



# Current Report

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## Protein Content of Winter Wheat Varieties in Oklahoma – 2016–2017

David Marburger  
Small Grains Extension Specialist

Robert Calhoun  
Senior Agriculturalist

Brett Carver  
Wheat Breeder

### General Information

Protein is just one of many attributes that determines end-use quality and marketability of winter wheat. In fact, some millers and bakers would argue that functionality of wheat protein is more important than the quantity of protein. While varietal differences commonly exist, variability in protein among environments is generally much larger than variability among varieties. Factors such as N fertility and drought stress, for example, can sharply impact final protein wheat content.

To reflect these management and environmental impacts on wheat protein content, data are reported by variety and location in Table 1. Table 2 reports the wheat protein content by variety as a deviation from location mean, as this allows for easier comparison of wheat protein among varieties across locations. Doublestop CL Plus, for example, is a variety which showed positive deviation from the location mean in 90 percent of this year's trials, indicating it has a tendency for above-average wheat protein content. Iba, on the other hand, showed a negative deviation from location mean in 75 percent of the trials, indicating a tendency for lower than average wheat protein content. Varieties which showed a consistent, relatively high wheat protein content across the regional performance trial locations this year and have a history of acceptable or desirable dough quality (i.e., good protein quality) include Bob Dole, Doublestop CL Plus, Stardust, SY Drifter, and WB4458.

Adequate N fertility as recommended by a recent soil test or sensor-based nitrogen management program can help ensure that varieties such as Iba produce wheat or flour protein within the acceptable range for end-use customers. Iba is also a prime example of how protein data can sometimes be misused, as the functionality of the protein in Iba is above average, which can offset lower absolute protein content. More information on end-use quality is available in Current Report CR-2165, Wheat and Flour Quality for Varieties Tested in the 2016 OSU Variety Performance Tests.

### Procedures

Approximately 600-gram subsamples of wheat grain were collected from the OSU Wheat Variety Performance Test plots at harvest. These plots were well-fertilized and managed according to OSU Cooperative Extension recommendations. Ad-

ditional information on test locations and management practices is available in Current Report CR-2143, 2016-2017 Oklahoma Small Grains Variety Performance Tests on the web at [www.wheat.okstate.edu](http://www.wheat.okstate.edu). Samples were stored in plastic containers for approximately one month following harvest. Samples were nondestructively analyzed for protein content on a 12 percent moisture basis using a Diode Array Near Infrared instrument (NIR) (model DA 7200, Perten Instruments, Sweden).

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**Table 1. Wheat protein content (12% moisture basis) of varieties and experimental lines tested in the 2016-2017 Oklahoma Wheat Variety Performance Tests.**

