

2014 Alfalfa Report

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Introduction

Alfalfa (*Medicago sativa*) has historically been the highest-yielding, highest-quality forage legume grown in Kentucky. It is an important part of Kentucky's cash hay enterprise and is an important component in dairy, horse, beef, and sheep diets. Choosing a good variety is a key step in establishing a stand of alfalfa. The choice of variety can impact yield, thickness of stand, and persistence.

This report provides yield data on alfalfa varieties included in current yield trials in Kentucky as well as guidelines for selecting alfalfa varieties. Table 13 shows a summary of all alfalfa varieties tested in Kentucky during the past 15 years. The UK Forage Extension Web site at www.uky.edu/Ag/Forage contains electronic versions of all forage variety testing reports from Kentucky and surrounding states as well as a large number of other forage publications.

Considerations in Selecting an Alfalfa Variety

Local adaptation and persistence. High yields in variety tests over a range of years and locations are the best indication a variety is locally adapted and persistent. Several varieties are adapted for use in Kentucky as determined from results in this report.

Winter-hardiness. Each variety has a fall dormancy (FD) rating that ranges from 1 (very dormant) to 9 (non-dormant). In general, varieties with lower dormancy ratings are more winter-

hardy but are slower to initiate growth in the spring and show reduced fall growth. Therefore, fall dormancy can lead to reduced annual yields compared to less-dormant varieties. Generally, alfalfa varieties with FD ratings of 2 to 5 will show good winter survival in Kentucky. Varieties with ratings of 6 and above are usually not winter-hardy under Kentucky conditions. Many Kentucky producers have found that FD 4 varieties provide the best combination of yield and winter survival. In recent years some companies also have begun to report a winter survival index (WS) that ranges from 1 to 6. Varieties with a WS of 1 show superior winter survival, and varieties with a WS of 6 are not winter-hardy.

Disease and pest resistance. In Kentucky, producers should use varieties that are resistant (R) to aphanomyces root rot (APH), phytophthora root rot (PRR) and anthracnose (AN) and have at least a moderate resistance (MR) to bacterial wilt (Bw) and fusarium wilt (Fw). Kentucky research indicates that aphanomyces root rot is a widespread problem in the state during stand establishment and resistance is beneficial, particularly in soils also infested with phytophthora root rot.

Phytophthora root rot is a fungal disease associated with poorly drained soils or excessive rainfall. This disease causes yellowish- to reddish-brown areas on roots and crowns that eventually become black and rotten. The top growth of infected plants appears stunted and yellow.

Anthracnose, also caused by a fungus, attacks the stems of alfalfa, preventing water flow to the rest of the shoot and causing sudden wilting. These wilted shoots have a characteristic "shepherd's crook" appearance. Anthracnose can also cause a bluish-black crown rot. Bacterial wilt and fusarium wilt are infections of the water-conducting tissues of alfalfa roots and do not cause any noticeable root rot. These diseases prevent water flow to leaves, resulting in wilting of shoots and the eventual death of infected plants. Roots infected with bacterial wilt often have a yellowish-brown discoloration of the inner woody cylinder of the taproot. Fusarium infection can be recognized by brown-to-red streaks in the inner woody cylinder of the taproot.

Aphanomyces root rot is another fungal disease associated with poorly drained soils or excessive rainfall. Affected seedlings will be stunted but remain

Table 1. Temperature and rainfall at Lexington, Kentucky in 2011, 2012, 2013 and 2014.

| | 2011 | | | | 2012 | | | | 2013 | | | | 2014 ² | | | |
|-------|------|------------------|----------|--------|------|-----|----------|-------|------|-----|----------|--------|-------------------|-----|----------|-------|
| | Temp | | Rainfall | | Temp | | Rainfall | | Temp | | Rainfall | | Temp | | Rainfall | |
| | °F | DEP ¹ | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP |
| JAN | 29 | -2 | 2.10 | -0.76 | 38 | +7 | 4.80 | +1.94 | 38 | +7 | 4.50 | +1.64 | 25 | -6 | 2.28 | -0.58 |
| FEB | 39 | +4 | 6.34 | +3.13 | 40 | +5 | 5.39 | +2.18 | 36 | +1 | 1.78 | -1.43 | 30 | -5 | 5.47 | +2.26 |
| MAR | 47 | +3 | 4.76 | +0.36 | 56 | +12 | 5.64 | +1.24 | 39 | -5 | 5.47 | +1.07 | 39 | -5 | 3.08 | -1.32 |
| APR | 58 | +3 | 12.36 | +8.48 | 56 | +1 | 3.26 | -0.62 | 55 | 0 | 4.46 | +0.58 | 58 | +3 | 5.27 | -1.89 |
| MAY | 64 | 0 | 6.72 | +2.25 | 69 | +5 | 4.02 | -0.45 | 65 | +1 | 5.23 | +0.76 | 66 | +2 | 5.72 | +1.25 |
| JUN | 74 | +2 | 2.61 | -1.05 | 73 | +1 | 2.42 | -1.24 | 72 | 0 | 7.32 | +3.66 | 75 | +3 | 2.93 | -0.73 |
| JUL | 80 | +4 | 6.29 | 1.29 | 81 | +5 | 2.50 | -2.50 | 72 | -4 | 9.33 | +4.33 | 74 | -2 | 3.18 | -1.82 |
| AUG | 75 | 0 | 2.89 | -1.04 | 75 | 0 | 1.68 | -2.25 | 72 | -3 | 3.68 | -0.25 | 76 | +1 | 6.53 | +2.60 |
| SEP | 66 | -2 | 5.52 | +2.32 | 67 | -1 | 6.40 | +3.20 | 67 | -1 | 2.21 | -0.99 | 69 | +1 | 3.63 | +4.43 |
| OCT | 55 | -2 | 4.10 | +1.53 | 55 | -2 | 2.00 | -0.57 | 55 | -2 | 7.02 | +4.45 | 57 | 0 | 5.55 | +2.98 |
| NOV | 50 | +5 | 9.53 | +6.14 | 43 | -2 | 1.81 | -0.65 | 41 | -4 | 3.06 | -0.33 | | | | |
| DEC | 41 | +5 | 5.58 | +1.60 | 42 | +6 | 9.57 | +4.94 | 36 | 0 | 4.19 | +0.21 | | | | |
| Total | | | 68.80 | +24.25 | | | 49.49 | +4.94 | | | 58.25 | +13.70 | | | 44.14 | +6.96 |

¹ DEP is departure from the long-term average.

² 2014 data is for ten months through October.

