

## Alfalfa

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Yield is the single largest determinant of return per acre for alfalfa production. Selecting alfalfa varieties with high yield potential is fundamental to obtaining high yields. The yield advantage realized with good alfalfa varieties quickly trivializes their greater seed cost.

Yield potential of alfalfa varieties is evaluated in trial plots at University of Minnesota Research and Outreach Centers and on cooperating farmers' fields. Trials are conducted using recommended fertility and pest control practices to optimize alfalfa yield and persistence.

Yield performance of tested varieties is presented as a percentage of check variety yields (average for Vernal, Oneida VR, and 5312). Test locations are representative of the



Locations of alfalfa trials.

variable winter injury risk in different regions of Minnesota. Test locations include Rosemount (Dakota Co.), Zumbro Falls (Wabasha Co.), Lamberton (Redwood Co.), St. Martin and Richmond (Stearns Co.), Underwood (Otter Tail Co.) and Grand Rapids (Itasca Co.). In addition, some alfalfa varieties are tested for forage quality at Rosemount.

Yield results for alfalfa varieties tested in current Minnesota yield trials (2004 to 2007 seeding years) are listed in Tables 1 through 4.

Varieties in current forage quality and potato leafhopper trials are listed in Tables 5 and 6. Alfalfa variety seed marketers and matching web sites are provided in Table 7. Disease resistance information for alfalfa varieties is available on the web at [www.alfalfa.org](http://www.alfalfa.org).

### Winterhardiness and Winter Survival Index

Severe winters make winterhardiness a primary consideration in variety selection for most areas of Minnesota. Winterhardiness of varieties is difficult to determine because winter injury can occur as a result of many different weather events that cause varied responses in alfalfa plants of differing ages. A standardized test, the North American Alfalfa Improvement Conference (NAAIC) Winter Survival Test, measures the survival of a variety after a severe winter.

The WSI for each tested variety was averaged over all test locations and years to provide a robust estimate of winterhardiness and is presented beside the yield data in Tables 1 through 4. Varieties are rated from Superior (WSI=1) to No Survival (WSI=6) for winter survival ability. Vernal, a traditional winterhardy variety, is rated Very Good (WSI=2). After a severe winter, injury is expected for varieties rated Adequate (WSI=4).



All varieties tested to date have rated above Adequate. If a variety does not have a WSI, the company has not entered the variety in the Winter Survival Trial. If a WSI number is not available, yield performance in the third production year after seeding may be the next best indicator of winter survival potential. Fall dormancy rating used to be a good indicator of winter survival potential, but this is no longer the case with modern varieties.

When selecting alfalfa varieties for your farm, greatest winterhardiness is needed in west central and northwestern Minnesota (see winter injury potential map). Because of the high frequency of severe winters only varieties with at least Very Good (WSI~2) winter survival should be selected in these areas. East central and southeastern Minnesota also frequently experience severe winters. Southwestern Minnesota seldom experiences severe winter injury because of dry soils, high soil potassium levels and neutral soil pH. Northeastern Minnesota seldom experiences severe winter injury because of dependable snow cover.

### Forage Yield

Yield results for alfalfa varieties tested in current Minnesota trials are presented in Tables 1 to 4. Yields are expressed as a percentage of check variety yields; for example,



**Table 1. Alfalfa variety yield as percentage of check varieties at Rosemount (Dakota County).**

Variety, in descending order of average performance over all current Minn. trials. **Bold** varieties have been in Minn. trials for more than 5 site-years.

