

# 2008 Iowa Crop Performance Tests— Alfalfa



## Test Locations and Soils

**Central Iowa:** Tile-drained, Clarion-Nicollet-Webster soils at the Agronomy and Agricultural Engineering Research Center west of Ames.

**Northeastern Iowa:** Readlyn, Kenyon, and Clyde loam soil at the Northeast Research Farm west of Nashua.

## Fertilization

Annual applications of P and K are made to soil test recommendations. P is applied in early April; K requirements are split for application in early April and after first harvest. Nitrogen fertilization on grass plots is applied at 100 lbs. N before first harvest and 50 lbs. N before each subsequent harvest.

## Planting and Harvesting

Plot size = 5 rows, 6" apart, 12' long.  
Seeding rate = 18 lb/acre.  
Preemergent herbicide = Eptam (2 qt/acre)

A sickle-bar harvester was used. Established alfalfa tests were harvested four times at the late-bud to early-bloom stage.

## Hay Yield

Yields of commercially available varieties are presented in this report. In some trials, we also include experimental entries, which are not presented here. Yields from tests seeded in 2005, 2006, 2007 are included here.

**Yields are expressed as tons of dry matter per acre. Average yields are calculated over nonestablishment years.** An LSD (least significant difference) is listed at the bottom of each data column. *Differences among varieties that are less than the LSD are not statistically significant at the 5 percent probability level.*

## Stand Persistence

A long icy winter resulted in significant winterkill at the Ames location, which forced us to abandon the 2005 and 2006 alfalfa tests. Stands of other tests at Ames and Nashua were uniformly good this year.

## Potato Leafhopper Tolerance

To control potato leafhopper, tests at Ames and Nashua were sprayed three times with Pounce, Dimate, or Lorsban. Beginning in 1998, we also have included no-spray trials to test yield of leafhopper-tolerant varieties. Leafhoppers were present in significant numbers during the 2008 growing season.

**We highly recommend leafhopper-tolerant varieties, especially if you do not spray, and particularly if you live in central and southern Iowa.**

The new leafhopper-tolerant varieties have yields substantially better than top-of-the-line nontolerant varieties when hopper pressure is present and close to top varieties when either no hoppers are present or when sprayed. Seedling year tolerance in these varieties is outstanding.



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If you regularly scout fields for leafhoppers and spray at the economic threshold, the leafhopper-tolerant varieties may still show a slight yield lag over the top-performing nontolerant varieties. However, both the yield and the tolerance of newer varieties continue to improve, and I would consider these varieties when purchasing seed for the coming year.

### Interpreting the Results

Although these results should be applicable throughout the state, varieties may perform differently in particular environments. Variety test results are most applicable to sites with similar soils and climates. Some factors to consider in selecting varieties are consistency in yield from year to year, pest resistance profile, and persistence. Persistence and winter hardiness are best measured by the yield in the final year of a test (the third year after establishment). Snow cover, ice sheeting, waterlogging, and drought will affect the performance of all varieties.

**Proper management is essential for good performance!**

### For More Information

More forage yield trial information and entry forms are available on the ISU Crop Testing Web site at [www.croptesting.iastate.edu](http://www.croptesting.iastate.edu) or from Mark Smith at 515-294-7887 or [smithma@iastate.edu](mailto:smithma@iastate.edu).

Prepared by Mark Smith, field specialist. This work was supported by Iowa Crop Improvement Association, Iowa State University Extension, and the Iowa Agriculture and Home Economics Experiment Station at Iowa State University.

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### 2007 Ames Test Yields (Tons/Acre)