Table 2. Temperature and rainfall at Princeton, Kentucky in 2009, 2010, 2011, 2012, 2013 and 2014.

| | 2009 | | | 2010 | | | 2011 | | | 2012 | | | 2013 | | | 2014 | | | | | | | | |
|-------|------|------------------|----------|-------|----|----------|-------|--------|----------|------|-------|----------|------|-----|----------|--------|----|----------|-------|-------|----|----|-------|-------|
| | Temp | | Rainfall | Temp | | Rainfall | Temp | | Rainfall | Temp | | Rainfall | Temp | | Rainfall | Temp | | Rainfall | | | | | | |
| | °F | DEP ¹ | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP | °F | DEP | IN | DEP | | | | |
| JAN | 33 | -1 | 0.94 | -2.86 | 31 | -3 | 3.06 | -0.74 | 32 | -2 | 2.35 | -1.45 | 40 | +6 | 3.01 | -0.79 | 38 | +4 | 6.31 | +2.51 | 30 | -4 | 1.70 | -2.10 |
| FEB | 42 | +4 | 3.28 | -1.15 | 33 | -5 | 1.54 | -2.89 | 40 | +2 | 5.71 | +1.28 | 54 | +6 | 1.73 | -2.70 | 39 | +1 | 3.09 | -1.34 | 32 | -6 | 4.75 | +0.32 |
| MAR | 53 | +6 | 2.89 | -2.05 | 48 | +1 | 3.24 | -1.70 | 50 | +3 | 5.54 | +0.60 | 60 | +13 | 3.27 | -1.67 | 42 | -5 | 4.34 | -0.60 | 43 | -4 | 7.43 | -0.51 |
| APR | 58 | -1 | 5.35 | +0.55 | 62 | 3 | 3.3 | -1.54 | 61 | +2 | 16.15 | +11.35 | 60 | +1 | 0.62 | -4.18 | 57 | -2 | 5.72 | +0.92 | 59 | 0 | 8.5 | +3.70 |
| MAY | 67 | 0 | 6.14 | +1.18 | 69 | +2 | 10.41 | +5.45 | 66 | -1 | 7.22 | +2.26 | 71 | +4 | 1.36 | -3.60 | 66 | -1 | 4.26 | -0.70 | 68 | +1 | 1.96 | -3.00 |
| JUN | 77 | +2 | 7.97 | +4.12 | 79 | 4 | 4.82 | 0.97 | 77 | +2 | 4.60 | +0.75 | 74 | -5 | 2.38 | -1.47 | 74 | -1 | 7.55 | +3.70 | 76 | +1 | 3.25 | -0.60 |
| JUL | 74 | -4 | 7.45 | +3.16 | 80 | 2 | 2.73 | -1.56 | 81 | +3 | 2.98 | -1.31 | 83 | +5 | 1.40 | -2.89 | 75 | -3 | 4.44 | +0.15 | 73 | -5 | 1.56 | -2.73 |
| AUG | 75 | -2 | 2.44 | -1.60 | 81 | 4 | 2.46 | -1.55 | 77 | 0 | 3.95 | -0.06 | 77 | 0 | 4.27 | +0.26 | 75 | -2 | 5.59 | +1.58 | 78 | 0 | 9.33 | +5.32 |
| SEP | 71 | 0 | 4.61 | +1.28 | 72 | 1 | 0.94 | -2.39 | 68 | -3 | 3.86 | +0.53 | 69 | -2 | 5.45 | +1.82 | 71 | 0 | 5.37 | +2.04 | 69 | -2 | 0.97 | -2.36 |
| OCT | 55 | -4 | 9.08 | +6.03 | 60 | +1 | 0.97 | -2.08 | 57 | -2 | 1.35 | -1.70 | 57 | -2 | 2.94 | -0.11 | 59 | 0 | 4.04 | +0.99 | 59 | 0 | 4.36 | +1.31 |
| NOV | 52 | +5 | 1.50 | -3.13 | 49 | +2 | 3.98 | -1.65 | 51 | +4 | 9.12 | +4.49 | 45 | -2 | 2.11 | -2.52 | 44 | -3 | 1.37 | -3.26 | | | | |
| DEC | 36 | -3 | 2.73 | -2.31 | 32 | -7 | 1.57 | -3.47 | 42 | +3 | 6.13 | +1.09 | 45 | +6 | 4.77 | -0.27 | 38 | -1 | 5.41 | +0.37 | | | | |
| Total | | | 54.31 | +3.22 | | | 39.02 | -12.11 | | | 68.96 | +17.83 | | | 33.01 | -18.12 | | | 57.49 | +6.36 | | | 40.81 | -0.65 |

¹ DEP is departure from the long-term average.

² 2014 data is for ten months through October.