|                               | Marketer   | WSI | 2004 Seeding,<br>Harvest Years |            |            |              | 2005 Seeding,<br>Harvest Years |            |              | 2006 Seeding,<br>Harvest Year | Total Years,<br>Average |
|-------------------------------|------------|-----|--------------------------------|------------|------------|--------------|--------------------------------|------------|--------------|-------------------------------|-------------------------|
|                               |            |     | 2007                           | 2006       | 2005       | 3-Year Total | 2007                           | 2006       | 2-Year Total | 1-Year Total                  |                         |
| <i>Checks, Tons/Ac as Hay</i> |            |     | <i>6.4</i>                     | <i>7.2</i> | <i>6.9</i> | <i>20.5</i>  | <i>7.2</i>                     | <i>6.6</i> | <i>13.8</i>  | <i>6.7</i>                    | <i>6.5</i>              |
| <b>45419</b>                  | DairyLand  | -   | -                              | -          | -          | -            | 120                            | 112        | 116          | -                             | 113                     |
| L-311                         | Legacy     | -   | -                              | -          | -          | -            | 115                            | 112        | 113          | -                             | 113                     |
| <b>LIGHTNING III</b>          | Jung       | 2.5 | 108                            | 119        | 105        | 111          | -                              | -          | -            | -                             | 112                     |
| <b>REBOUND 5.0</b>            | CropLan    | 2.5 | 108                            | 110        | 103        | 107          | -                              | -          | -            | -                             | 112                     |
| WL 348 AP                     | W-L        | 2.0 | -                              | -          | -          | -            | 108                            | 114        | 111          | -                             | 111                     |
| MARVEL                        | Albert Lea | -   | -                              | -          | -          | -            | 112                            | 110        | 111          | -                             | 111                     |
| ESCALADE                      | Allied     | -   | -                              | -          | -          | -            | 111                            | 110        | 111          | -                             | 111                     |
| MARINER III                   | Allied     | -   | -                              | -          | -          | -            | -                              | -          | -            | 110                           | 110                     |
| <b>6415</b>                   | Garst      | 2.0 | 112                            | 117        | 106        | 112          | 111                            | 104        | 108          | 98                            | 110                     |
| MILESTONE                     | FFR        | -   | -                              | -          | -          | -            | 111                            | 111        | 111          | -                             | 110                     |
| MAGNUM VI                     | DairyLand  | -   | -                              | -          | -          | -            | -                              | -          | -            | 113                           | 109                     |
| <b>GENOA</b>                  | NK Brand   | 2.0 | 100                            | 111        | 100        | 104          | -                              | -          | -            | 109                           | 109                     |
| SUMMERGOLD                    | Renk       | -   | 110                            | 113        | 102        | 109          | -                              | -          | -            | -                             | 109                     |
| PERFORM                       | DairyLand  | -   | -                              | -          | -          | -            | -                              | -          | -            | 106                           | 109                     |
| <b>6420</b>                   | Garst      | -   | -                              | -          | -          | -            | 104                            | 106        | 105          | -                             | 108                     |
| ENFORCER                      | FFR        | -   | -                              | -          | -          | -            | 109                            | 105        | 107          | -                             | 107                     |
| <b>54V46</b>                  | Pioneer    | 3.0 | 104                            | 110        | 102        | 105          | 116                            | 115        | 115          | 102                           | 107                     |
| INTEGRITY                     | PGI        | -   | -                              | -          | -          | -            | 112                            | 109        | 110          | -                             | 107                     |
| GOLDLEAF                      | Albert Lea | 3.0 | -                              | -          | -          | -            | 106                            | 106        | 106          | -                             | 106                     |
| DKA42-15                      | DeKalb     | 2.5 | 107                            | 107        | 102        | 106          | -                              | -          | -            | -                             | 106                     |
| 5312                          | Check      | -   | 105                            | 106        | 102        | 105          | 105                            | 103        | 104          | 107                           | 105                     |