| Source                   | Variety            | %wheat protein |             |             |             |                  |             |             |             |             |             |
|--------------------------|--------------------|----------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|-------------|
|                          |                    | Afton          | Altus       | Alva        | Apache      | Apache Fungicide | Balko       | Buffalo     | Cherokee    | Chickasha   | IWM         |
| AGSECO                   | AG Icon            | -              | 14.0        | -           | -           | -                | -           | -           | -           | 12.4        | 12.2        |
| AGSECO                   | AG Robust          | -              | 13.4        | -           | -           | -                | -           | -           | -           | 12.7        | 12.2        |
| PlainsGold               | Avery              | -              | -           | 11.1        | -           | -                | 13.0        | 8.9         | 10.3        | -           | -           |
| OGI                      | Bentley            | 12.7           | 11.6        | 10.6        | 9.4         | 10.7             | 12.9        | 11.3        | 10.5        | 10.2        | 10.8        |
| OGI                      | Billings           | 12.9           | 12.8        | -           | -           | -                | -           | -           | -           | 12.0        | 11.9        |
| Syngenta                 | Bob Dole           | -              | 11.9        | -           | -           | -                | -           | -           | -           | 11.8        | 12.4        |
| PlainsGold               | Brawl CL Plus      | -              | -           | 10.0        | -           | -                | 13.0        | 10.7        | 11.1        | -           | -           |
| PlainsGold               | Byrd               | -              | -           | 9.8         | -           | -                | 13.6        | 9.0         | 9.9         | -           | -           |
| OGI                      | Doublestop CL Plus | 13.6           | 12.7        | 10.3        | 12.3        | 11.6             | 13.6        | 12.5        | 11.1        | 11.8        | 12.0        |
| OGI                      | Duster             | 12.7           | 12.2        | 10.3        | 11.2        | 10.7             | 13.8        | 11.0        | 10.7        | 11.7        | 11.8        |
| OSU                      | Endurance          | 12.9           | 12.1        | 10.8        | 11.2        | 11.1             | 14.2        | 10.4        | 10.3        | 12.3        | 12.1        |
| OGI                      | Gallagher          | 12.7           | 10.7        | 10.9        | 9.9         | 10.3             | 13.4        | 10.5        | 10.2        | 11.4        | 11.7        |
| AGSECO                   | Hot Rod            | -              | 12.3        | -           | -           | -                | -           | -           | -           | 10.9        | 11.7        |
| OGI                      | Iba                | 11.7           | 11.6        | 10.9        | 10.1        | 9.9              | 13.9        | 10.2        | 10.6        | 10.9        | 11.0        |
| KWA                      | Joe                | 13.2           | 11.4        | 11.0        | -           | -                | 13.1        | 10.7        | 10.0        | 11.9        | 11.9        |
| PlainsGold               | Langin             | -              | -           | 10.3        | -           | -                | 12.8        | 8.9         | 10.0        | -           | -           |
| KWA                      | Larry              | 13.6           | 12.0        | 10.3        | -           | -                | 13.3        | 9.6         | 10.1        | 11.7        | 11.6        |
| LCS                      | LCS Chrome         | 13.6           | 13.6        | 11.0        | 10.8        | 10.7             | 11.8        | 11.6        | 10.6        | 11.8        | 12.4        |
| LCS                      | LCS Mint           | 12.0           | 10.6        | 11.0        | 10.1        | 9.9              | 13.1        | 9.5         | 10.0        | 11.7        | 12.0        |
| LCS                      | LCS Pistol         | 12.8           | 11.4        | 11.4        | 10.1        | 9.9              | 14.1        | 10.1        | 10.8        | 11.3        | 11.7        |
| LCS                      | LCS Wizard         | -              | 11.6        | -           | -           | -                | -           | -           | -           | 11.3        | 11.4        |
| OGI                      | Lonerider          | 13.2           | -           | 9.9         | -           | -                | 13.0        | 9.9         | -           | -           | -           |
| Dyna-Gro                 | Long Branch        | -              | 12.6        | -           | -           | -                | -           | -           | -           | 11.0        | 12.1        |
| OGI                      | NF 101             | -              | 12.0        | -           | -           | -                | -           | -           | -           | 11.4        | 11.8        |
| OGI                      | Ruby Lee           | 13.4           | 11.4        | 11.4        | 10.5        | 10.7             | 13.8        | 11.2        | 10.8        | 12.0        | 12.2        |
| OGI                      | Smith's Gold       | -              | 10.7        | 12.4        | 9.8         | 10.1             | 13.1        | -           | 10.4        | 11.0        | 11.4        |
| OGI                      | Spirit Rider       | -              | -           | -           | -           | -                | 13.0        | -           | 10.2        | -           | -           |
| OGI                      | Stardust           | -              | 12.0        | -           | -           | -                | -           | -           | -           | 12.4        | 12.6        |
| Syngenta                 | SY Achieve CL2     | -              | 12.3        | -           | -           | -                | -           | -           | -           | 11.9        | 11.8        |
| Syngenta                 | SY Benefit         | 12.6           | 11.1        | -           | -           | -                | -           | -           | -           | 10.6        | 11.3        |
| Syngenta                 | SY Drifter         | -              | 12.4        | -           | -           | -                | -           | -           | -           | 11.9        | 11.9        |