Table 3. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown September 14, 2011 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ Oct 11, 2011 | Percent Stand | | | | | | | | | | Yield (tons/acre) | | | | | | | | | | | | | | | |
|------------------------|---|---------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------------------|-------|-------|--------|--------|--------|--------|--------|-------|-------|--------------|-------|-------|-------|--------|------|
| | | 2011 | | 2012 | | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | | 2013 | | 2014 | | 3-year Total | | | | | |
| | | Oct 11 | Mar 21 | Oct 11 | Mar 21 | Oct 11 | Mar 20 | Sep 26 | Apr 1 | Oct 6 | Oct 6 | Oct 6 | Oct 6 | May 8 | Jun 10 | Jul 17 | Aug 15 | Sep 18 | Sep 18 | Total | Total | | | | | | |
| 6422Q | 4.5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.60 | 1.16 | 0.79 | 1.07 | 6.21 | 18.83* | |
| TripleTrust 500 | 3.9 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.56 | 1.01 | 0.66 | 1.18 | 5.90 | 18.39* | |
| Rebound 6.0 | 4.9 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.50 | 1.01 | 0.73 | 1.11 | 5.91 | 18.10* | |
| 55V48 | 4.6 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.55 | 1.02 | 0.64 | 1.04 | 5.83 | 18.01* | |
| WL 363HQ | 4.4 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.46 | 0.94 | 0.71 | 1.06 | 5.63 | 17.81* | |
| Kingfisher 4020 | 3.8 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.54 | 0.95 | 0.68 | 1.16 | 5.72 | 17.74* | |
| Ameristand 403T | 4.0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.48 | 0.93 | 0.68 | 1.23 | 5.75 | 17.40* | |
| 54Q32 | 4.1 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.41 | 0.94 | 0.56 | 0.98 | 5.38 | 16.75 | |
| 53H92 | 4.1 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.43 | 0.90 | 0.56 | 1.04 | 5.29 | 16.57 | |
| Saranac AR (certified) | 4.0 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.32 | 0.86 | 0.59 | 1.27 | 5.40 | 16.43 | |
| Arc (certified) | 4.5 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.27 | 0.91 | 0.62 | 1.23 | 5.25 | 16.11 | |
| Buffalo | 4.8 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.29 | 0.90 | 0.54 | 1.13 | 5.27 | 15.48 | |
| Mean | 4.3 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1.44 | 0.96 | 0.65 | 1.13 | 5.62 | 17.30 | |
| CV,% | 13.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.24 | 9.23 | 12.08 | 24.10 | 15.56 | 9.99 | 7.06 |
| LSD _{0.05} | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.19 | 0.17 | 0.22 | 0.25 | 0.81 | 1.76 | |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 4. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown August 9, 2012 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ Sep 27, 2012 | Percent Stand | | | | | Yield (tons/acre) | | | | | | | 2-year Total |
|--|---|---------------|--------|--------|-------|-------|-------------------|-------|--------|--------|--------|--------|-------|--------------|
| | | 2012 | | 2013 | | 2014 | 2013 | 2014 | | | | | | |
| | | Sep 27 | Mar 20 | Sep 26 | Apr 1 | Oct 6 | Total | May 8 | Jun 10 | Jul 17 | Aug 15 | Sep 18 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | | | |
| 55V50 | 5.0 | 100 | 100 | 100 | 100 | 100 | 8.65 | 1.79 | 1.68 | 1.22 | 0.73 | 1.07 | 6.48 | 15.13* |
| Phoenix | 4.8 | 98 | 99 | 97 | 95 | 97 | 8.58 | 1.68 | 1.57 | 1.22 | 0.72 | 1.07 | 6.27 | 14.85* |
| Radiance HD | 4.5 | 99 | 100 | 100 | 98 | 97 | 8.28 | 1.60 | 1.56 | 1.30 | 0.81 | 1.05 | 6.32 | 14.60* |
| Bulldog-505 | 5.0 | 100 | 100 | 99 | 98 | 98 | 8.00 | 1.60 | 1.53 | 1.17 | 0.79 | 1.16 | 6.24 | 14.24* |
| Evermore | 4.8 | 100 | 100 | 100 | 100 | 100 | 8.30 | 1.77 | 1.46 | 1.09 | 0.61 | 0.98 | 5.92 | 14.22* |
| 4030 | 4.5 | 99 | 100 | 99 | 98 | 99 | 8.20 | 1.60 | 1.55 | 1.06 | 0.72 | 1.03 | 5.96 | 14.16* |
| Caliber | 4.3 | 98 | 100 | 100 | 99 | 99 | 8.14 | 1.71 | 1.51 | 1.08 | 0.59 | 1.03 | 5.92 | 14.05* |
| Ameristand 403T | 5.0 | 100 | 100 | 100 | 98 | 98 | 8.04 | 1.71 | 1.51 | 0.99 | 0.65 | 1.09 | 5.94 | 13.98* |
| Withstand | 4.8 | 100 | 100 | 100 | 98 | 98 | 7.84 | 1.68 | 1.54 | 1.11 | 0.75 | 0.99 | 6.07 | 13.91* |
| Saranac AR (certified) | 4.8 | 100 | 100 | 96 | 96 | 96 | 7.86 | 1.58 | 1.43 | 1.08 | 0.65 | 1.08 | 5.83 | 13.68 |
| Arc (certified) | 4.9 | 100 | 100 | 96 | 94 | 95 | 7.40 | 1.54 | 1.44 | 1.00 | 0.63 | 1.07 | 5.68 | 13.08 |
| Experimental Varieties | | | | | | | | | | | | | | |
| CW 085028 | 5.0 | 100 | 100 | 100 | 100 | 100 | 8.04 | 1.58 | 1.67 | 1.30 | 0.83 | 1.08 | 6.47 | 14.51* |
| CW 065030 | 4.8 | 100 | 100 | 100 | 100 | 100 | 7.81 | 1.58 | 1.66 | 1.29 | 0.76 | 1.08 | 6.37 | 14.18* |
| GA-ALFG-1 | 5.0 | 100 | 99 | 97 | 97 | 96 | 7.21 | 1.53 | 1.47 | 1.09 | 0.55 | 0.99 | 5.63 | 12.84 |
| Mean | 4.8 | 99 | 100 | 99 | 98 | 98 | 8.02 | 1.64 | 1.54 | 1.14 | 0.70 | 1.06 | 6.08 | 14.10 |
| CV,% | 6.2 | 1 | 1 | 2 | 2 | 2 | 7.46 | 8.44 | 10.64 | 11.89 | 16.34 | 12.28 | 8.38 | 6.92 |
| LSD,0.05 | 0.4 | 2 | 1 | 3 | 2 | 3 | 0.86 | 0.20 | 0.23 | 0.19 | 0.16 | 0.19 | 0.73 | 1.40 |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

upright, unlike those with symptoms of damping off. In established plants, root symptoms are not as well defined as those for phytophthora root rot, but brown lesions on the taproot indicate where lateral roots were destroyed. This disease can be associated with phytophthora root rot, and together they may form a root disease complex. Aphanomyces root rot is known to affect new seedings

in Kentucky, but it is unclear how it affects established alfalfa. In years with overly cool and wet spring weather, alfalfa stands have suffered great damage due to aphanomyces when planted with varieties susceptible to this disease.

Certain alfalfa varieties are reported to have resistance to sclerotinia crown and stem rot; however, research at the University of Kentucky has shown that

some of these varieties have only limited resistance when conditions are ideal for disease development. Therefore, the best prevention against sclerotinia is to plant by mid-August if fall seeding or plant in the spring. If seeding in the fall, sclerotinia-resistant varieties can provide additional insurance.