| PHABULOUS II                  | Trelay     | -   | 104                            | 104        | 106        | 105          | -                              | -          | -            | -                             | 105                     |
| <b>54Q25</b>                  | Pioneer    | -   | 103                            | 110        | 99         | 104          | -                              | -          | -            | -                             | 105                     |
| <b>53Q30</b>                  | Pioneer    | -   | -                              | -          | -          | -            | 108                            | 111        | 109          | 107                           | 105                     |
| <b>LEGENDAIRY 5.0</b>         | CropLan    | 3.0 | 97                             | 103        | 97         | 100          | -                              | -          | -            | -                             | 105                     |
| <b>8630</b>                   | Mallard    | -   | -                              | -          | -          | -            | 103                            | 103        | 103          | -                             | 104                     |
| JADE III                      | NC+        | 2.0 | 104                            | 107        | 102        | 104          | -                              | -          | -            | -                             | 104                     |
| DKA41-18RR                    | DeKalb     | -   | -                              | -          | -          | -            | -                              | -          | -            | 102                           | 104                     |
| ABUNDANCE                     | Ziller     | 3.5 | 102                            | 108        | 100        | 104          | -                              | -          | -            | -                             | 104                     |
| MACON                         | Allied     | -   | 104                            | 105        | 101        | 104          | -                              | -          | -            | -                             | 103                     |
| <b>6400 HT</b>                | Garst      | 2.5 | 109                            | 107        | 101        | 106          | 108                            | 105        | 106          | -                             | 103                     |
| DKA34-17RR                    | DeKalb     | -   | -                              | -          | -          | -            | -                              | -          | -            | 103                           | 103                     |
| VIKING 357                    | Allied     | -   | -                              | -          | -          | -            | 102                            | 101        | 102          | -                             | 102                     |
| 6443 RR                       | Garst      | -   | -                              | -          | -          | -            | -                              | -          | -            | 102                           | 102                     |
| <b>Wyo. BRR - Resistant</b>   | Public     | -   | 101                            | 101        | 107        | 103          | -                              | -          | -            | -                             | 101                     |
| <b>6200 HT</b>                | Garst      | 2.0 | 96                             | 100        | 99         | 99           | -                              | -          | -            | -                             | 101                     |
| 4R429                         | Mycogen    | 4.0 | 93                             | 105        | 91         | 97           | -                              | -          | -            | -                             | 100                     |
| STAMPEDE                      | Allied     | -   | -                              | -          | -          | -            | 100                            | 101        | 100          | -                             | 100                     |
| WL 343 HQ                     | W-L        | -   | -                              | -          | -          | -            | -                              | -          | -            | 98                            | 100                     |
| <b>HYBRIFORCE-420/WET</b>     | DairyLand  | 3.0 | 92                             | 98         | 96         | 95           | -                              | -          | -            | -                             | 99                      |
| VERNAL                        | Check      | 2.0 | 107                            | 101        | 104        | 104          | 99                             | 100        | 99           | 99                            | 99                      |
| BARALFA 42 IQ                 | Barenbrug  | 2.0 | -                              | -          | -          | -            | 99                             | 95         | 97           | -                             | 97                      |
| VIKING 357                    | Albert Lea | -   | 94                             | 105        | 91         | 97           | -                              | -          | -            | -                             | 97                      |
| SHAW                          | Albert Lea | -   | 93                             | 97         | 98         | 96           | -                              | -          | -            | -                             | 96                      |
| ONEIDA VR                     | Check      | -   | 88                             | 92         | 94         | 92           | 97                             | 97         | 97           | 94                            | 96                      |
| LSD 5%                        |            | -   | 20                             | 10         | 7          | 10           | 14                             | 9          | 10           | 11                            |                         |

