

## **Alfalfa Variety Evaluation Project**

It is vital that alfalfa producers have the most current and unbiased performance information regarding alfalfa varieties; and because of that, a collaborative Alfalfa Variety Evaluation project led by Dr. Doug Shoup, Kansas State University Research and Extension, and Jill Zimmerman, former Cowley County Extension, along with support from the Kansas Forage and Grassland Council, W-L Alfalfas, Dairyland Seed, Dow, Forage Genetics, Kaufman Seeds, America's Alfalfa and SDK Labs has been established at the Roger Black farm in Cowley County.

The Alfalfa Variety Evaluation project includes twelve alfalfa varieties planted on April 5, 2016 in fifteen-foot-wide by 600-foot-long strips, with three replications. Annually, both yield and quality data will be collected including neutral detergent fiber (NDF), acid detergent fiber (ADF), total digestible nutrients (TDN) and Relative Feed Value.

## **Latest Updates**

- After a poor season in 2016, the first significant harvest of alfalfa was taken on May 9th, 2017. In each plot, a 1.67 x 7 ft sub sample was harvested by hand and wet weights were determined. Alfalfa ranged in maturity from no bloom to 5% bloom. For each hand harvest, 3 subsamples were taken and weighed wet, and placed in a brown paper bag. The samples were dried and weighed again to determine dry matter content. Samples were then sent to SDK Lab and analyzed using the NIRS-RFQ test where protein, TDN, ADF, NDF, IVTDMD, RFV, RFQ, and other quality parameters were determined. Data were analyzed using analysis of variance and means were separated using an LSD value of 0.10.
- Yields and quality are presented in Table 1. Unfortunately maturity was not recorded at time of harvest so yield and quality may be skewed by length of maturity with lowering yielding and higher quality varieties possibly being further behind in maturity. There was an inverse relationship between yield and protein across varieties which may be explained by differences in maturity.

**Table 1. Yield and quality of alfalfa variety trial planted in 2016. Data represents first spring cutting harvested on May 9<sup>th</sup> near Dexter, KS.**

| Variety            | Yield(lb/ac) | Protein(%) | TDN(%)   | IVTDMD | RFQ    | RFV    | Lignin Acid Insoluble | Net Energy Lactation | Net Energy Gain | Digestible Energy |
|--------------------|--------------|------------|----------|--------|--------|--------|-----------------------|----------------------|-----------------|-------------------|
| HiGest 360         | 2.7 de       | 24.8 abc   | 57.5 abc | 84 b   | 215 b  | 211 bc | 6.7 bcd               | 0.67 bc              | 0.40 bc         | 1.30 bc           |
| HiGest 660         | 2.7 e        | 25.4 a     | 56.4 Cd  | 84 bc  | 215 b  | 216 ab | 6.7 bcd               | 0.66 cd              | 0.39 cd         | 1.29 cd           |
| Ameristand 427TQ   | 2.8 cde      | 25.1 ab    | 57.8 abc | 83 bc  | 205 bc | 208 bc | 7.1 bc                | 0.65 cde             | 0.38 cde        | 1.27 cde          |
| Ameristand 455TQRR | 2.9 bcd      | 24.3 bcd   | 59.3 A   | 83 bc  | 194 c  | 198 c  | 7.2 ab                | 0.64 e               | 0.36 e          | 1.25 e            |
| AS400 HVXRR        | 2.8 cde      | 25.1 ab    | 59.3 A   | 86 a   | 237 a  | 230 a  | 6.5 d                 | 0.68 a               | 0.42 a          | 1.33 a            |
| HybridForce2600    | 3.0 ab       | 24.2 cd    | 58.3 abc | 83 bc  | 195 c  | 199 c  | 7.0 bcd               | 0.65 de              | 0.38 cde        | 1.27 de           |
| HybriForce3400     | 3.1 a        | 24.2 cd    | 56.5 bcd | 82 c   | 195 c  | 197 c  | 7.1 bc                | 0.65 de              | 0.38 cde        | 1.27 de           |
| Magna 601          | 2.9 bcd      | 23.6 d     | 59.1 Ab  | 79 d   | 170 d  | 177 d  | 7.7 a                 | 0.62 f               | 0.34 f          | 1.21 f            |
| Cosmo              | 2.9 abc      | 24.9 abc   | 58.4 abc | 83 bc  | 205 bc | 206 bc | 6.9 bcd               | 0.66 cd              | 0.38 cd         | 1.28 cd           |
| WL301HVXRR         | 2.7 e        | 25.4 a     | 59.9 A   | 85 a   | 235 a  | 230 a  | 6.6 cd                | 0.68 ab              | 0.41 ab         | 1.33 ab           |
| WL372HQRR          | 2.9 b-e      | 25.1 ab    | 57.8 abc | 83 bc  | 203 bc | 206 bc | 7.1 bc                | 0.65 de              | 0.38 de         | 1.27 de           |
| 15-13930-CD        | 2.8 cde      | 24.7 abc   | 54.1 D   | 83 bc  | 207 bc | 209 bc | 6.8 bcd               | 0.66 cd              | 0.39 cd         | 1.29 cd           |

\*\*Means followed by the same letter do not significantly differ (p=0.10, LSD)

**Figure 1. Yield vs. protein of the 12 alfalfa varieties established in a trial near Dexter, KS**