Seed quality. Buy premium-quality seed that is high in germination and

Table 5. Dry matter yields, seedling vigor and stand persistence of Roundup Ready alfalfa varieties sown August 9, 2012 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ Sep 27, 2012 | Percent Stand | | | | | Yield (tons/acre) | | | | | | | 2-year Total |
|--|---|---------------|--------|--------|-------|-------|-------------------|-------|--------|--------|--------|--------|-------|--------------|
| | | 2012 | | 2013 | | 2014 | 2013 | 2014 | | | | | | |
| | | Sep 27 | Mar 20 | Sep 26 | Apr 1 | Oct 6 | Total | May 8 | Jun 10 | Jul 17 | Aug 15 | Sep 18 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | | | |
| Tonnica RR | 4.6 | 100 | 100 | 100 | 97 | 96 | 6.37 | 1.36 | 1.53 | 1.25 | 0.82 | 1.08 | 6.05 | 12.42* |
| 6516R RR | 4.8 | 99 | 99 | 99 | 98 | 97 | 5.87 | 1.27 | 1.56 | 1.40 | 0.89 | 1.09 | 6.21 | 12.08* |
| WL 372HQ RR | 4.1 | 100 | 100 | 100 | 98 | 99 | 5.92 | 1.30 | 1.48 | 1.25 | 0.85 | 1.01 | 5.88 | 11.80* |
| Stratica RR | 3.6 | 94 | 95 | 95 | 91 | 96 | 6.10 | 1.38 | 1.50 | 1.07 | 0.69 | 1.00 | 5.64 | 11.74* |
| DKA46-16 RR | 4.5 | 99 | 100 | 100 | 99 | 100 | 5.90 | 1.38 | 1.48 | 1.01 | 0.73 | 1.00 | 5.61 | 11.51* |
| AphaTron RR | 4.3 | 100 | 100 | 100 | 99 | 98 | 5.66 | 1.26 | 1.49 | 1.16 | 0.67 | 0.92 | 5.50 | 11.16* |
| Ameristand 405T RR | 4.5 | 100 | 100 | 100 | 99 | 98 | 5.92 | 1.31 | 1.43 | 0.92 | 0.69 | 0.81 | 5.15 | 11.08 |
| WL 355 RR | 3.9 | 99 | 100 | 100 | 97 | 99 | 5.46 | 1.31 | 1.51 | 0.93 | 0.76 | 1.02 | 5.54 | 10.99 |
| Ameristand 455TQ RR | 4.1 | 100 | 100 | 100 | 99 | 99 | 5.61 | 1.32 | 1.50 | 1.03 | 0.60 | 0.89 | 5.33 | 10.94 |
| 54R02 RR | 4.5 | 94 | 96 | 97 | 97 | 97 | 5.45 | 1.32 | 1.53 | 1.04 | 0.70 | 0.88 | 5.46 | 10.91 |
| Consistency 4.10 RR | 4.1 | 98 | 98 | 98 | 97 | 98 | 5.62 | 1.27 | 1.39 | 0.88 | 0.74 | 0.97 | 5.25 | 10.87 |
| DKA41-18 RR | 4.1 | 98 | 99 | 99 | 95 | 97 | 5.45 | 1.30 | 1.43 | 0.90 | 0.73 | 1.04 | 5.41 | 10.87 |
| WL 356HQ RR | 4.1 | 100 | 100 | 100 | 97 | 97 | 5.50 | 1.19 | 1.34 | 1.11 | 0.66 | 0.87 | 5.17 | 10.66 |
| Ameristand 433T RR | 3.4 | 92 | 94 | 93 | 91 | 92 | 5.27 | 1.33 | 1.43 | 0.91 | 0.59 | 0.90 | 5.18 | 10.45 |
| Alfagraze 300 RR | 3.6 | 97 | 98 | 98 | 96 | 97 | 4.89 | 1.28 | 1.27 | 0.76 | 0.64 | 0.98 | 4.92 | 9.80 |
| Mean | 4.2 | 98 | 98 | 98 | 96 | 97 | 5.67 | 1.31 | 1.46 | 1.04 | 0.72 | 0.96 | 5.48 | 11.15 |
| CV,% | 14.9 | 2 | 2 | 2 | 2 | 2 | 10.03 | 13.04 | 11.39 | 23.49 | 19.50 | 16.34 | 10.36 | 8.46 |
| LSD,0.05 | 0.9 | 3 | 2 | 2 | 3 | 2 | 0.81 | 0.24 | 0.24 | 0.35 | 0.20 | 0.22 | 0.81 | 1.35 |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

purity and free from weed seed. Buy certified seed or proprietary seed of an improved variety. An improved variety is one that has performed well in independent trials, such as those that are reported in this publication or others like it. Other information on the label will include the test date, which must be within the previous nine months, the level of germination, and the percentage of other crop and weed seed. Order seed well in advance of planting time to assure it will be available when needed.

Description of the Tests

Alfalfa variety tests were established at Lexington (2011, 2012 and 2014) and Princeton (2009, 2011 and 2013) as part of the forage variety testing program. The soils are well suited to alfalfa because they are generally well drained silt loam soils (Maury and Crider at Lexington and Princeton, respectively).

Plots were 5 feet by 20 feet in a randomized complete block design with four replications with a harvested plot area of 5 feet by 15 feet. In each test, 20 pounds of seed per acre were planted into a prepared seedbed using a disk drill. Plots were harvested with a sickle-type forage plot harvester. First cuttings in the seedling year were delayed to allow alfalfa to reach maturity, indicated by full bloom. Otherwise, harvests were taken when the alfalfa was in the bud to early flower stage. Fresh weight samples were taken at each harvest to calculate percentage of dry matter production. Management of all tests for establishment, fertility (P, K, Boron and lime based on regular soil tests), pest control, and harvest management was according to Kentucky Co-operative Extension recommendations. Pests (weeds and insects) were controlled so that they would not limit yield or persistence.

Results and Discussion

Weather data for Lexington and Princeton are presented in Tables 1 and 2. Yield data (on a dry-matter basis) for all tests are reported in Tables 3 through 11 and 14. Stated yields are adjusted for percentage of weeds; therefore, the value listed is for the crop only. Varieties are listed in order from highest to lowest total production (for the life of the test).

Table 6. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown April 10, 2014 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ May 27, 2014 | Percent Stand | | Yield (tons/acre) | | |
|--|---|---------------|-------|-------------------|--------|-------|
| | | 2014 | | 2014 | | |
| | | May 27 | Oct 6 | Jul 18 | Sep 18 | Total |
| Commercial Varieties—Available for Farm Use | | | | | | |
| Fierce | 4.3 | 95 | 92 | 0.41 | 1.10 | 1.51* |
| Ameristand 403T | 3.5 | 94 | 88 | 0.46 | 1.01 | 1.47* |
| Saranac AR (certified) | 3.8 | 95 | 92 | 0.40 | 0.96 | 1.36* |
| Bulldog 505 | 3.5 | 93 | 85 | 0.32 | 0.83 | 1.16* |
| Contender | 3.5 | 94 | 91 | 0.36 | 0.75 | 1.10* |
| Caliber | 3.5 | 95 | 91 | 0.35 | 0.71 | 1.06* |
| Evermore | 3.3 | 85 | 86 | 0.30 | 0.73 | 1.03* |
| L-455HD | 4.0 | 94 | 87 | 0.24 | 0.52 | 0.76 |
| Experimental Varieties | | | | | | |
| AFX095005 | 3.8 | 92 | 89 | 0.37 | 0.80 | 1.18* |
| NF11ALF006 | 3.5 | 88 | 78 | 0.36 | 0.80 | 1.16* |
| LS 905 | 3.3 | 86 | 89 | 0.36 | 0.75 | 1.11* |
| AM-09-600 | 3.5 | 93 | 85 | 0.38 | 0.71 | 1.09* |
| AFX095026 | 4.0 | 97 | 95 | 0.32 | 0.58 | 0.90 |
| AM-14-900 | 3.5 | 87 | 79 | 0.29 | 0.47 | 0.77 |
| | | | | | | |
| Mean | 3.6 | 92 | 87 | 0.35 | 0.77 | 1.12 |
| CV,% | 35.0 | 9 | 12 | 37.48 | 41.44 | 37.91 |
| LSD,0.05 | 2.0 | 12 | 15 | 0.19 | 0.45 | 0.61 |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 7. Dry matter yields, seedling vigor and stand persistence of Roundup Ready alfalfa varieties sown April 10, 2014 at Lexington, Kentucky.