**Table 2. Alfalfa variety yield as percentage of check varieties at Zumbro Falls (Wabasha County), Lamberton (Redwood County) and St. Martin (Stearns County).**

| Variety, in descending order of average performance over all current Minn. trials. <b>Bold</b> varieties have been in Minn. trials for more than 5 site-years. |              |     | Marketer | WSI | Zumbro Falls |      |      | Lamberton    |      |      | St. Martin   |      |      | Total Years, Average |
|--|--------------|-----|----------|-----|--------------|------|------|--------------|------|------|--------------|------|------|----------------------|
|  |              |     |          |     | 2006 Seeding |      |      | 2005 Seeding |      |      | 2005 Seeding |      |      |                      |
|  |              |     |          |     | 1-Year Total | 2007 | 2006 | 2-Year Total | 2007 | 2006 | 2-Year Total | 2007 | 2006 |                      |
| <i>Checks, Tons/Ac as Hay</i>  |              |     |          |     | 5.7          | 6.6  | 8.3  | 14.9         | 6.7  | 6.8  | 13.6         | 6.5  |      |                      |
| LABRADOR   | Dahlco       | -   | -        | -   | -            | -    | -    | 114          | 114  | 114  | 114          | 114  |      |                      |
| <b>4S419</b>   | DairyLand    | -   | -        | 119 | 102          | 110  | -    | 115          | 112  | 114  | 114          | 113  |      |                      |
| DKA33-16   | DeKalb       | -   | -        | -   | -            | -    | -    | 114          | 109  | 112  | 112          | 112  |      |                      |
| L447HD   | Legacy       | -   | 112      | -   | -            | -    | -    | -            | -    | -    | -            | 112  |      |                      |
| SOMERSET   | NK Brand     | 2.5 | -        | -   | -            | -    | -    | 115          | 108  | 112  | 112          | 112  |      |                      |
| <b>REBOUND 5.0</b>   | CropLan      | 2.5 | -        | 120 | 100          | 109  | -    | -            | -    | -    | -            | 112  |      |                      |
| <b>6415</b>  | Garst        | 2.0 | 108      | 119 | 105          | 111  | -    | 117          | 113  | 115  | 115          | 110  |      |                      |
| MILESTONE  | FFR          | -   | -        | 114 | 105          | 109  | -    | -            | -    | -    | -            | 110  |      |                      |
| MAGNUM VI  | DairyLand    | -   | 107      | -   | -            | -    | -    | -            | -    | -    | -            | 109  |      |                      |
| <b>GENOA</b>   | NK Brand     | 2.0 | 108      | 127 | 103          | 113  | -    | 113          | 112  | 113  | 113          | 109  |      |                      |
| PERFORM  | DairyLand    | -   | 105      | 118 | 109          | 113  | -    | -            | -    | -    | -            | 109  |      |                      |
| <b>6420</b>  | Garst        | -   | -        | 111 | 105          | 108  | -    | 110          | 111  | 110  | 110          | 108  |      |                      |
| GH727  | Golden Harv. | -   | 108      | -   | -            | -    | -    | -            | -    | -    | -            | 108  |      |                      |
| WL 357 HQ  | W-L          | 2.0 | -        | 113 | 97           | 104  | -    | 112          | 108  | 110  | 110          | 108  |      |                      |
| AMERISTAND 407TQ   | Am. Alf.     | -   | 106      | -   | -            | -    | -    | -            | -    | -    | -            | 108  |      |                      |
| <b>54V46</b>   | Pioneer      | 3.0 | 106      | 115 | 104          | 109  | -    | 110          | 114  | 112  | 112          | 107  |      |                      |
| INTEGRITY  | ABI          | -   | -        | 109 | 96           | 102  | -    | -            | -    | -    | -            | 107  |      |                      |
| 5312   | Check        | -   | 105      | 101 | 103          | 102  | -    | 108          | 106  | 107  | 107          | 105  |      |                      |
| 4A421  | Mycogen      | 2.5 | 103      | -   | -            | -    | -    | -            | -    | -    | -            | 105  |      |                      |
| <b>53Q30</b>   | Pioneer      | -   | 105      | 113 | 96           | 104  | -    | 112          | 107  | 110  | 110          | 105  |      |                      |
| <b>LEGENDAIRY 5.0</b>  | CropLan      | 3.0 | -        | -   | -            | -    | -    | 115          | 109  | 112  | 112          | 105  |      |                      |
| <b>8630</b>  | Mallard      | -   | -        | 105 | 100          | 102  | -    | 109          | 108  | 108  | 108          | 104  |      |                      |
| DKA41-18RR   | DeKalb       | -   | 106      | -   | -            | -    | -    | -            | -    | -    | -            | 104  |      |                      |
| <b>6400 HT</b>   | Garst        | 2.5 | -        | 107 | 95           | 100  | -    | 98           | 103  | 101  | 101          | 103  |      |                      |
| 6443 RR  | Garst        | -   | 104      | -   | -            | -    | -    | -            | -    | -    | -            | 102  |      |                      |
| 4G418RR  | Mycogen      | -   | 101      | -   | -            | -    | -    | -            | -    | -    | -            | 101  |      |                      |
| <b>6200 HT</b>   | Garst        | 2.0 | -        | -   | -            | -    | -    | 101          | 103  | 102  | 102          | 101  |      |                      |
| PHABULOUS III  | Trelay       | -   | 105      | -   | -            | -    | -    | -            | -    | -    | -            | 100  |      |                      |
| 4R429  | Mycogen      | 4.0 | -        | -   | -            | -    | -    | 104          | 109  | 106  | 106          | 100  |      |                      |
| WL 343 HQ  | W-L          | -   | 101      | -   | -            | -    | -    | -            | -    | -    | -            | 100  |      |                      |
| VERNAL   | Check        | 2.0 | 98       | 99  | 96           | 97   | -    | 96           | 97   | 97   | 97           | 99   |      |                      |
| ONEIDA VR  | Check        | -   | 97       | 100 | 100          | 100  | -    | 95           | 97   | 96   | 96           | 96   |      |                      |
| LSD 5%   |              | -   | 8        | 10  | 7            | 6    | -    | 8            | 8    | 7    | 7            |      |      |                      |

**Table 3. Alfalfa variety yield as percentage of check varieties at Underwood (Otter Tail County) and Grand Rapids (Itasca County).**