| Syngenta                 | SY Flint           | 13.2           | 11.7        | -           | 11.2        | 11.0             | -           | -           | -           | 11.5        | 11.7        |
| Syngenta                 | SY Grit            | -              | 11.0        | -           | -           | -                | -           | -           | -           | 11.4        | 12.0        |
| Syngenta                 | SY Llano           | 13.3           | 11.6        | -           | 11.5        | 11.2             | -           | -           | -           | 11.7        | 11.5        |
| Syngenta                 | SY Monument        | 12.7           | -           | 11.2        | -           | -                | 13.5        | 10.6        | 10.4        | -           | -           |
| Syngenta                 | SY Razor           | -              | 12.3        | -           | 11.2        | 10.9             | -           | -           | -           | 11.6        | 12.2        |
| Syngenta                 | SY Rugged          | -              | 12.2        | -           | -           | -                | -           | -           | -           | 12.3        | 11.2        |
| LCS                      | T158               | -              | 11.0        | -           | -           | -                | -           | -           | -           | 10.9        | 11.0        |
| Watley Seed              | TAM 112            | -              | -           | 10.8        | -           | -                | 13.5        | 9.6         | 10.3        | -           | -           |
| AGSECO                   | TAM 114            | -              | 11.9        | -           | -           | -                | -           | -           | -           | 10.1        | 11.4        |
| Watley Seed              | TAM 204            | 13.4           | 12.1        | 11.7        | 10.3        | 10.5             | 13.6        | 10.1        | 10.3        | 11.0        | 10.6        |
| KWA                      | Tatanka            | 12.4           | 10.7        | 11.1        | -           | -                | 13.6        | 9.7         | 10.1        | 10.2        | 10.9        |
| WestBred                 | WB4269             | -              | 12.2        | -           | -           | -                | -           | -           | -           | 11.8        | 11.7        |
| WestBred                 | WB4303             | -              | 12.2        | -           | -           | -                | -           | -           | -           | 11.4        | 11.7        |
| WestBred                 | WB4458             | 14.0           | 11.9        | -           | 10.2        | 10.5             | -           | -           | -           | 12.0        | 12.8        |
| WestBred                 | WB4515             | -              | 12.3        | -           | -           | -                | -           | -           | -           | 11.2        | 11.8        |
| WestBred                 | WB4721             | -              | 11.8        | -           | -           | -                | -           | -           | -           | 11.1        | 11.4        |
| WestBred                 | WB-Cedar           | 13.6           | 12.1        | 11.7        | -           | -                | 14.4        | 10.8        | 9.9         | 11.4        | 11.8        |
| WestBred                 | WB-Grainfield      | 12.5           | 12.6        | 12.2        | 9.2         | 9.3              | 14.0        | 10.0        | 9.8         | 9.9         | 10.9        |
| WestBred                 | Winterhawk         | -              | 11.2        | 12.5        | 9.6         | 10.0             | 13.8        | 10.7        | 10.1        | 10.8        | 12.0        |
| KWA                      | Zenda              | -              | 11.0        | -           | -           | -                | -           | -           | -           | 10.6        | 12.1        |
| <b>OSU Experimentals</b> |                    |                |             |             |             |                  |             |             |             |             |             |
|                          | OK11755W-9W        | -              | 11.6        | -           | -           | -                | -           | -           | -           | -           | -           |
|                          | OK11D25005         | -              | -           | -           | -           | -                | -           | 10.3        | -           | -           | -           |
|                          | OK12206-2          | 13.3           | -           | 10.5        | -           | -                | -           | -           | 10.1        | -           | -           |
|                          | OK12621            | 12.5           | -           | -           | -           | -                | -           | -           | -           | -           | -           |
|                          | OK12716R/W         | 12.6           | 12.3        | 11.0        | 10.8        | 11.8             | 12.6        | 9.9         | 10.2        | 11.6        | 11.6        |
|                          | OK12912C-2         | -              | 13.1        | 11.0        | 11.3        | 11.4             | -           | -           | -           | -           | -           |
|                          | OK12D22002-077     | 12.8           | 12.0        | 10.3        | 10.7        | 10.6             | 13.3        | -           | -           | 11.3        | 11.9        |
|                          | OK12D22004-016     | 13.2           | -           | -           | -           | -                | -           | -           | -           | -           | -           |
|                          | OK13209            | 12.8           | 13.9        | 10.2        | 11.1        | 10.4             | -           | -           | -           | 11.7        | 11.2        |
|                          | OK13621            | -              | 12.4        | -           | -           | -                | -           | -           | -           | 11.6        | 11.6        |
|                          | OK14319            | 12.9           | -           | -           | -           | -                | -           | -           | 10.3        | -           | -           |
|                          | <b>Mean</b>        | <b>13.0</b>    | <b>12.0</b> | <b>10.9</b> | <b>10.6</b> | <b>10.6</b>      | <b>13.4</b> | <b>10.3</b> | <b>10.3</b> | <b>11.4</b> | <b>11.7</b> |
|                          | <b>LSD (0.05)</b>  | <b>1.0</b>     | <b>1.4</b>  | <b>0.9</b>  | <b>1.0</b>  | <b>1.2</b>       | <b>NS</b>   | <b>0.9</b>  | <b>NS</b>   | <b>1.1</b>  | <b>NS</b>   |