| Variety | Seedling Vigor ¹ May 27, 2014 | Percent Stand | | Yield (tons/acre) | | |
|--|---|---------------|-------|-------------------|--------|-------|
| | | 2014 | | 2014 | | |
| | | May 27 | Oct 6 | Jul 18 | Sep 18 | Total |
| Commercial Varieties—Available for Farm Use | | | | | | |
| AphaTron RR | 4.0 | 95 | 95 | 0.50 | 0.87 | 1.37* |
| Ameristand 405T RR | 3.8 | 89 | 91 | 0.44 | 0.91 | 1.36* |
| WL 373HQ RR | 3.8 | 96 | 97 | 0.49 | 0.75 | 1.24* |
| Ameristand 433T RR | 3.5 | 93 | 94 | 0.33 | 0.76 | 1.09* |
| 55VR06 RR | 3.3 | 94 | 94 | 0.38 | 0.67 | 1.04* |
| 428 RR | 2.5 | 79 | 84 | 0.29 | 0.69 | 0.98* |
| Alfagraze 600 RR | 3.3 | 88 | 91 | 0.32 | 0.66 | 0.98* |
| 6516R RR | 3.8 | 95 | 95 | 0.35 | 0.58 | 0.93* |
| Alfagraze 300 RR | 2.8 | 94 | 91 | 0.28 | 0.57 | 0.85* |
| 54R02 RR | 3.5 | 90 | 85 | 0.26 | 0.59 | 0.84 |
| Tonnica RR | 3.3 | 91 | 91 | 0.26 | 0.56 | 0.83 |
| DKA46-16 RR | 3.3 | 96 | 95 | 0.25 | 0.48 | 0.73 |
| | | | | | | |
| Mean | 3.4 | 91 | 92 | 0.35 | 0.67 | 1.02 |
| CV,% | 30.8 | 8 | 8 | 50.67 | 32.63 | 35.48 |
| LSD,0.05 | 1.5 | 11 | 11 | 0.25 | 0.32 | 0.52 |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Experimental varieties are listed separately at the bottom of the tables and are not available commercially. Yields are given by cutting date for 2014 and as total annual production.

Statistical analyses were performed on all alfalfa yield data (including experimentals) to determine if the apparent differences are due to variety. Varieties

not significantly different from the highest numerical value in a column are marked with an asterisk (*). To determine if two varieties are statistically different, compare the difference between the two varieties to the Least Significant Difference (LSD) at the bottom of the column. If the difference is equal to or greater than the LSD, the varieties are truly different

Summary

Consistent production of high yields of alfalfa is the result of good variety selection along with the implementation of good management techniques. For further information about alfalfa management, refer to the following College of Agriculture publications, available at the local county extension office or in the "Publications" section of the UK Forage Web site at www.uky.edu/Ag/Forage.

- Alfalfa: The Queen of the Forage Crops (AGR-76)
- Establishing Forage Crops (AGR-64)
- Inoculation of Forage Legumes (AGR-90)
- Grain and Forage Crop Guide for Kentucky (AGR-18)
- Lime and Fertilizer Recommendations (AGR-1)
- Weed Control Strategies for Alfalfa and Other Forage Legume Crops (AGR-148)
- Insect Management Recommendations for Field Crops and Livestock (ENT-17)
- Kentucky Plant Disease Management Guide for Forage Legumes (PPA-10D)
- Alfalfa Hay: Quality Makes the Difference (AGR-137)
- "Emergency" Inoculation for Poorly Nodulated Legumes (PPFS-AG-F-04)
- Growing Alfalfa in the South, a publication of the National Alfalfa & Forage Alliance, www.alfalfa.org/pdf/alfalfainthesouth.pdf
- Alfalfa Management Guide, www.crops.org/files/publications/alfalfa-management-guide.pdf
- Alfalfa Analyst (ID guide to alfalfa disease and insect damage and soil fertility deficiencies), www.alfalfa.org/pdf/AlfalfaAnalyst.pdf

About the Authors

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Table 9. Dry matter yields and stand persistence of Roundup Ready alfalfa varieties sown April 7, 2011 at Princeton, Kentucky.¹

| Variety | Percent Stand | | | | | | | | | | | | Yield (tons/acre) | | | | | | | | | | | | 4-year Total |
|--|---------------|--------|--------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|-------|--|--------------|
| | 2011 | | | 2012 | | | 2013 | | | 2014 | | | 2011 | | | 2012 | | | 2013 | | | 2014 | | | |
| | Jun 14 | Oct 24 | Mar 21 | Oct 29 | Mar 19 | Oct 8 | Apr 4 | Oct 22 | Total | 2011 | Total | 2012 | Total | 2013 | Total | 2014 | Total | May 20 | Jun 18 | Jul 16 | Aug 14 | Sep 17 | Total | | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54R02 RR | 94 | 94 | 96 | 97 | 94 | 91 | 70 | 83 | 1.72 | 4.58 | 7.17 | 1.48 | 1.34 | 0.71 | 0.31 | 0.53 | 4.37 | 17.85* | | | | | | | |
| WL 355 RR | 98 | 98 | 97 | 98 | 96 | 96 | 60 | 85 | 1.43 | 4.01 | 6.51 | 1.39 | 1.29 | 0.66 | 0.35 | 0.60 | 4.75 | 17.00* | | | | | | | |
| DKA41-18 RR | 98 | 97 | 96 | 97 | 96 | 94 | 68 | 88 | 1.48 | 4.16 | 6.70 | 1.23 | 1.23 | 0.63 | 0.29 | 0.54 | 4.13 | 16.84* | | | | | | | |
| Consistency 4.10 RR | 99 | 99 | 99 | 99 | 98 | 96 | 70 | 86 | 1.64 | 4.26 | 6.46 | 1.37 | 1.22 | 0.68 | 0.39 | 0.57 | 4.23 | 16.60* | | | | | | | |
| Ameristand 405T RR | 96 | 96 | 97 | 96 | 96 | 94 | 69 | 92 | 1.47 | 3.95 | 6.99 | 1.37 | 1.16 | 0.71 | 0.29 | 0.53 | 4.06 | 16.46* | | | | | | | |
| Alfagraz 300 RR | 94 | 94 | 93 | 93 | 92 | 89 | 45 | 75 | 1.24 | 3.88 | 6.00 | 1.02 | 1.13 | 0.59 | 0.16 | 0.38 | 3.64 | 15.71 | | | | | | | |
| Experimental Varieties | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG R47M120 RR | 94 | 97 | 96 | 97 | 97 | 94 | 60 | 90 | 1.61 | 4.30 | 6.90 | 1.47 | 1.29 | 0.77 | 0.39 | 0.64 | 4.57 | 17.38* | | | | | | | |
| FG R46M162 RR | 98 | 98 | 98 | 94 | 93 | 92 | 66 | 90 | 1.53 | 3.92 | 6.60 | 1.24 | 1.29 | 0.62 | 0.27 | 0.56 | 4.35 | 16.79* | | | | | | | |
| FG R47M312 RR | 92 | 94 | 94 | 95 | 93 | 93 | 69 | 89 | 1.41 | 4.04 | 6.65 | 1.44 | 1.18 | 0.74 | 0.38 | 0.58 | 4.32 | 16.42* | | | | | | | |
| FG R47M319 RR | 98 | 98 | 99 | 98 | 95 | 93 | 68 | 90 | 1.59 | 4.05 | 6.10 | 1.42 | 1.21 | 0.70 | 0.36 | 0.59 | 4.28 | 16.02* | | | | | | | |
| Mean | 96 | 96 | 96 | 96 | 95 | 93 | 64 | 87 | 1.51 | 4.11 | 6.61 | 1.34 | 1.24 | 0.68 | 0.32 | 0.55 | 4.27 | 16.72 | | | | | | | |
| CV% | 3 | 3 | 2 | 2 | 2 | 3 | 20 | 11 | 13.66 | 10.05 | 7.26 | 15.01 | 11.27 | 14.53 | 31.85 | 21.11 | 11.84 | 7.13 | | | | | | | |
| LSD,0.05 | 4 | 4 | 3 | 3 | 3 | 5 | 19 | 14 | 0.30 | 0.60 | 0.70 | 0.29 | 0.21 | 0.15 | 0.15 | 0.17 | 0.79 | 1.85 | | | | | | | |