| Variety, in descending order of average performance over all current Minn. trials. <b>Bold</b> varieties have been in Minn. trials for more than 5 site-years. |           |     | Marketer | WSI | Underwood    |      |      |              | Grand Rapids |      |      | Total Years, Average |              |
|--|-----------|-----|----------|-----|--------------|------|------|--------------|--------------|------|------|----------------------|--------------|
|  |           |     |          |     | 2004 Seeding |      |      | 2006 Seeding | 2005 Seeding |      |      |                      |              |
|  |           |     |          |     | 2007         | 2006 | 2005 | 3-Year Total | 1-Year Total | 2007 | 2006 |                      | 2-Year Total |
| <i>Checks, Tons/Ac as Hay</i>  |           |     |          |     | 7.3          | 8.9  | 7.6  | 23.8         | 6.0          | 2.2  | 3.4  | 5.5                  | 6.5          |
| <b>LIGHTNING III</b>   | Jung      | 2.5 | 123      | 112 | 107          | 114  | -    | -            | -            | -    | -    | -                    | 112          |
| <b>REBOUND 5.0</b>   | CropLan   | 2.5 | 123      | 119 | 111          | 118  | -    | -            | -            | -    | -    | -                    | 112          |
| EXTREME  | LG Seeds  | -   | 112      | 110 | 110          | 111  | -    | -            | -            | -    | -    | -                    | 111          |
| <b>6415</b>  | Garst     | 2.0 | 120      | 119 | 108          | 116  | 98   | -            | -            | -    | -    | -                    | 110          |
| BOBWHITE   | NC+       | -   | 109      | 113 | 104          | 109  | -    | -            | -            | -    | -    | -                    | 109          |
| MAGNUM VI  | DairyLand | -   | -        | -   | -            | -    | 107  | -            | -            | -    | -    | -                    | 109          |
| <b>GENOA</b>   | NK Brand  | 2.0 | -        | -   | -            | -    | 104  | -            | -            | -    | -    | -                    | 109          |
| FSG 351  | La Crosse | -   | 112      | 106 | 108          | 108  | -    | -            | -            | -    | -    | -                    | 109          |

**Table 3 (continued). Alfalfa variety yield as percentage of check varieties at Underwood (Otter Tail County) and Grand Rapids (Itasca County).**

| Variety, in descending order of average performance over all current Minn. trials. <b>Bold</b> varieties have been in Minn. trials for more than 5 site-years. |           | Marketer | WSI | Underwood    |      |              |              | Grand Rapids |      |      | Total Years, Average |
|--|-----------|----------|-----|--------------|------|--------------|--------------|--------------|------|------|----------------------|
|  |           |          |     | 2004 Seeding |      | 2006 Seeding |              | 2005 Seeding |      |      |                      |
|  |           |          |     | 2007         | 2006 | 2005         | 3-Year Total | 1-Year Total | 2007 | 2006 |                      |
| <i>Checks, Tons/Ac as Hay</i>  |           |          | 7.3 | 8.9          | 7.6  | 23.8         | 6.0          | 2.2          | 3.4  | 5.5  | 6.5                  |
| PERFORM  | DairyLand | -        | -   | -            | -    | -            | 105          | -            | -    | -    | 109                  |
| FSG 408DP  | La Crosse | -        | 111 | 106          | 108  | 108          | -            | -            | -    | -    | 108                  |
| AMERISTAND 407TQ   | Am. Alf.  | -        | -   | -            | -    | -            | 109          | -            | -    | -    | 108                  |
| WL 319 HQ  | W-L       | 1.5      | 109 | 110          | 102  | 107          | -            | -            | -    | -    | 107                  |
| <b>54V46</b>   | Pioneer   | 3.0      | 118 | 109          | 102  | 110          | 104          | 84           | 97   | 92   | 107                  |
| 5312   | Check     | -        | 105 | 104          | 104  | 104          | 106          | 110          | 110  | 110  | 105                  |
| 4A421  | Mycogen   | 2.5      | -   | -            | -    | -            | -            | 100          | 112  | 107  | 105                  |
| <b>54Q25</b>   | Pioneer   | -        | 105 | 105          | 106  | 106          | -            | -            | -    | -    | 105                  |
| <b>53Q30</b>   | Pioneer   | -        | -   | -            | -    | -            | 95           | 89           | 111  | 102  | 105                  |
| <b>LEGENDAIRY 5.0</b>  | CropLan   | 3.0      | 119 | 111          | 96   | 108          | -            | 97           | 101  | 99   | 105                  |
| <b>6400 HT</b>   | Garst     | 2.5      | 105 | 106          | 107  | 106          | 102          | 86           | 101  | 96   | 103                  |
| 6443 RR  | Garst     | -        | -   | -            | -    | -            | 98           | -            | -    | -    | 102                  |
| <b>Wyo. BRR - Resistant</b>  | Public    | -        | 99  | 99           | 99   | 99           | -            | -            | -    | -    | 101                  |
| <b>6200 HT</b>   | Garst     | 2.0      | 105 | 94           | 101  | 100          | 99           | 107          | 103  | 105  | 101                  |
| PHABULOUS III  | Trelay    | -        | -   | -            | -    | -            | 96           | -            | -    | -    | 100                  |
| A 30-06  | Producer  | 2.0      | 104 | 94           | 101  | 99           | -            | -            | -    | -    | 100                  |
| WL 343 HQ  | W-L       | -        | -   | -            | -    | -            | 100          | -            | -    | -    | 100                  |
| <b>HYBRIFORCE-420/WET</b>  | DairyLand | 3.0      | 103 | 105          | 102  | 103          | -            | -            | -    | -    | 99                   |
| VERNAL   | Check     | 2.0      | 100 | 97           | 98   | 98           | 99           | 101          | 95   | 97   | 99                   |
| ONEIDA VR  | Check     | -        | 95  | 100          | 97   | 97           | 96           | 89           | 95   | 93   | 96                   |
| LSD 5%   |           | -        | 9   | 13           | 11   | 8            | 11           | 22           | 12   | 13   |                      |