Notes: Shaded values are not statistically different from the highest value within a column (i.e., location). NS = not significant.

**Table 1. Wheat protein content (12% moisture basis) of varieties and experimental lines tested in the 2016-2017 Oklahoma Wheat Variety Performance Tests. (cont'd).**

| Source                   | Variety            | %wheat protein        |             |             |             |                     |                              |                            |            |               |            |
|--------------------------|--------------------|-----------------------|-------------|-------------|-------------|---------------------|------------------------------|----------------------------|------------|---------------|------------|
|                          |                    | Goodwell<br>Irrigated | Homestead   | Kildare     | Lahoma      | Lahoma<br>Fungicide | Marshall<br>Dual-<br>Purpose | Marshall<br>Grain-<br>only | Thomas     | Union<br>City | Walters    |
| AGSECO                   | AG Icon            | 16.9                  | -           | -           | 12.0        | 11.7                | -                            | -                          | -          | -             | -          |
| AGSECO                   | AG Robust          | 17.1                  | -           | -           | 11.0        | 11.2                | -                            | -                          | -          | -             | -          |
| PlainsGold               | Avery              | 15.4                  | -           | -           | 11.5        | 10.4                | -                            | -                          | -          | -             | -          |
| OGI                      | Bentley            | 16.0                  | 10.3        | 10.1        | 10.8        | 10.5                | 12.4                         | 11.6                       | 9.0        | 10.0          | 8.1        |
| OGI                      | Billings           | 17.3                  | 11.5        | 10.5        | 11.5        | 11.2                | 12.6                         | 11.8                       | 10.5       | 12.3          | -          |
| Syngenta                 | Bob Dole           | 17.0                  | -           | -           | 11.4        | 11.5                | -                            | -                          | -          | -             | -          |
| PlainsGold               | Brawl CL Plus      | 16.5                  | -           | -           | 12.4        | 12.5                | -                            | -                          | -          | -             | -          |
| PlainsGold               | Byrd               | 15.7                  | -           | -           | 11.0        | 10.6                | -                            | -                          | -          | -             | -          |
| OGI                      | Doublestop CL Plus | 17.3                  | 12.3        | 11.5        | 12.1        | 12.3                | 11.9                         | 12.5                       | 10.5       | 13.6          | 8.8        |
| OGI                      | Duster             | 16.2                  | 10.7        | 10.6        | 11.1        | 10.8                | 12.1                         | 12.3                       | 10.0       | 12.1          | 8.5        |
| OSU                      | Endurance          | 16.6                  | 11.2        | 10.2        | 11.9        | 11.8                | 12.3                         | 11.8                       | 10.3       | 13.0          | 9.1        |
| OGI                      | Gallagher          | 16.7                  | 10.9        | 10.1        | 10.7        | 11.0                | 11.3                         | 11.8                       | 9.9        | 12.1          | 8.4        |
| AGSECO                   | Hot Rod            | 16.6                  | -           | -           | 11.0        | 11.0                | -                            | -                          | -          | -             | -          |
| OGI                      | Iba                | 15.4                  | 10.6        | 10.0        | 10.5        | 10.4                | 11.9                         | 12.8                       | 9.5        | 12.0          | 8.2        |
| KWA                      | Joe                | 16.0                  | 10.0        | 9.5         | 11.0        | 10.8                | 12.5                         | 12.0                       | 9.2        | -             | -          |
| PlainsGold               | Langin             | 17.0                  | -           | -           | 10.9        | 10.8                | -                            | -                          | -          | -             | -          |
| KWA                      | Larry              | 16.1                  | 10.3        | 10.7        | 11.0        | 10.5                | 11.9                         | 13.0                       | 9.2        | -             | -          |
| LCS                      | LCS Chrome         | 16.4                  | 10.8        | 10.9        | 12.5        | 12.5                | 12.5                         | 12.2                       | 10.0       | 12.9          | 8.4        |
| LCS                      | LCS Mint           | 15.8                  | 9.8         | 9.6         | 10.7        | 10.6                | 11.9                         | 12.1                       | 8.8        | 10.9          | 8.6        |
| LCS                      | LCS Pistol         | 16.1                  | 10.6        | 9.9         | 11.3        | 10.8                | 12.3                         | 11.8                       | 9.5        | 12.7          | 8.0        |
| LCS                      | LCS Wizard         | 16.3                  | -           | -           | 11.7        | 11.7                | -                            | -                          | -          | -             | -          |
| OGI                      | Lonerider          | 17.0                  | 10.7        | -           | -           | -                   | -                            | -                          | 9.5        | -             | -          |
| Dyna-Gro                 | Long Branch        | 15.4                  | -           | -           | 11.6        | 11.5                | -                            | -                          | -          | -             | -          |
| OGI                      | NF 101             | 16.0                  | -           | -           | 11.2        | 11.6                | -                            | -                          | -          | -             | -          |
| OGI                      | Ruby Lee           | 17.6                  | 11.1        | 10.4        | 10.9        | 11.7                | 13.1                         | 11.5                       | 10.4       | 13.9          | 8.5        |
| OGI                      | Smith's Gold       | 16.5                  | 10.3        | 10.9        | 11.4        | 10.9                | 12.2                         | 12.3                       | 9.2        | 10.5          | 8.3        |
| OGI                      | Spirit Rider       | 16.4                  | -           | 10.8        | -           | -                   | -                            | -                          | -          | -             | -          |
| OGI                      | Stardust           | 17.1                  | 11.5        | -           | 12.5        | 12.1                | 12.9                         | 12.5                       | -          | -             | -          |
| Syngenta                 | SY Achieve CL2     | 17.9                  | -           | -           | 11.5        | 11.4                | -                            | -                          | -          | -             | -          |
| Syngenta                 | SY Benefit         | 16.3                  | -           | -           | 10.8        | 10.3                | -                            | -                          | -          | -             | -          |