¹ This trial was sprayed with Roundup once in 2012, twice in 2013 and twice in 2014.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 10. Dry matter yields, seedling vigor and stand persistence of Roundup Ready alfalfa varieties sown April 9, 2013 at Princeton, Kentucky.¹

| Variety | Seedling Vigor ² May 15, 2013 | Percent Stand | | | | Yield (tons/acre) | | | | | | | 2-year Total |
|--|---|---------------|-------|-------|--------|-------------------|--------|--------|--------|--------|--------|-------|--------------|
| | | 2013 | | 2014 | | 2013 | 2014 | | | | | | |
| | | May 15 | Oct 8 | Apr 4 | Oct 22 | Total | May 20 | Jun 18 | Jul 16 | Aug 14 | Sep 17 | Total | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | | |
| 428 RR | 2.8 | 96 | 96 | 81 | 95 | 2.66 | 1.85 | 1.94 | 1.16 | 0.64 | 0.79 | 6.37 | 9.03* |
| WL 372HQ RR | 3.5 | 98 | 83 | 59 | 87 | 2.38 | 1.85 | 1.80 | 0.91 | 0.55 | 0.68 | 6.21 | 8.49* |
| 6516R RR | 4.1 | 99 | 77 | 45 | 72 | 2.32 | 1.91 | 1.74 | 0.73 | 0.50 | 0.61 | 6.29 | 8.44* |
| DKA46-16 RR | 3.8 | 97 | 85 | 70 | 83 | 2.22 | 1.90 | 1.76 | 0.82 | 0.41 | 0.58 | 5.84 | 8.15* |
| AphaTron RR | 4.1 | 98 | 91 | 60 | 89 | 2.67 | 1.59 | 1.60 | 0.89 | 0.59 | 0.67 | 5.64 | 8.10* |
| Tonnica RR | 3.6 | 98 | 95 | 74 | 91 | 2.42 | 1.75 | 1.60 | 0.97 | 0.55 | 0.76 | 5.62 | 8.04* |
| Ameristand 455TQ RR | 3.9 | 100 | 96 | 72 | 96 | 2.49 | 1.66 | 1.51 | 1.00 | 0.57 | 0.75 | 5.48 | 7.98* |
| Alfagraz 300RR | 2.6 | 76 | 86 | 70 | 86 | 2.66 | 2.00 | 1.39 | 0.84 | 0.43 | 0.54 | 5.20 | 7.85* |
| Stratica RR | 3.0 | 96 | 97 | 88 | 95 | 2.36 | 1.72 | 1.66 | 0.92 | 0.55 | 0.62 | 5.47 | 7.83* |
| WL 356HQ RR | 3.1 | 96 | 95 | 55 | 93 | 2.61 | 1.62 | 1.47 | 0.89 | 0.54 | 0.69 | 5.20 | 7.81* |
| Ameristand 405T RR | 3.0 | 96 | 94 | 70 | 93 | 2.57 | 1.61 | 1.57 | 0.87 | 0.39 | 0.67 | 5.11 | 7.68 |
| Ameristand 433T RR | 3.1 | 95 | 93 | 60 | 87 | 2.43 | 1.55 | 1.46 | 0.77 | 0.45 | 0.66 | 4.89 | 7.32 |
| Mean | 3.4 | 95 | 91 | 67 | 89 | 2.48 | 1.74 | 1.61 | 0.90 | 0.51 | 0.67 | 5.56 | 8.03 |
| CV,% | 24.2 | 12 | 13 | 34 | 13 | 13.40 | 15.43 | 13.47 | 24.34 | 28.06 | 24.11 | 10.46 | 9.69 |
| LSD,0.05 | 1.0 | 16 | 16 | 33 | 16 | 0.48 | 0.40 | 0.34 | 0.31 | 0.21 | 0.23 | 0.91 | 1.22 |

¹ This trial was sprayed with Roundup twice in 2013 and twice in 2014.

² Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 11. Dry matter yields and stand persistence of alfalfa varieties sown August 23, 2013 at Princeton, Kentucky.