**Table 4. Seeding year alfalfa variety yields as a percentage of check varieties at Rosemount, Lamberton, St. Martin and Underwood.**

| Variety, in descending order of average performance over all current Minn. trials. <b>Bold</b> varieties have been in Minn. trials for more than 5 site-years. |           | Marketer | WSI | Rosemount       | Lamberton       | St. Martin   | Total Years, Average |
|--|-----------|----------|-----|-----------------|-----------------|--------------|----------------------|
|  |           |          |     | 2007 Seeding    | 2007 Seeding    | & Underwood  |                      |
|  |           |          |     | Seed Year Total | Seed Year Total | 2007 Seeding |                      |
| <i>Checks, Tons/Ac as Hay</i>  |           |          | 3.1 | 3.3             | 3.2             | 3.2          |                      |
| L333HD   | Legacy    | -        | -   | -               | 110             | 110          |                      |
| SUMMERGOLD   | Renk      | -        | -   | -               | 108             | 108          |                      |
| 6417   | Garst     | -        | 100 | 102             | 121             | 108          |                      |
| PHABULOUS III  | Trelay    | -        | 103 | -               | 110             | 107          |                      |
| FSG 406  | La Crosse | 2.0      | 104 | -               | -               | 104          |                      |
| SPRINGGOLD   | Renk      | -        | 100 | 100             | 110             | 103          |                      |
| 5312   | Check     | -        | 104 | 103             | 98              | 102          |                      |
| FOREMOST II  | Sansgaard | -        | 101 | -               | -               | 101          |                      |
| VERNAL   | Check     | 2.0      | 97  | 100             | 104             | 101          |                      |
| 6426   | Garst     | -        | 108 | 89              | -               | 98           |                      |
| ONEIDA VR  | Check     | -        | 98  | 96              | 97              | 97           |                      |
| AMERISTAND 407TQ   | Am. Alf.  | -        | -   | -               | 95              | 95           |                      |
| <b>6415</b>  | Garst     | 2.0      | -   | 94              | -               | 94           |                      |
| <b>6400 HT</b>   | Garst     | 2.5      | -   | -               | 94              | 94           |                      |
| WL 343HQ   | W-L       | -        | -   | -               | 92              | 92           |                      |
| 55V48  | Pioneer   | -        | 93  | 87              | 96              | 92           |                      |
| LSD 5%   |           | -        | 9   | ns              | 26              |              |                      |

**Table 5a. Alfalfa variety dry matter yield, milk production (expressed as percent of Vernal), RFQ index, CP and NDF (% dry matter), NDFD (% NDF); 2007 season totals<sup>1</sup> and weighted averages from a trial seeded in 2006 at Rosemount, Minn.**

| Variety, listed in descending order of milk production | DM Yield<br>Ton/Acre | Milk, (% vernal) <sup>2</sup> |        | RFQ <sup>3</sup><br>Index | CP <sup>3</sup> ,<br>% DM | NDF <sup>3</sup> ,<br>% DM | NDFD <sup>4</sup> ,<br>% NDF |
|--|----------------------|-------------------------------|--------|---------------------------|---------------------------|----------------------------|------------------------------|
|  |                      | Lb/Acre                       | Lb/Ton |                           |                           |                            |                              |
| 53Q30  | 6.1                  | 107                           | 103    | 156                       | 21.9                      | 40.6                       | 49.2                         |
| Experimental 1 <sup>5</sup>                            | 5.9                  | 104                           | 102    | 151                       | 21.6                      | 42.1                       | 49.8                         |
| 6415   | 5.9                  | 101                           | 100    | 147                       | 20.7                      | 42.4                       | 48.7                         |
| VERNAL   | 5.9                  | 100                           | 100    | 145                       | 20.8                      | 42.9                       | 49.4                         |
| CIMARRON   | 5.7                  | 97                            | 99     | 142                       | 20.9                      | 43.5                       | 48.8                         |
| WL 322 HQ  | 5.4                  | 96                            | 103    | 156                       | 22.0                      | 40.1                       | 48.5                         |
| Vernal, actual values                                  | 5.9                  | 16,700                        | 2,830  | 145                       | 20.8                      | 42.9                       | 49.4                         |
| Mean   | 5.8                  | 101                           | 101    | 150                       | 21.3                      | 41.9                       | 49.1                         |
| LSD (0.05)   | ns                   | ns                            | 2      | 6                         | 0.5                       | 1.6                        | ns                           |
| CV (%)   | 7                    | 6                             | 1      | 3                         | 2                         | 3                          | 2                            |

<sup>1</sup> Three-harvest total taken on 31 May, 9 July and 21 August in 2007.