| Syngenta                 | SY Drifter         | 16.9                  | -           | -           | 11.7        | 11.8                | -                            | -                          | -          | -             | -          |
| Syngenta                 | SY Flint           | 16.2                  | 11.3        | 10.1        | 10.4        | 11.0                | 12.0                         | 13.4                       | 10.0       | 11.1          | 8.4        |
| Syngenta                 | SY Grit            | 16.2                  | -           | -           | 11.4        | 10.9                | -                            | -                          | -          | -             | -          |
| Syngenta                 | SY Llano           | -                     | 11.2        | 10.8        | 11.3        | 11.9                | 11.2                         | 12.7                       | 10.3       | 11.6          | 9.1        |
| Syngenta                 | SY Monument        | 16.2                  | 10.5        | 10.3        | 10.6        | 10.9                | 13.3                         | 12.4                       | 9.5        | -             | -          |
| Syngenta                 | SY Razor           | -                     | -           | -           | -           | -                   | -                            | -                          | -          | 11.9          | 9.2        |
| Syngenta                 | SY Rugged          | 16.4                  | -           | -           | 11.0        | 10.6                | -                            | -                          | -          | -             | -          |
| LCS                      | T158               | 15.8                  | -           | -           | 11.3        | 10.7                | -                            | -                          | -          | -             | -          |
| Watley Seed              | TAM 112            | 17.2                  | -           | -           | 11.5        | 11.0                | -                            | -                          | -          | -             | -          |
| AGSECO                   | TAM 114            | 16.8                  | -           | -           | 10.9        | 10.4                | -                            | -                          | -          | -             | -          |
| Watley Seed              | TAM 204            | 16.3                  | 10.6        | 10.9        | 11.7        | 11.0                | 12.5                         | 12.2                       | 10.2       | 11.5          | 8.8        |
| KWA                      | Tatanka            | 15.7                  | 9.5         | 9.2         | 10.0        | 10.1                | 12.1                         | 12.0                       | 8.5        | -             | -          |
| WestBred                 | WB4269             | 16.0                  | -           | -           | 11.3        | 11.5                | -                            | -                          | -          | -             | -          |
| WestBred                 | WB4303             | 17.4                  | -           | -           | 10.4        | 10.8                | -                            | -                          | -          | -             | -          |
| WestBred                 | WB4458             | 17.3                  | 11.0        | 11.5        | 10.5        | 11.4                | 11.8                         | 12.1                       | 10.0       | 12.1          | 9.8        |
| WestBred                 | WB4515             | 17.3                  | -           | -           | 11.2        | 11.1                | -                            | -                          | -          | -             | -          |
| WestBred                 | WB4721             | 17.2                  | -           | -           | 11.4        | 11.7                | -                            | -                          | -          | -             | -          |
| WestBred                 | WB-Cedar           | 16.6                  | 11.1        | 10.6        | 11.1        | 12.3                | 11.6                         | 11.9                       | 10.5       | 10.9          | -          |
| WestBred                 | WB-Grainfield      | 16.4                  | 9.3         | 9.8         | 10.8        | 11.1                | 11.7                         | 11.4                       | 9.1        | 11.3          | 8.0        |
| WestBred                 | Winterhawk         | 15.9                  | -           | -           | 10.2        | 10.4                | -                            | -                          | -          | -             | 8.3        |
| KWA                      | Zenda              | 15.5                  | -           | -           | 10.2        | 10.8                | -                            | -                          | -          | -             | -          |
| <b>OSU Experimentals</b> |                    |                       |             |             |             |                     |                              |                            |            |               |            |
|                          | OK11755W-9W        | 16.3                  | -           | -           | 11.4        | 10.8                | -                            | -                          | -          | -             | -          |
|                          | OK11D25005         | -                     | -           | -           | -           | -                   | 12.2                         | 11.4                       | -          | 12.9          | 8.0        |
|                          | OK12206-2          | 16.8                  | -           | -           | 10.7        | 11.1                | 11.9                         | 13.0                       | -          | -             | -          |
|                          | OK12621            | -                     | -           | -           | -           | -                   | 12.9                         | 12.0                       | -          | -             | -          |
|                          | OK12716R/W         | 16.8                  | 10.7        | 10.4        | 10.8        | 10.9                | 13.0                         | 12.7                       | 9.4        | 10.6          | 7.9        |
|                          | OK12912C-2         | -                     | 12.1        | -           | 12.1        | 11.9                | -                            | -                          | -          | -             | -          |
|                          | OK12D22002-077     | 16.9                  | 11.5        | 10.5        | 11.4        | 11.3                | -                            | -                          | -          | -             | -          |
|                          | OK12D22004-016     | 15.3                  | -           | -           | 10.8        | 11.3                | -                            | -                          | -          | -             | -          |
|                          | OK13209            | -                     | 12.4        | -           | 12.0        | 12.0                | -                            | -                          | -          | -             | -          |
|                          | OK13621            | 16.7                  | -           | -           | 11.5        | 11.5                | -                            | -                          | -          | -             | -          |
|                          | OK14319            | -                     | -           | -           | -           | -                   | 12.9                         | 12.1                       | -          | 12.1          | -          |
|                          | <b>Mean</b>        | <b>16.5</b>           | <b>10.8</b> | <b>10.4</b> | <b>11.2</b> | <b>11.2</b>         | <b>12.3</b>                  | <b>12.2</b>                | <b>9.7</b> | <b>11.9</b>   | <b>8.5</b> |
|                          | <b>LSD (0.05)</b>  | <b>0.8</b>            | <b>0.6</b>  | <b>0.7</b>  | <b>0.8</b>  | <b>0.8</b>          | <b>NS</b>                    | <b>NS</b>                  | <b>0.7</b> | <b>1.0</b>    | <b>0.3</b> |