Variety	2007 Total	June	July	August	Sept.	2008 Total	Over Year Average <sup>1</sup>
55V48	2.09	2.58	1.86	1.07	0.81	6.31	6.31
SpringGold	2.10	2.36	1.93	0.92	0.82	6.01	6.01
LegenDairy 5.0	2.02	2.37	1.78	1.00	0.77	5.93	5.93
Rebound 5.0	1.99	2.46	1.72	0.97	0.70	5.86	5.86
5454	1.90	2.58	1.73	0.69	0.70	5.70	5.70
Meadowlark	1.94	2.47	1.70	0.84	0.68	5.68	5.68
Roadrunner	2.09	2.35	1.76	0.85	0.68	5.67	5.67
6400HT	2.31	2.55	1.62	0.85	0.66	5.66	5.66
Foremost II	1.74	2.24	1.74	0.92	0.73	5.65	5.65
DK140	2.22	2.48	1.59	0.84	0.67	5.58	5.58
5454	1.83	2.49	1.67	0.76	0.66	5.58	5.58
6426	2.21	2.08	1.84	0.86	0.73	5.54	5.54
4P424	2.16	2.22	1.65	0.80	0.62	5.28	5.28
Robin	2.04	2.15	1.66	0.79	0.69	5.27	5.27
6415	2.19	2.05	1.65	0.81	0.73	5.21	5.21
Bluebird-HR	2.24	2.20	1.47	0.73	0.50	4.93	4.93
Vernal	1.88	2.34	1.46	0.58	0.45	4.81	4.81
<b>Mean</b>	<b>2.02</b>	<b>2.35</b>	<b>1.71</b>	<b>0.87</b>	<b>0.70</b>	<b>5.64</b>	<b>5.64</b>
<b>LSD (5%)</b>	<b>0.25</b>	<b>0.42</b>	<b>0.16</b>	<b>0.12</b>	<b>0.10</b>	<b>0.54</b>	<b>0.54</b>

<sup>1</sup>Excluding seeding year.

### 2007 Ames Unsprayed Yields (Tons/Acre)

Variety	2007 Total	June	July	August	Sept.	2008 Total	Over Year Average <sup>1</sup>
53H92	2.57	2.58	1.95	0.87	0.49	5.89	5.89
DK140	2.17	2.51	1.75	0.87	0.60	5.73	5.73
6426	2.19	2.49	1.88	0.80	0.55	5.71	5.71
5454	1.85	2.45	1.66	0.66	0.56	5.32	5.32
Roadrunner	2.25	2.31	1.67	0.76	0.57	5.30	5.30
4P424	1.97	2.17	1.80	0.77	0.54	5.28	5.28
Robin	1.90	2.35	1.68	0.73	0.49	5.25	5.25
Meadowlark	1.86	2.50	1.61	0.67	0.44	5.22	5.22
Bluebird-HR	2.00	2.43	1.55	0.69	0.33	4.99	4.99
Vernal	1.57	2.56	1.37	0.51	0.26	4.71	4.71
<b>Mean</b>	<b>2.03</b>	<b>2.43</b>	<b>1.69</b>	<b>0.73</b>	<b>0.48</b>	<b>5.34</b>	<b>5.34</b>
<b>LSD (5%)</b>	<b>0.30</b>	<b>0.44</b>	<b>0.17</b>	<b>0.10</b>	<b>0.12</b>	<b>0.55</b>	<b>0.55</b>

<sup>1</sup>Excluding seeding year.

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### 2005 Nashua Test Yields (Tons/Acre)

Variety	2005 Total	2006 Total	2007 Total	June	July	August	Sept.	2008 Total	Over Year Average <sup>1</sup>
Marvel	2.49	7.27	5.89	2.12	1.34	1.00	0.42	4.90	6.02
Rebound 5.0	2.56	6.77	5.57	1.98	1.23	0.90	0.37	4.49	5.61
6415	2.67	6.84	5.54	1.79	1.14	0.83	0.43	4.21	5.53
6200HT	2.46	6.42	5.21	1.66	1.05	0.75	0.24	3.69	5.11
6400HT	2.70	6.22	5.14	1.73	1.02	0.75	0.20	3.72	5.03
6420	2.34	6.40	5.13	1.62	0.93	0.74	0.22	3.53	5.02
Integrity	2.35	6.29	4.90	1.69	1.10	0.79	0.27	3.85	5.02
5454	2.03	6.05	4.90	1.67	0.95	0.65	0.23	3.48	4.81
Vernal	1.90	5.47	4.07	1.53	0.71	0.65	0.08	2.95	4.16
<b>Mean</b>	<b>2.49</b>	<b>6.52</b>	<b>5.16</b>	<b>1.79</b>	<b>1.07</b>	<b>0.83</b>	<b>0.29</b>	<b>3.98</b>	<b>5.22</b>
<b>LSD (5%)</b>	<b>0.28</b>	<b>0.51</b>	<b>0.62</b>	<b>0.26</b>	<b>0.16</b>	<b>0.18</b>	<b>0.10</b>	<b>0.54</b>	<b>0.21</b>

<sup>1</sup>Excluding seeding year.