<sup>2</sup> Milk production (pounds milk per acre and ton) are predicted using spreadsheet MILK2000 version 7.54, University of Wisconsin, expressed as % Vernal.

<sup>3</sup> RFQ=relative forage quality index; CP=% crude protein; and NDF=% neutral detergent fiber. Variables expressed as average concentration for the season.

<sup>4</sup> NDFD=neutral detergent fiber digestibility, expressed as % NDF concentration.

<sup>5</sup> Entered as experimental germplasm by alfalfa breeder.

**Table 5b. Alfalfa variety dry matter yield, milk production (expressed as percent of Vernal), RFQ index, CP and NDF (% dry matter), NDFD (% NDF); 2007 season totals<sup>1</sup> and weighted averages from a trial seeded in 2007 at Rosemount, Minn.**

| Variety, listed in descending order of milk production | DM Yield<br>Ton/Acre | Milk, (% vernal) <sup>2</sup> |        | RFQ <sup>3</sup><br>Index | CP <sup>3</sup> ,<br>% DM | NDF <sup>3</sup> ,<br>% DM | NDFD <sup>4</sup> ,<br>% NDF |
|--|----------------------|-------------------------------|--------|---------------------------|---------------------------|----------------------------|------------------------------|
|  |                      | Lb/Acre                       | Lb/Ton |                           |                           |                            |                              |
| Experimental 2 <sup>5</sup>                            | 2.9                  | 117                           | 106    | 172                       | 22.9                      | 37.7                       | 51.0                         |
| CIMARRON   | 2.8                  | 107                           | 100    | 151                       | 21.5                      | 41.1                       | 49.6                         |
| WL 322 HQ  | 2.6                  | 107                           | 105    | 173                       | 23.4                      | 37.2                       | 50.2                         |
| Experimental 3 <sup>5</sup>                            | 2.7                  | 106                           | 106    | 175                       | 23.3                      | 37.2                       | 51.3                         |
| SPRINGGOLD   | 2.7                  | 106                           | 108    | 182                       | 23.7                      | 36.2                       | 51.7                         |
| 6417   | 2.7                  | 105                           | 105    | 174                       | 22.6                      | 37.0                       | 50.2                         |
| VERNAL   | 2.5                  | 100                           | 100    | 155                       | 22.3                      | 40.5                       | 49.8                         |
| Vernal, actual values                                  | 2.5                  | 7,100                         | 2,850  | 155                       | 22.3                      | 40.5                       | 49.8                         |
| Mean   | 2.7                  | 107                           | 104    | 169                       | 22.8                      | 38.1                       | 50.5                         |
| LSD (0.05)   | 0.2                  | 11                            | 3      | 14                        | 1.2                       | 2.3                        | 1.5                          |
| CV (%)   | 4                    | 7                             | 2      | 6                         | 4                         | 4                          | 2                            |

<sup>1</sup> Two-harvest total taken on 9 July and 27 August in 2007.

<sup>2</sup> Milk production (pounds milk per acre and ton) are predicted using spreadsheet MILK2000 version 7.54, University of Wisconsin.

<sup>3</sup> RFQ=relative forage quality index; CP=% crude protein; and NDF=% neutral detergent fiber. Variables expressed as average concentration for the season.

<sup>4</sup> NDFD=neutral detergent fiber digestibility, expressed as % NDF concentration.

<sup>5</sup> Entered as experimental germplasm by alfalfa breeder.

**Table 6. 2006-2007 regional alfalfa yield trial for potato-leafhopper-resistant varieties.**

Conducted at S. Charleston, Ohio, and Ames, Iowa, seeded spring 2006.

| Variety                               | Marketer              | Yield <sup>1</sup><br>Tons/acre | PLH Yield<br>Index <sup>2</sup> % |
|---------------------------------------|-----------------------|---------------------------------|-----------------------------------|
| <i>Resistant</i>                      |                       |                                 |                                   |
| 53H92                                 | Pioneer               | 1.20*                           | 45                                |
| 4P424                                 | Mycogen Seeds         | 1.15*                           | 38                                |
| 6426PLH                               | Garst Seed            | 1.14*                           | 37                                |
| EVERGREEN <sup>3</sup>                | NK Brand Seed         | 1.09*                           | 30                                |
| 54H91                                 | Pioneer               | 1.06*                           | 28                                |
| GH773LH                               | Goldern Harvest Seeds | 1.04*                           | 25                                |
| <i>Susceptible Checks<sup>3</sup></i> |                       | 0.83                            |                                   |
| LSD (0.05)                            |                       | 0.10                            |                                   |

\* Yield is significantly greater than yield of the susceptible check varieties.