Notes: Shaded values are not statistically different from the highest value within a column (i.e., location). NS = not significant.

**Table 2. Wheat protein content relative to the location mean (expressed as a deviation) for varieties and experimental lines in the 2016-2017 Oklahoma Wheat Variety Performance Tests.**

| Source                   | Variety            | % wheat protein relative to location mean |             |             |             |                     |             |             |             |             |                  |
|--------------------------|--------------------|-------------------------------------------|-------------|-------------|-------------|---------------------|-------------|-------------|-------------|-------------|------------------|
|                          |                    | Afton                                     | Altus       | Alva        | Apache      | Apache<br>Fungicide | Balko       | Buffalo     | Cherokee    | Chickasha   | Chickasha<br>IWM |
| AGSECO                   | AG Icon            | -                                         | 2.0         | -           | -           | -                   | -           | -           | -           | 1.0         | 0.5              |
| AGSECO                   | AG Robust          | -                                         | 1.4         | -           | -           | -                   | -           | -           | -           | 1.3         | 0.5              |
| PlainsGold               | Avery              | -                                         | -           | -           | 0.2         | -                   | -           | -0.4        | -1.4        | 0.0         | -                |
| -OGI                     | Bentley            | -0.3                                      | -0.4        | -0.3        | -1.2        | 0.1                 | -0.5        | 1.0         | 0.2         | -1.2        | -0.9             |
| OGI                      | Billings           | -0.2                                      | 0.8         | -           | -           | -                   | -           | -           | -           | 0.6         | 0.2              |
| Syngenta                 | Bob Dole           | -                                         | -0.1        | -           | -           | -                   | -           | -           | -           | 0.4         | 0.7              |
| PlainsGold               | Brawl CL Plus      | -                                         | -           | -0.9        | -           | -                   | -0.4        | 0.4         | 0.8         | -           | -                |
| PlainsGold               | Byrd               | -                                         | -           | -1.1        | -           | -                   | 0.2         | -1.3        | -0.4        | -           | -                |
| OGI                      | Doublestop CL Plus | 0.6                                       | 0.7         | -0.6        | 1.7         | 1.0                 | 0.2         | 2.2         | 0.8         | 0.4         | 0.3              |
| OGI                      | Duster             | -0.3                                      | 0.2         | -0.6        | 0.6         | 0.1                 | 0.4         | 0.7         | 0.4         | 0.3         | 0.1              |
| OSU                      | Endurance          | -0.1                                      | 0.1         | -0.1        | 0.6         | 0.5                 | 0.8         | 0.1         | 0.0         | 0.9         | 0.4              |
| OGI                      | Gallagher          | -0.3                                      | -1.3        | 0.0         | -0.7        | -0.4                | 0.0         | 0.2         | -0.1        | 0.0         | 0.0              |
| AGSECO                   | Hot Rod            | -                                         | 0.3         | -           | -           | -                   | -           | -           | -           | -0.5        | 0.0              |
| OGI                      | Iba                | -1.3                                      | -0.4        | 0.0         | -0.5        | -0.7                | 0.5         | -0.1        | 0.3         | -0.5        | -0.7             |
| KWA                      | Joe                | 0.2                                       | -0.6        | 0.1         | -           | -                   | -0.3        | 0.4         | -0.3        | 0.5         | 0.2              |
| PlainsGold               | Langin             | -                                         | -           | -0.6        | -           | -                   | -0.6        | -1.4        | -0.3        | -           | -                |
| KWA                      | Larry              | 0.6                                       | 0.0         | -0.7        | -           | -                   | -0.1        | -0.7        | -0.2        | 0.3         | -0.1             |
| LCS                      | LCS Chrome         | 0.6                                       | 1.6         | 0.1         | 0.2         | 0.1                 | -1.6        | 1.3         | 0.3         | 0.4         | 0.7              |
| LCS                      | LCS Mint           | -1.0                                      | -1.4        | 0.1         | -0.5        | -0.7                | -0.3        | -0.8        | -0.3        | 0.3         | 0.3              |
| LCS                      | LCS Pistol         | -0.2                                      | -0.6        | 0.5         | -0.5        | -0.7                | 0.7         | -0.2        | 0.5         | -0.1        | 0.0              |
| LCS                      | LCS Wizard         | -                                         | -0.4        | -           | -           | -                   | -           | -           | -           | -0.1        | -0.4             |
| OGI                      | Lonerider          | 0.2                                       | -           | -1.0        | -           | -                   | -0.4        | -0.4        | -           | -           | -                |
| Dyna-Gro                 | Long Branch        | -                                         | 0.6         | -           | -           | -                   | -           | -           | -           | -0.4        | 0.4              |
| OGI                      | NF 101             | -                                         | 0.0         | -           | -           | -                   | -           | -           | -           | 0.0         | 0.1              |
| OGI                      | Ruby Lee           | 0.4                                       | -0.6        | 0.5         | -0.1        | 0.1                 | 0.4         | 0.9         | 0.5         | 0.6         | 0.5              |
| OGI                      | Smith's Gold       | -                                         | -1.3        | 1.5         | -0.8        | -0.5                | -0.3        | -           | 0.1         | -0.4        | -0.3             |
| OGI                      | Spirit Rider       | -                                         | -           | -           | -           | -                   | -0.4        | -           | -0.1        | -           | -                |
| OGI                      | Stardust           | -                                         | 0.0         | -           | -           | -                   | -           | -           | -           | 1.0         | 0.9              |
| Syngenta                 | SY Achieve CL2     | -                                         | 0.3         | -           | -           | -                   | -           | -           | -           | 0.5         | 0.1              |
| Syngenta                 | SY Benefit         | -0.4                                      | -0.9        | -           | -           | -                   | -           | -           | -           | -0.8        | -0.4             |