| Variety | Percent Stand | | | Yield (tons/acre) | | | | | |
|--|---------------|-------|--------|-------------------|--------|--------|--------|--------|-------|
| | 2013 | 2014 | | 2014 | | | | | |
| | Sep 17 | Apr 4 | Oct 22 | May 20 | Jun 18 | Jul 16 | Aug 14 | Sep 17 | Total |
| Commercial Varieties—Available for Farm Use | | | | | | | | | |
| GA-535 | 100 | 100 | 100 | 2.81 | 2.65 | 1.46 | 1.12 | 0.95 | 8.99* |
| FSG 424 | 100 | 100 | 100 | 2.77 | 2.31 | 1.57 | 1.14 | 1.17 | 8.96* |
| 55V50 | 100 | 100 | 100 | 2.84 | 2.48 | 1.49 | 0.98 | 1.03 | 8.81* |
| DG 4210 | 100 | 99 | 100 | 2.90 | 2.34 | 1.40 | 0.95 | 0.97 | 8.56* |
| Bulldog-505 | 100 | 100 | 100 | 2.81 | 2.36 | 1.43 | 0.92 | 1.01 | 8.52* |
| FSG 403LR | 100 | 100 | 100 | 2.86 | 2.45 | 1.42 | 0.79 | 0.85 | 8.36* |
| Saranac AR (certified) | 100 | 96 | 100 | 2.80 | 2.33 | 1.21 | 0.87 | 0.95 | 8.16* |
| L455HD | 100 | 99 | 100 | 2.71 | 2.23 | 1.40 | 0.90 | 0.90 | 8.14* |
| Arc (certified) | 100 | 98 | 99 | 2.98 | 2.39 | 1.19 | 0.72 | 0.76 | 8.05* |
| FSG 524 | 100 | 99 | 98 | 2.68 | 2.25 | 1.29 | 0.80 | 0.86 | 7.87* |
| Optimus | 100 | 100 | 100 | 2.84 | 2.14 | 1.25 | 0.71 | 0.80 | 7.74* |
| Ameristand 403T | 100 | 100 | 100 | 2.85 | 2.22 | 1.21 | 0.66 | 0.79 | 7.74* |
| Buffalo | 94 | 85 | 93 | 2.69 | 2.26 | 1.05 | 0.61 | 0.81 | 7.42 |
| Experimental Varieties | | | | | | | | | |
| GA-ALFG-1 | 100 | 100 | 100 | 2.83 | 2.55 | 1.28 | 0.77 | 0.93 | 8.36* |
| CW104038 | 100 | 100 | 100 | 2.87 | 2.35 | 1.15 | 0.69 | 0.96 | 8.01* |
| LS 804 | 100 | 100 | 99 | 2.72 | 2.22 | 1.34 | 0.79 | 0.90 | 7.97* |
| LS 905 | 100 | 100 | 100 | 2.71 | 2.08 | 1.32 | 0.95 | 0.86 | 7.92* |
| Mean | 100 | 98 | 99 | 2.80 | 2.33 | 1.32 | 0.84 | 0.91 | 8.21 |
| CV,% | 3 | 7 | 3 | 8.01 | 11.37 | 17.60 | 37.99 | 22.88 | 12.29 |
| LSD,0.05 | 4 | 11 | 4 | 0.32 | 0.38 | 0.33 | 0.46 | 0.30 | 1.44 |

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.

Table 12. (continued)

| Variety | Variety Characteristics ¹ | | | | | | | | | | Lexington | | | | | | | | | | Princeton | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--------------------------------------|----|----|----|-----|-----|----|----|----|----|-------------------|----|------|----|------|----|------|----|------|----|-----------|----|------|----|------|----|------|----|------|----|------|----|------|----|----|----|----|----|--|--|
| | Disease Resistance ² | | | | | - | | | | | 2011 ³ | | 2012 | | 2013 | | 2014 | | 2015 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | | | | | | |
| | FD ⁴ | Bw | Fw | An | PRR | APH | HR | HR | HR | HR | HR | 12 | 13 | 14 | 13 | 14 | 14 | 14 | 14 | 14 | 09 | 10 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 13 | 14 | 13 | 14 | | |
| Proprietor | Legacy Seeds, Inc. | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L-455HD | Brett Young | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Optimus | FFR/Southern States | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phoenix | Ampac Seed /Cisco | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RadianceHD | Croplan Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rebound 5.0 | Croplan Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rebound 6.0 | Croplan Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Saranac AR (certified) | Public | MR | R | HR | LR | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stratica RR | Croplan Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6422Q | NEXGROW | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TripleTrust 500 | Central Farm Supply | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tonnica RR | Croplan Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Withstand | FFR/Southern States | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 354HQ | W-L Research | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 355 RR | W-L Research | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 356HQ RR | W-L Research | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 363HQ | W-L Research | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 372HQ RR | W-L Research | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WL 373HQ RR | W-L Research | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Experimental Varieties | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AFX095005 | Alforex Seeds | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AFX095026 | Alforex Seeds | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AM-09-600 | Ampac Seed /Cisco | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AM-14-900 | Ampac Seed /Cisco | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BYEXP 723 | Brett Young | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CW 055023/PGI 557 | Producers Choice | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CW 065030 | Beck's Hybrids | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CW 085028 | Cal/West Seeds | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CW104038 | Producers Choice | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG R46M162 RR | Forage Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG R47M120 RR | Forage Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG R47M312 RR | Forage Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG R47M319 RR | Forage Genetics | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA-ALFG-1 | Univ. of Georgia | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA-APGC | Univ. of Georgia | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA-MPX | Univ. of Georgia | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 804 | Legacy Seeds, Inc. | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LS 905 | Legacy Seeds, Inc. | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NFT1ALF006 | Noble Foundation | 6 | - | - | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TS 4013 | Producers Choice | HR | HR | HR | HR | HR | HR | HR | HR | HR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

1 Variety characteristics: FD = fall dormancy, Bw = bacterial wilt, Fw = fusarium wilt, An = anthracnose, PRR = phytophthora root rot, APH = aphanomyces root rot, information provided by seed companies.

2 Disease resistance: S = susceptible, LR = low resistance, MR = moderate resistance, R = resistance, HR = high resistance.

3 Establishment year.

4 Fall dormancy-check varieties: 1 = Spredor 3, 2 = Vernal, 3 = Ranger, 4 = Saranac, 5 = DuPuits.

5 These are Roundup Ready alfalfa trials.

6 x in the box indicates the variety was in the test but yielded significantly less than the top-ranked variety in the test.

Open boxes indicate the variety was not in the test.

* Not significantly different from the top-ranked variety in the test.

Table 14. Dry matter yields, seedling vigor and stand persistence of alfalfa varieties sown April 17, 2009 at Princeton, Kentucky.

