37  | 5.50  | 16.58 | 5.5                | 8.0   |
| Mean          | 2.22         | 1.18   | 0.98   | 0.98   | 5.36  | 7.28  | 7.18  | 19.80 | 2.4                | 2.9   |
| CV (%)        | 8            | 7      | 8      | 8      | 6     | 5     | 5     | 4     | 17                 | 22    |
| LSD(5%)       | 0.27         | 0.12   | 0.12   | 0.12   | 0.46  | 0.58  | 0.54  | 1.27  | 0.6                | 0.9   |
| MCV (%)       |              |        |        |        | 9     | 8     | 8     | 6     |                    |       |
| LSR (%)       |              |        |        |        | 41    | 35    | 21    | 24    |                    |       |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: 6/1/2003 (20 lbs PLS/A)  
 Cuttings: clipped for weed control in 2003, four in 2004 and five in 2005  
 Insects: No insecticide applied, moderate PLH pressure in 2006  
 Fertility: 0-78-234 + 3 boron lbs/acre  
 \* Hopperburn rating 1 to 9 (1=no burn)

Table 12.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**East Lansing, Ingham Co.**  
 Sown Apr 2004  
 Non-irrigated

| Entry                   | 1-Jun | 29-Jun | 31-Jul | 8-Sep | 2006  | 2005  | 2-yr. |
|-------------------------|-------|--------|--------|-------|-------|-------|-------|
|                         |       |        |        |       | Total | Total | Total |
| Genoa                   | 2.82  | 1.70   | 1.64   | 1.64  | 7.80  | 8.80  | 16.60 |
| Rebound 5.0             | 2.91  | 1.64   | 1.55   | 1.55  | 7.65  | 8.27  | 15.92 |
| 41M130**                | 2.76  | 1.65   | 1.64   | 1.64  | 7.69  | 8.19  | 15.88 |
| 41M120**                | 2.75  | 1.69   | 1.54   | 1.54  | 7.52  | 8.35  | 15.87 |
| HybriForce 420/wet      | 2.70  | 1.45   | 1.49   | 1.49  | 7.13  | 8.63  | 15.76 |
| WL 335 HQ               | 3.04  | 1.57   | 1.49   | 1.49  | 7.59  | 7.71  | 15.30 |
| SummerGold              | 2.68  | 1.57   | 1.49   | 1.49  | 7.23  | 7.89  | 15.12 |
| Pioneer 54Q25           | 2.72  | 1.45   | 1.43   | 1.43  | 7.03  | 8.07  | 15.10 |
| WL 348 AP               | 2.57  | 1.55   | 1.53   | 1.53  | 7.18  | 7.87  | 15.05 |
| DKA42-15                | 2.85  | 1.55   | 1.55   | 1.55  | 7.50  | 7.54  | 15.04 |
| Pioneer 54V46           | 2.49  | 1.58   | 1.40   | 1.40  | 6.87  | 8.12  | 14.99 |
| Brown Seed 377 Hybrid** | 2.95  | 1.38   | 1.47   | 1.47  | 7.27  | 7.58  | 14.85 |
| Garst 6420              | 2.53  | 1.33   | 1.40   | 1.40  | 6.66  | 7.44  | 14.10 |
| Rebel                   | 2.72  | 1.21   | 1.29   | 1.29  | 6.51  | 7.10  | 13.61 |
| Rugged                  | 2.38  | 1.16   | 1.28   | 1.28  | 6.10  | 6.75  | 12.85 |
| Saranac                 | 2.25  | 1.10   | 1.14   | 1.14  | 5.63  | 6.17  | 11.80 |
| Vernal                  | 2.48  | 1.01   | 1.09   | 1.09  | 5.67  | 6.10  | 11.77 |
| Mean                    | 2.67  | 1.42   | 1.42   | 1.44  | 7.00  | 7.62  | 14.68 |
| CV%                     | 9     | 10     | 6      | 6     | 6     | 6     | 5     |
| LSD 5%                  | 0.34  | 0.20   | 0.12   | 0.11  | 0.59  | 0.63  | 1.05  |
| MCV (%)                 |       |        |        |       | 8     | 8     | 7     |
| LSR (%)                 |       |        |        |       | 28    | 23    | 22    |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: 4/9/2004 (20 lbs PLS/A)  
 Soil Type: Capac loam, tile drainage  
 Cuttings: Three in 2004 (yield not included due to high CV%), five in 2005  
 Fertility: 0-78-234 + 3 boron lbs/acre  
 Insects: Baythroid applied prior to and after to cut one  
 \*\*Experimental Cultivar

Table 13.