### 2006 Nashua Test Yields (Tons/Acre)

Variety	2006 Total	2007 Total	June	July	August	Sept.	2008 Total	Over Year Average <sup>1</sup>
6415	3.48	6.76	2.11	1.59	1.10	0.59	5.36	6.06
FSG406	3.55	6.62	2.17	1.47	1.06	0.52	5.20	5.91
WL343HQ	3.78	6.49	1.98	1.62	1.07	0.56	5.23	5.86
FSG505	3.35	6.39	2.20	1.50	1.08	0.57	5.32	5.85
DKA41-18RR	3.26	6.48	2.08	1.50	1.04	0.56	5.21	5.84
Mariner III	3.34	6.41	2.05	1.42	0.97	0.54	4.95	5.68
5454	3.70	6.44	2.15	1.39	0.90	0.43	4.89	5.67
6420	3.62	6.45	1.84	1.45	1.01	0.53	4.78	5.62
6400HT	3.33	6.26	2.01	1.41	1.02	0.46	4.95	5.60
53Q30	3.82	6.31	1.98	1.32	1.01	0.53	4.87	5.59
54V46	3.76	6.34	1.80	1.41	0.94	0.53	4.67	5.51
DKA34-17RR	3.15	6.10	1.95	1.34	1.05	0.48	4.80	5.45
Innovator+Z	3.69	6.14	1.88	1.32	0.89	0.45	4.51	5.33
6200HT	3.42	6.07	1.68	1.20	0.87	0.44	4.18	5.13
Vernal	3.42	5.44	1.71	1.11	0.88	0.40	4.09	4.77
<b>Mean</b>	<b>3.49</b>	<b>6.33</b>	<b>1.98</b>	<b>1.42</b>	<b>1.02</b>	<b>0.53</b>	<b>4.96</b>	<b>5.64</b>
<b>LSD (5%)</b>	<b>0.48</b>	<b>0.47</b>	<b>0.41</b>	<b>0.28</b>	<b>0.21</b>	<b>0.14</b>	<b>0.86</b>	<b>0.26</b>

<sup>1</sup>Excluding seeding year.

### 2007 Nashua Test Yields (Tons/Acre)

Variety	2007 Total	June	July	August	Sept.	2008 Total	Over Year Average <sup>1</sup>
SpringGold	4.27	2.04	1.45	1.02	0.48	5.02	5.02
5454	4.16	2.17	1.41	0.82	0.37	4.88	4.88
55V48	4.19	2.28	1.28	0.84	0.37	4.79	4.79
5454	3.76	2.15	1.37	0.93	0.34	4.74	4.74
LegenDairy 5.0	3.84	1.93	1.29	0.93	0.46	4.53	4.53
6415	3.84	1.81	1.22	0.81	0.27	4.18	4.18
6400HT	3.91	1.90	1.15	0.91	0.25	4.14	4.14
Vernal	3.66	1.97	1.12	0.73	0.28	4.09	4.09
6426	3.71	1.86	1.23	0.66	0.31	4.08	4.08
Vernal	3.49	1.84	1.17	0.79	0.18	3.93	3.93
<b>Mean</b>	<b>3.93</b>	<b>2.00</b>	<b>1.29</b>	<b>0.87</b>	<b>0.36</b>	<b>4.51</b>	<b>4.51</b>
<b>LSD (5%)</b>	<b>0.43</b>	<b>0.30</b>	<b>0.19</b>	<b>0.20</b>	<b>0.15</b>	<b>0.63</b>	<b>0.63</b>

<sup>1</sup>Excluding seeding year.

### Alfalfa Variety Seed Sources

(See column on page 4 for reference.)

Allied Seed.....	800-624-8904
America's Alfalfa .....	800-873-2532
Blue River Hybrids.....	800-370-7979
Croplan Genetics .....	651-765-5710
Des Moines Forage & Turf Seed.....	800-810-1618
Garst Seed Company .....	888-464-2778
Golden Harvest Seeds .....	800-421-1169
GROWMARK, Inc. (FS Seeds) .....	309-557-6396
Monsanto .....	800-768-6387
Mycogen Plant Sciences.....	612-405-5800
PGI Alfalfa, Inc. ....	800-247-3967
Pioneer Hi-Bred Intl., Inc. ....	800-331-2939
Renk Seed Co. ....	608-837-7351
Sansgaard Seed Farms, Inc. ....	800-544-8751
UAP Midwest .....	800-522-1908