<sup>1</sup> Average yield at 10 harvests across both locations in 2006 and 2007 when potato-leafhoppers caused significant injury to alfalfa.

<sup>2</sup> The % yield improvement over the yield of susceptible check varieties.

<sup>3</sup> Average yield of two susceptible varieties (5454, DK140).

**Table 7. 2007 forage seed sources.**

| Marketer       | Company                             | Web URL  |
|----------------|-------------------------------------|--|
| Albert Lea     | Albert Lea Seed House               | <a href="http://www.alseed.com">www.alseed.com</a>   |
| Allied         | Allied Seed                         | <a href="http://www.alliedseed.com">www.alliedseed.com</a>                                   |
| Am. Alf.       | America's Alfalfa                   | <a href="http://www.americasalfalfa.com">www.americasalfalfa.com</a>                         |
| Barenburg      | Barenburg Midwest                   | <a href="http://www.barusa.com">www.barusa.com</a>   |
| Croplan        | CROPLAN Genetics                    | <a href="http://www.croplangenetics.com">www.croplangenetics.com</a>                         |
| Dahlco         | Dahlco Seed                         | <a href="http://www.dahlco.com">www.dahlco.com</a>   |
| Dairyland      | Dairyland Seed Co.                  | <a href="http://www.dairylandseed.com">www.dairylandseed.com</a>                             |
| Dekalb         | AsgrowDekalb                        | <a href="http://www.asgrowanddekalb.com/web">www.asgrowanddekalb.com/web</a>                 |
| FFR            | FFR Cooperative                     | <a href="http://www.ffrcoop.org">www.ffrcoop.org</a>   |
| Garst          | Garst Seed Co.                      | <a href="http://www.garstseed.com">www.garstseed.com</a>                                     |
| Golden Harvest | JC Robinson Seeds/Golden Harvest    | <a href="http://www.goldenharvestseeds.com">www.goldenharvestseeds.com</a>                   |
| Jung           | Jung Seed Genetics                  | <a href="http://www.jungseedgenetics.com">www.jungseedgenetics.com</a>                       |
| La Crosse      | La Crosse Forage & Turf Seed Corp.  | <a href="http://www.lftseed.com">www.lftseed.com</a>   |
| Legacy         | Legacy Seeds, Inc.                  | <a href="http://www.legacyseeds.com">www.legacyseeds.com</a>                                 |
| LG Seeds       | LG Seeds                            | <a href="http://www.lgseeds.com">www.lgseeds.com</a>   |
| Mallard        | Mallard Seed                        | <a href="http://www.mallardseed.com">www.mallardseed.com</a>                                 |
| Mycogen        | Mycogen Seeds                       | <a href="http://www.mycogen.com">www.mycogen.com</a>   |
| NC+            | NC+ Hybrids                         | <a href="http://www.nc-plus.com">www.nc-plus.com</a>   |
| NK Brand       | NK Brand                            | <a href="http://www.nk-us.com">www.nk-us.com</a>   |
| Producer       | Producer's Choice                   | <a href="http://www.producerschoiceseed.com">www.producerschoiceseed.com</a>                 |
| Pioneer        | Pioneer Hi-Bred International, Inc. | <a href="http://www.pioneer.com">www.pioneer.com</a>   |
| Renk           | Renk Seed Co.                       | <a href="http://www.renkseed.com">www.renkseed.com</a>                                       |
| Prairie        | Prairie Brand                       | <a href="http://www.prairiebrandseed.com/index.html">www.prairiebrandseed.com/index.html</a> |
| Trelay Inc.    | Trelay Inc.                         | <a href="http://www.trelay.com">www.trelay.com</a>   |
| W-L            | W-L Research, Inc.                  | <a href="http://www.wlresearch.com">www.wlresearch.com</a>                                   |
| Ziller         | Ziller Seed Co. Inc.                | <a href="http://www.zillerseed.com">www.zillerseed.com</a>                                   |
| U of MN        | University of Minnesota Forages     | <a href="http://www.extension.umn.edu/forages/">http://www.extension.umn.edu/forages/</a>    |