| Variety | Seedling Vigor ¹ May 12, 2009 | Percent Stand | | | | | | | | | | | | Yield (tons/acre) | | | | | | 6-year Total | | | | | | | | |
|--|---|---------------|--------|--------|--------|-------|--------|--------|--------|--------|-------|-------|--------|-------------------|--------|--------|--------|--------|-------|--------------|-------|-------|-------|-------|-------|-------|--------|--------|
| | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | | 2017 | | | | | | | | | | |
| | | May 12 | Oct 28 | Mar 18 | Oct 12 | Apr 8 | Oct 24 | Mar 14 | Oct 29 | Mar 19 | Oct 8 | Apr 4 | Oct 22 | May 20 | Jun 18 | Jul 16 | Aug 14 | Sep 17 | Total | | | | | | | | | |
| Commercial Varieties—Available for Farm Use | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Archer III | 3.0 | 98 | 97 | 95 | 97 | 100 | 100 | 99 | 100 | 100 | 99 | 100 | 100 | 99 | 88 | 95 | 1.53 | 3.57 | 4.96 | 4.54 | 6.83 | 1.12 | 1.25 | 0.69 | 0.40 | 0.52 | 3.99 | 25.41* |
| Radiance HD | 2.8 | 99 | 96 | 97 | 97 | 98 | 100 | 98 | 98 | 98 | 96 | 94 | 94 | 75 | 86 | 87 | 1.72 | 3.85 | 5.17 | 4.63 | 6.23 | 0.87 | 1.01 | 0.65 | 0.44 | 0.54 | 3.51 | 25.11* |
| WL 363HQ | 3.5 | 96 | 96 | 96 | 98 | 100 | 100 | 99 | 98 | 98 | 96 | 94 | 75 | 87 | 87 | 87 | 1.84 | 3.72 | 5.24 | 4.71 | 6.31 | 0.70 | 1.00 | 0.60 | 0.38 | 0.58 | 3.26 | 25.09* |
| Adrenalin | 2.8 | 98 | 91 | 91 | 95 | 97 | 98 | 98 | 97 | 96 | 95 | 96 | 95 | 71 | 84 | 84 | 1.74 | 3.77 | 5.24 | 4.51 | 6.24 | 0.94 | 1.05 | 0.56 | 0.32 | 0.57 | 3.43 | 24.93* |
| Ameristand 407TQ | 4.3 | 100 | 97 | 97 | 97 | 99 | 99 | 98 | 98 | 98 | 97 | 96 | 96 | 80 | 93 | 93 | 1.65 | 3.82 | 5.10 | 4.71 | 5.98 | 0.97 | 1.29 | 0.68 | 0.34 | 0.45 | 3.94 | 24.61* |
| Rebound 5.0 | 2.8 | 95 | 96 | 90 | 93 | 96 | 97 | 95 | 74 | 94 | 90 | 71 | 83 | 83 | 83 | 1.48 | 3.64 | 4.86 | 4.61 | 6.31 | 0.92 | 1.07 | 0.62 | 0.50 | 0.59 | 3.70 | 24.59* | |
| 6422Q | 3.3 | 95 | 97 | 97 | 96 | 97 | 99 | 99 | 96 | 96 | 91 | 81 | 88 | 88 | 88 | 1.63 | 3.65 | 4.78 | 4.50 | 6.16 | 0.86 | 1.08 | 0.67 | 0.42 | 0.61 | 3.64 | 24.36* | |
| Ameristand 403T | 3.3 | 98 | 94 | 94 | 96 | 98 | 95 | 96 | 97 | 95 | 91 | 73 | 80 | 75 | 80 | 2.09 | 3.85 | 4.94 | 4.11 | 5.30 | 0.74 | 0.84 | 0.46 | 0.24 | 0.29 | 2.80 | 24.24* | |
| KingFisher 243 | 1.3 | 94 | 93 | 92 | 93 | 99 | 98 | 97 | 97 | 96 | 92 | 75 | 86 | 86 | 86 | 1.44 | 3.16 | 4.81 | 4.50 | 6.17 | 0.81 | 1.08 | 0.65 | 0.41 | 0.58 | 3.54 | 23.61 | |
| Bulldog-505 | 2.8 | 99 | 95 | 93 | 93 | 99 | 99 | 98 | 98 | 97 | 97 | 97 | 90 | 80 | 90 | 1.72 | 3.45 | 4.98 | 4.33 | 5.68 | 0.76 | 0.89 | 0.45 | 0.27 | 0.46 | 2.84 | 23.01 | |
| Ameristand 403TPlus | 3.5 | 100 | 95 | 95 | 95 | 98 | 97 | 98 | 96 | 96 | 95 | 78 | 88 | 88 | 88 | 1.57 | 3.61 | 4.81 | 4.01 | 5.44 | 0.79 | 0.90 | 0.54 | 0.36 | 0.50 | 3.09 | 22.53 | |
| Saranac AR (certified) | 3.3 | 99 | 91 | 90 | 94 | 99 | 97 | 94 | 96 | 93 | 91 | 60 | 75 | 75 | 75 | 1.60 | 3.56 | 4.83 | 4.39 | 4.85 | 0.61 | 0.71 | 0.46 | 0.32 | 0.53 | 2.64 | 22.13 | |
| Buffalo | 3.3 | 100 | 91 | 93 | 94 | 94 | 91 | 89 | 94 | 87 | 83 | 63 | 70 | 70 | 70 | 1.61 | 3.42 | 4.67 | 3.85 | 4.82 | 0.56 | 0.80 | 0.48 | 0.24 | 0.39 | 2.46 | 20.92 | |
| Experimental Varieties | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TS 4010/A4535 | 3.5 | 100 | 98 | 97 | 97 | 97 | 96 | 96 | 96 | 96 | 94 | 77 | 88 | 88 | 88 | 1.68 | 3.85 | 5.18 | 4.43 | 6.04 | 0.92 | 1.02 | 0.52 | 0.39 | 0.53 | 3.63 | 25.89* | |
| BYEXP723 | 3.8 | 98 | 97 | 96 | 96 | 98 | 98 | 97 | 96 | 95 | 98 | 87 | 93 | 93 | 93 | 2.16 | 4.02 | 5.07 | 4.59 | 5.89 | 0.96 | 1.09 | 0.60 | 0.36 | 0.61 | 3.72 | 25.55* | |
| CW 055023/PG1557 | 1.8 | 100 | 97 | 96 | 97 | 98 | 99 | 99 | 98 | 97 | 95 | 79 | 90 | 90 | 90 | 1.43 | 3.49 | 4.94 | 4.53 | 5.76 | 0.92 | 1.05 | 0.63 | 0.51 | 0.58 | 3.69 | 23.84* | |
| GA-MPX | 4.0 | 96 | 92 | 93 | 96 | 98 | 98 | 98 | 98 | 97 | 96 | 83 | 90 | 90 | 90 | 1.42 | 3.12 | 4.38 | 4.10 | 5.84 | 0.88 | 1.06 | 0.52 | 0.31 | 0.51 | 3.48 | 22.82 | |
| GA-APGC | 4.0 | 98 | 91 | 94 | 97 | 99 | 97 | 97 | 97 | 97 | 95 | 77 | 92 | 92 | 92 | 1.63 | 3.34 | 4.85 | 4.14 | 5.54 | 0.80 | 0.85 | 0.44 | 0.19 | 0.48 | 2.91 | 22.49 | |
| Mean | 3.1 | 98 | 95 | 94 | 95 | 98 | 97 | 97 | 96 | 96 | 94 | 77 | 87 | 87 | 87 | 1.66 | 3.61 | 4.93 | 4.40 | 5.86 | 0.85 | 1.01 | 0.57 | 0.36 | 0.52 | 3.38 | 23.99 | |
| CV% | 37.6 | 4 | 5 | 4 | 3 | 2 | 2 | 3 | 11 | 5 | 5 | 12 | 11 | 11 | 11 | 24.87 | 12.72 | 6.50 | 7.93 | 12.39 | 28.41 | 17.83 | 23.71 | 42.23 | 28.77 | 20.07 | 5.68 | |
| LSD _{0.05} | 1.7 | 6 | 6 | 6 | 4 | 3 | 3 | 4 | 15 | 6 | 7 | 15 | 16 | 16 | 16 | 0.59 | 0.65 | 0.46 | 0.50 | 1.03 | 0.37 | 0.28 | 0.20 | 0.22 | 0.22 | 1.05 | 2.12 | |

¹ Vigor score based on a scale of 1 to 5 with 5 being the most vigorous seedling growth.

*Not significantly different from the highest numerical value in the column, based on the 0.05 LSD.



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