## Seed Sources, Dormancy Ratings, and Disease Resistance

Variety	Source <sup>1</sup>	FD <sup>2</sup>	Resistance Ratings								
			BW	VW	FW	AN	PR	AP	PA	LH	
5454	Pio	4	R	MR	HR	HR	HR	HR	LR	R	S
6415	Ga	4	HR	HR	HR	HR	HR	HR	HR	R	S
6420	Ga	4	HR	R	HR	HR	HR	HR	R	R	S
6426	Ga	4	HR	HR	HR	HR	HR	HR	R	HR	HR
4P424	My	4	HR	HR	HR	HR	HR	HR	HR	HR	HR
53H92	Pio	3	HR	R	HR	HR	HR	HR	HR	HR	HR
53Q30	Pio	3	HR	HR	HR	HR	HR	HR	R	HR	—
54V46	Pio	4	R	HR	HR	HR	HR	HR	R	MR	S
55V48	Pio	5	HR	R	HR	HR	HR	HR	HR	HR	—
6200HT	Ga	2	HR	HR	HR	HR	HR	HR	HR	HR	—
6400HT	Ga	4	HR	HR	HR	HR	HR	HR	HR	HR	S
Bluebird-HR	BR	3	HR	R	HR	HR	HR	HR	HR	HR	HR
DKA34-17RR	Mo	3	HR	HR	HR	HR	HR	HR	R	HR	—
DKA41-18RR	Mo	4	HR	HR	HR	HR	HR	HR	R	HR	—
Foremost II	Sa	4	HR	HR	HR	HR	HR	HR	R	—	—
FSG 406	DF	4	HR	HR	HR	HR	HR	HR	R	HR	—
FSG 505	DF	4	HR	HR	HR	HR	HR	HR	R	HR	—
Innovator+Z	Am	3	HR	HR	HR	HR	HR	HR	R	R	—
Integrity	PGI	4	HR	HR	HR	HR	HR	HR	—	HR	—
LegenDairy 5.0	Cr	3	HR	HR	HR	HR	HR	HR	HR	R	—
Mariner III	DF	4	HR	R	HR	HR	HR	HR	—	HR	—
Marvel	All	4	HR	HR	HR	HR	HR	HR	R	HR	—
Meadowlark	BR	3.8	HR	R	HR	R	HR	HR	LR	R	—
Rebound 5.0	Cr	4	HR	HR	HR	HR	HR	HR	HR	—	—
Roadrunner	BR	4	HR	R	HR	HR	HR	HR	HR	HR	—
Robin	BR	3.5	HR	R	HR	HR	HR	HR	HR	HR	—
SpringGold	Re	5	HR	HR	HR	HR	HR	HR	HR	R	—
Vernal	All	2	R	—	MR	S	S	—	—	—	—
WL343HQ	Gr, UA	4	HR	HR	HR	HR	HR	HR	—	HR	—

<sup>1</sup>Sources are listed on the previous page.

<sup>2</sup>Fall dormancy and disease resistance ratings are based on descriptions published by the Certified Alfalfa Seed Council and from Varietal Publications of the Association of Official Seed Certifying Agencies.

Fall Dormancy **Ratings** are based on similarity of a given variety to a check variety, with 1 = most fall dormant to 9 = nondormant.

Check Varieties	Dormancy Rating
Maverick	1
Vernal	2
5246	3
Legend	4
Archer	5

**Resistance Ratings** are based on the percentage of plants in a given variety that are resistant to the pest being evaluated.

Resistance Rating	% Resistant Plants
S, Susceptible	0–5
LR, Low Resistance	6–14
MR, Moderate Resistance	15–30
R, Resistance	31–50
HR, High Resistance	>50
— = Not tested	

BW—Bacterial Wilt

VW—Verticillium Wilt

FW—Fusarium Wilt

AN—Anthracnose

PR—Phytophthora Root Rot

PA—Pea Aphid

AP—Aphanomyces Root Rot

LH—Potato Leafhopper

The potato leafhopper standard test was recently changed to better reflect the field resistance seen. As a consequence, the resistance ratings of several varieties were downgraded. The ratings listed in this report are based on the revised resistance test.

Disease resistance ratings for other varieties can be found in the Alfalfa Varieties Leaflet from the National Alfalfa Alliance at [www.alfalfa.org](http://www.alfalfa.org).