**Michigan State Alfalfa Variety Trial**  
**East Lansing Potato Leafhopper-Resistant Alfalfa Trial**  
 Sown Apr 2004  
 Non-irrigated

| Entry         | DM tons/acre |        |        |       |               |               |               |                | Hopperburn rating* |       |
|---------------|--------------|--------|--------|-------|---------------|---------------|---------------|----------------|--------------------|-------|
|               | 1-Jun        | 29-Jun | 31-Jul | 8-Sep | 2006<br>Total | 2005<br>Total | 2004<br>Total | 3-yr.<br>Total | cut 2              | cut 3 |
| 42H169**      | 2.47         | 1.45   | 1.19   | 1.13  | 6.24          | 7.06          | 2.73          | 16.03          | 1.0                | 1.0   |
| Pioneer 54H91 | 2.72         | 1.35   | 1.09   | 0.98  | 6.14          | 6.38          | 2.77          | 15.29          | 2.0                | 1.0   |
| 42H153**      | 2.21         | 1.44   | 1.14   | 1.00  | 5.79          | 6.85          | 2.31          | 14.95          | 1.0                | 1.0   |
| Garst 6325    | 2.46         | 1.28   | 0.95   | 0.95  | 5.64          | 6.17          | 2.77          | 14.58          | 1.0                | 2.8   |
| Vernal        | 2.44         | 1.01   | 0.68   | 0.84  | 4.97          | 5.90          | 2.24          | 13.11          | 2.5                | 6.8   |
| Saranac       | 2.43         | 1.01   | 0.72   | 0.78  | 4.94          | 5.67          | 2.13          | 12.74          | 1.5                | 6.8   |
| Mean          | 2.45         | 1.25   | 0.96   | 0.95  | 5.62          | 6.34          | 2.49          | 14.45          | 1.5                | 3.2   |
| CV%           | 9            | 9      | 10     | 10    | 7             | 5             | 8             | 4              | 38                 | 14    |
| LSD 5%        | 0.34         | 0.17   | 0.15   | 0.14  | 0.59          | 0.40          | 0.30          | 0.84           | 0.87               | 0.68  |
| MCV%          |              |        |        |       | 10            | 6             | 12            | 12             |                    |       |
| LSR%          |              |        |        |       | 45            | 28            | 47            | 25             |                    |       |

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

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

Seeded: 4/9/2004 (20 lbs PLS/A)

Soil Type: Capac loam, tile drainage

Insects: moderate PLH pressure in 2006

Fertility: 0-78-234 + 3 boron lbs/acre

Cuttings: three in the seeding year, five in 2005

\* Hopperburn rating 1 to 9 (1=no burn)

\*\* Experimental Cultivar

Table 14.

**Michigan State Alfalfa Variety Trial Yield (DM tons/acre)**  
**East Lansing, Ingham Co.**  
 Sown Apr 2005  
 Non-irrigated

| Entry               | 2-Jun | 29-Jun | 1-Aug | 5-Sep | 2006<br>Total | 2005<br>Total | 2-yr.<br>Total |
|---------------------|-------|--------|-------|-------|---------------|---------------|----------------|
| Pioneer 54V46       | 2.81  | 2.18   | 1.91  | 1.39  | 8.29          | 1.30          | 9.59           |
| MS-Sunstra-506**    | 2.97  | 1.96   | 1.85  | 1.42  | 8.20          | 1.27          | 9.47           |
| MS-Sunstra-507**    | 2.77  | 1.98   | 1.90  | 1.43  | 8.08          | 1.28          | 9.36           |
| Garst 6415          | 2.61  | 2.05   | 1.88  | 1.39  | 7.93          | 1.28          | 9.21           |
| 4s419               | 2.65  | 2.04   | 1.79  | 1.42  | 7.90          | 1.28          | 9.18           |
| Genoa               | 2.55  | 2.05   | 1.76  | 1.37  | 7.73          | 1.40          | 9.13           |
| GH717               | 2.45  | 2.09   | 1.77  | 1.40  | 7.71          | 1.42          | 9.13           |
| Shepherd            | 2.52  | 2.10   | 1.67  | 1.36  | 7.65          | 1.42          | 9.07           |
| 4A421               | 2.60  | 1.96   | 1.86  | 1.37  | 7.79          | 1.27          | 9.06           |
| MS-Sunstra-505**    | 2.58  | 1.98   | 1.80  | 1.34  | 7.70          | 1.29          | 8.99           |
| 362HY**             | 2.88  | 1.79   | 1.78  | 1.31  | 7.76          | 1.14          | 8.90           |
| DS204 Hyb           | 2.44  | 1.90   | 1.60  | 1.37  | 7.31          | 1.46          | 8.77           |
| Integrity           | 2.72  | 1.66   | 1.74  | 1.20  | 7.32          | 1.42          | 8.74           |
| Labrador            | 2.64  | 1.48   | 1.83  | 1.35  | 7.30          | 1.39          | 8.69           |
| AA104E**            | 2.42  | 1.78   | 1.62  | 1.26  | 7.08          | 1.42          | 8.50           |
| Pioneer 53Q30       | 2.30  | 1.79   | 1.81  | 1.28  | 7.18          | 1.21          | 8.39           |
| Garst 6400HT        | 2.58  | 1.66   | 1.62  | 1.14  | 7.00          | 1.30          | 8.30           |
| Vernal              | 2.53  | 1.41   | 1.54  | 1.02  | 6.50          | 1.02          | 7.52           |
| Yellowhead          | 2.20  | 0.97   | 1.34  | 0.77  | 5.28          | 0.89          | 6.17           |
| Non-dormant alfalfa | 1.29  | 1.05   | 1.31  | 0.80  | 4.45          | 1.10          | 5.55           |
| Mean                | 2.52  | 1.79   | 1.72  | 1.27  | 7.31          | 1.28          | 8.59           |
| CV%                 | 9     | 15     | 9     | 6     | 7             | 13            | 6              |
| LSD 5%              | 0.32  | 0.37   | 0.22  | 0.10  | 0.68          | 0.24          | 0.69           |
| MCV (%)             |       |        |       |       | 9             | 19            | 8              |
| LSR (%)             |       |        |       |       | 18            | 42            | 13             |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: 4/19/2005 (18 lbs PLS/A)  
 Soil Type: Capac loam, tile drainage  
 Cuttings: one in 2005  
 Fertility: 0-78-234 + 3 boron lbs/acre  
 Insects: Sevin applied after cuts one and two  
 \*\*Experimental Cultivar