| Syngenta                 | SY Drifter         | -                                         | 0.4         | -           | -           | -                   | -           | -           | -           | 0.5         | 0.2              |
| Syngenta                 | SY Flint           | 0.2                                       | -0.3        | -           | 0.6         | 0.4                 | -           | -           | -           | 0.1         | 0.0              |
| Syngenta                 | SY Grit            | -                                         | -1.0        | -           | -           | -                   | -           | -           | -           | 0.0         | 0.3              |
| Syngenta                 | SY Llano           | 0.3                                       | -0.4        | -           | 0.9         | 0.6                 | -           | -           | -           | 0.3         | -0.2             |
| Syngenta                 | SY Monument        | -0.3                                      | -           | 0.3         | -           | -                   | 0.1         | 0.3         | 0.1         | -           | -                |
| Syngenta                 | SY Razor           | -                                         | 0.3         | -           | 0.6         | 0.3                 | -           | -           | -           | 0.2         | 0.5              |
| Syngenta                 | SY Rugged          | -                                         | 0.2         | -           | -           | -                   | -           | -           | -           | 0.9         | -0.5             |
| LCS                      | T158               | -                                         | -1.0        | -           | -           | -                   | -           | -           | -           | -0.5        | -0.7             |
| Watley Seed              | TAM 112            | -                                         | -           | -0.1        | -           | -                   | 0.1         | -0.7        | 0.0         | -           | -                |
| AGSECO                   | TAM 114            | -                                         | -0.1        | -           | -           | -                   | -           | -           | -           | -1.3        | -0.3             |
| Watley Seed              | TAM 204            | 0.4                                       | 0.1         | 0.8         | -0.3        | -0.1                | 0.2         | -0.2        | 0.0         | -0.4        | -1.1             |
| KWA                      | Tatanka            | -0.6                                      | -1.3        | 0.2         | -           | -                   | 0.2         | -0.6        | -0.2        | -1.2        | -0.8             |
| WestBred                 | WB4269             | -                                         | 0.2         | -           | -           | -                   | -           | -           | -           | 0.4         | 0.0              |
| WestBred                 | WB4303             | -                                         | 0.2         | -           | -           | -                   | -           | -           | -           | 0.0         | 0.0              |
| WestBred                 | WB4458             | 1.0                                       | -0.1        | -           | -0.4        | -0.1                | -           | -           | -           | 0.6         | 1.1              |
| WestBred                 | WB4515             | -                                         | 0.3         | -           | -           | -                   | -           | -           | -           | -0.2        | 0.1              |
| WestBred                 | WB4721             | -                                         | -0.2        | -           | -           | -                   | -           | -           | -           | -0.3        | -0.3             |
| WestBred                 | WB-Cedar           | 0.6                                       | 0.1         | 0.8         | -           | -                   | 1.0         | 0.5         | -0.4        | 0.0         | 0.1              |
| WestBred                 | WB-Grainfield      | -0.5                                      | 0.6         | 1.3         | -1.4        | -1.3                | 0.6         | -0.3        | -0.5        | -1.5        | -0.8             |
| WestBred                 | Winterhawk         | -                                         | -0.8        | 1.6         | -1.0        | -0.6                | 0.4         | 0.4         | -0.2        | -0.6        | 0.3              |
| KWA                      | Zenda              | -                                         | -1.0        | -           | -           | -                   | -           | -           | -           | -0.8        | 0.4              |
| <b>OSU Experimentals</b> |                    |                                           |             |             |             |                     |             |             |             |             |                  |
|                          | OK11755W-9W        | -                                         | -0.4        | -           | -           | -                   | -           | -           | -           | -           | -                |
|                          | OK11D25005         | -                                         | -           | -           | -           | -                   | -           | -           | 0.0         | -           | -                |
|                          | OK12206-2          | 0.3                                       | -           | -0.4        | -           | -                   | -           | -           | -0.2        | -           | -                |
|                          | OK12621            | -0.5                                      | -           | -           | -           | -                   | -           | -           | -           | -           | -                |
|                          | OK12716R/W         | -0.4                                      | 0.3         | 0.1         | 0.2         | 1.2                 | -0.8        | -0.4        | -0.1        | 0.2         | -0.1             |
|                          | OK12912C-2         | -                                         | 1.1         | 0.1         | 0.7         | 0.8                 | -           | -           | -           | -           | -                |
|                          | OK12D22002-077     | -0.2                                      | 0.0         | -0.6        | 0.1         | 0.0                 | -0.1        | -           | -           | -0.1        | 0.2              |
|                          | OK12D22004-016     | 0.2                                       | -           | -           | -           | -                   | -           | -           | -           | -           | -                |
|                          | OK13209            | -0.2                                      | 1.9         | -0.7        | 0.5         | -0.2                | -           | -           | -           | 0.3         | -0.5             |
|                          | OK13621            | -                                         | 0.4         | -           | -           | -                   | -           | -           | -           | 0.2         | -0.1             |
|                          | OK14319            | -0.1                                      | -           | -           | -           | -                   | -           | -           | 0.0         | -           | -                |
|                          | <b>Mean</b>        | <b>13.0</b>                               | <b>12.0</b> | <b>10.9</b> | <b>10.6</b> | <b>10.6</b>         | <b>13.4</b> | <b>10.3</b> | <b>10.3</b> | <b>11.4</b> | <b>11.7</b>      |
|                          | <b>LSD (0.05)</b>  | <b>1.0</b>                                | <b>1.4</b>  | <b>0.9</b>  | <b>1.0</b>  | <b>1.2</b>          | <b>NS</b>   | <b>0.9</b>  | <b>NS</b>   | <b>1.1</b>  | <b>NS</b>        |

