Developing a Standard Test for Standability (Lodging Resistance) for Alfalfa in North America

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Standability (or lodging resistance) is a key trait in many agronomic crops which contributes to increased harvestable yield, improved crop quality, and increased efficiency of harvest. Beginning in 2003-04, alfalfa (*Medicago sativa* L.) varieties with claims of improved standability were released for commercial production use in the fall dormant growing regions of North America. In the interest of an objective, accurate, and consistent description of standability differences among alfalfa cultivars, studies were conducted to measure standability differences in seeded research plots, and in spaced planted field tests (similar to other agronomic standard tests such fall dormancy and winter survival). Previous work in Wisconsin and Iowa (Sharpee et al., 2003; Johnson et al. 2003) indicated consistency between whole plot scores and the percent of plants with an erect growth habit.

Additional spaced planted tests were established in Wisconsin and Iowa over a period of years using the protocol outlined by Sharpee et al. These tests contained a base group of cultivars which were known to vary significantly for standability in whole plots. Varieties that had consistently high percentages of plants with an erect growth habit included Europe, 54H11, and PGI 437. Varieties that were consistently very low in erect growth habit included 5454 and WL319HQ. A standard test protocol will be made available at the time of the meeting. Key features of the test protocol will include requirements for plant growing conditions, scoring criteria, and expected levels of trait expression.

References

Johnson, D., Darling, M., Miller, D., and Reich, J. 2003. StandFast™ Alfalfas Deliver Improved Standability and Up To 30% Faster Recovery After Harvest. http://www.naaic.org/Meetings/Central2003/StandFast_Abstract_Cal_West_Seeds_CAIC_July_2003.doc

Sharpee, D., Hoard, G., Smith, M., and Miller, D. 2003. Developing a Standard Test for Lodging Resistance for Alfalfa in North America. http://www.naaic.org/Meetings/Central2003/CAIC_miller.doc