Table 15.

**Michigan State Alfalfa Variety Trial**  
**East Lansing Potato Leafhopper-Resistant Alfalfa Trial**  
 Sown April 2005  
 Non-irrigated

| Entry         | DM tons/acre |        |       |       |            | Hopperburn rating* |       |
|---------------|--------------|--------|-------|-------|------------|--------------------|-------|
|               | 2-Jun        | 29-Jun | 1-Aug | 5-Sep | 2006 Total | cut 2              | cut 3 |
| WL 347 LH     | 2.58         | 1.48   | 1.31  | 1.39  | 6.76       | 1.0                | 1.5   |
| FG 43H178     | 2.36         | 1.59   | 1.39  | 1.33  | 6.67       | 1.0                | 1.0   |
| Evergreen 2   | 2.45         | 1.40   | 1.34  | 1.34  | 6.53       | 1.0                | 2.0   |
| Pioneer 54H91 | 2.62         | 1.30   | 1.25  | 1.29  | 6.46       | 1.0                | 1.0   |
| Vernal        | 2.62         | 1.07   | 1.03  | 1.17  | 5.89       | 3.5                | 6.0   |
| Mean          | 2.53         | 1.38   | 1.26  | 1.30  | 6.46       | 1.5                | 2.3   |
| CV%           | 10           | 7      | 10    | 5     | 5          |                    |       |
| LSD 5%        | NS           | 0.13   | 0.19  | 0.11  | 0.53       |                    |       |
| MCV%          |              |        |       |       | 8          |                    |       |
| LSR%          |              |        |       |       | 61         |                    |       |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 24' (3 x 21' harvested)  
 Seeded: 19-Apr-05  
 Soil Type: Capac loam, tile drainage  
 Insects: moderate PLH pressure in 2006  
 Fertility: 0-78-234 + 3 boron lbs/acre  
 Cuttings: one in seeding year

\* Hopperburn rating 1 to 9 (1=no burn)

Table 16. Michigan State Alfalfa Variety Trial Yield (DM tons/acre)  
East Lansing, Ingham Co., Sown Apr 2006, Non-irrigated

| Entry            | 13-Jul | 14-Aug | 10-Oct | Total<br>2006 |
|------------------|--------|--------|--------|---------------|
| DS304 HYB*       | 1.82   | 1.82   | 0.93   | 4.57          |
| FSG 351          | 1.75   | 1.78   | 0.90   | 4.43          |
| msSunstra-602*   | 1.67   | 1.72   | 0.92   | 4.31          |
| GH727            | 1.68   | 1.81   | 0.76   | 4.25          |
| DS417*           | 1.64   | 1.66   | 0.86   | 4.16          |
| Garst 6420       | 1.53   | 1.72   | 0.91   | 4.16          |
| Ascend           | 1.53   | 1.71   | 0.89   | 4.13          |
| DKA41-18RR       | 1.65   | 1.72   | 0.70   | 4.07          |
| FG 43M127*       | 1.60   | 1.75   | 0.71   | 4.06          |
| IML04*           | 1.56   | 1.65   | 0.82   | 4.03          |
| FSG 505          | 1.34   | 1.73   | 0.91   | 3.98          |
| WL 355 RR        | 1.52   | 1.67   | 0.76   | 3.95          |
| FG 44M123*       | 1.54   | 1.72   | 0.69   | 3.95          |
| msSunstra-604*   | 1.37   | 1.71   | 0.84   | 3.92          |
| msSunstra-601*   | 1.41   | 1.67   | 0.83   | 3.91          |
| FSG 406          | 1.52   | 1.63   | 0.75   | 3.90          |
| FG 44M336*       | 1.52   | 1.62   | 0.71   | 3.85          |
| DKA34-17RR       | 1.59   | 1.61   | 0.62   | 3.82          |
| CW 25037*        | 1.37   | 1.64   | 0.79   | 3.80          |
| Garst 6415       | 1.44   | 1.62   | 0.71   | 3.77          |
| msSunstra-603*   | 1.37   | 1.61   | 0.78   | 3.76          |
| Ameristand 407TQ | 1.28   | 1.72   | 0.72   | 3.72          |
| ZG9830           | 1.47   | 1.57   | 0.66   | 3.70          |
| CW 25006*        | 1.30   | 1.60   | 0.76   | 3.66          |
| Mountaineer 2.0  | 1.21   | 1.62   | 0.78   | 3.61          |
| Pioneer 54V46    | 1.18   | 1.64   | 0.70   | 3.52          |
| FSG 408DP        | 1.21   | 1.48   | 0.70   | 3.39          |
| Pioneer 53Q30    | 1.04   | 1.52   | 0.67   | 3.23          |
| Radiant-AM       | 1.01   | 1.45   | 0.77   | 3.23          |
| WL 343HQ         | 1.05   | 1.52   | 0.64   | 3.21          |
| Yellowhead(06)   | 1.25   | 1.38   | 0.57   | 3.20          |
| Vernal           | 1.12   | 1.40   | 0.64   | 3.16          |
| Yellowhead(05)   | 1.38   | 1.30   | 0.47   | 3.15          |
| CW 24025*        | 0.98   | 1.42   | 0.73   | 3.13          |
| 4G418RR          | 0.97   | 1.45   | 0.63   | 3.05          |
| Anik             | 0.23   | 0.50   | 0.12   | 0.85          |

Mean 1.36 1.59 0.73 3.68

CV% 29 14 13 18

LSD 5% 0.54 0.30 0.13 0.90

MCV (%) 24

LSR (%) 24

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

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

Seeded/ Soil Type: 4/19/2006 Capac loam, tile drainage

Insects: Sevin applied prior to cuts one and two

\*Experimental Cultivar

Table 17.

**Michigan State Alfalfa Variety Trial Yield**  
**East Lansing Potato Leafhopper-Resistant Alfalfa Trial**  
 Sown Apr 2006  
 Non-irrigated

| Entry         | DM tons / acre |        |        |            | Hopperburn rating* |       |
|---------------|----------------|--------|--------|------------|--------------------|-------|
|               | 13-Jul         | 10-Aug | 16-Oct | 2006 Total | cut 1              | cut 2 |
| Pioneer 53H92 | 0.67           | 1.38   | 0.45   | 2.50       | 1.5                | 1.0   |
| Garst 6426    | 0.63           | 1.29   | 0.50   | 2.42       | 2.3                | 1.3   |
| FSG400LH      | 0.67           | 1.30   | 0.44   | 2.41       | 2.8                | 1.3   |
| 4P424         | 0.61           | 1.34   | 0.44   | 2.39       | 1.8                | 1.0   |
| Vernal        | 0.21           | 0.72   | 0.49   | 1.41       | 8.8                | 7.5   |
| Mean          | 0.56           | 1.21   | 0.46   | 2.23       | 3.4                | 2.4   |
| CV%           | 43             | 17     | 18     | 16         | 15.0               | 15.0  |
| LSD 5%        | 0.31           | 0.27   | 0.12   | 0.49       | 1.0                | 0.7   |
| MCV (%)       |                |        |        | 24         |                    |       |
| LSR (%)       |                |        |        | 41         |                    |       |

Location: Mich. State Univ. Exp. Station, East Lansing  
 Design: RCB, plot size 3 x 25' (3 x 22' harvested)  
 Seeded: 4/19/2006  
 Soil Type: Capac loam, tile drainage

\* Hopperburn rating 1 to 9 (1=no burn)