**Table 2. Wheat protein content relative to the location mean (expressed as a deviation) for varieties and experimental lines in the 2016-2017 Oklahoma Wheat Variety Performance Tests. (cont'd).**

| Source                   | Variety            | % wheat protein relative to location mean |             |             |             |                     |                              |                            |                 |             |            |  |
|--------------------------|--------------------|-------------------------------------------|-------------|-------------|-------------|---------------------|------------------------------|----------------------------|-----------------|-------------|------------|--|
|                          |                    | Goodwell<br>Irrigated                     | Homestead   | Kildare     | Lahoma      | Lahoma<br>Fungicide | Marshall<br>Dual-<br>Purpose | Marshall<br>Grain-<br>only | Union<br>Thomas | City        | Walters    |  |
| AGSECO                   | AG Icon            | 0.4                                       | -           | -           | 0.8         | 0.5                 | -                            | -                          | -               | -           | -          |  |
| AGSECO                   | AG Robust          | 0.6                                       | -           | -           | -0.2        | 0.0                 | -                            | -                          | -               | -           | -          |  |
| PlainsGold               | Avery              | -1.1                                      | -           | -           | 0.3         | -0.8                | -                            | -                          | -               | -           | -          |  |
| OGI                      | Bentley            | -0.5                                      | -0.5        | -0.3        | -0.4        | -0.7                | 0.1                          | -0.6                       | -0.7            | -1.9        | -0.4       |  |
| OGI                      | Billings           | 0.8                                       | 0.7         | 0.1         | 0.3         | 0.0                 | 0.3                          | -0.4                       | 0.8             | 0.4         | -          |  |
| Syngenta                 | Bob Dole           | 0.5                                       | -           | -           | 0.2         | 0.3                 | -                            | -                          | -               | -           | -          |  |
| PlainsGold               | Brawl CL Plus      | -0.1                                      | -           | -           | 1.2         | 1.3                 | -                            | -                          | -               | -           | -          |  |
| PlainsGold               | Byrd               | -0.8                                      | -           | -           | -0.2        | -0.6                | -                            | -                          | -               | -           | -          |  |
| OGI                      | Doublestop CL Plus | 0.8                                       | 1.5         | 1.1         | 0.9         | 1.1                 | -0.4                         | 0.3                        | 0.8             | 1.7         | 0.3        |  |
| OGI                      | Duster             | -0.3                                      | -0.1        | 0.2         | -0.1        | -0.4                | -0.2                         | 0.1                        | 0.3             | 0.2         | 0.0        |  |
| OSU                      | Endurance          | 0.1                                       | 0.4         | -0.2        | 0.7         | 0.6                 | 0.0                          | -0.4                       | 0.6             | 1.1         | 0.6        |  |
| OGI                      | Gallagher          | 0.2                                       | 0.1         | -0.3        | -0.5        | -0.2                | -1.0                         | -0.4                       | 0.2             | 0.2         | -0.1       |  |
| AGSECO                   | Hot Rod            | 0.1                                       | -           | -           | -0.2        | -0.2                | -                            | -                          | -               | -           | -          |  |
| OGI                      | Iba                | -1.1                                      | -0.2        | -0.4        | -0.7        | -0.8                | -0.4                         | 0.6                        | -0.2            | 0.1         | -0.3       |  |
| KWA                      | Joe                | -0.5                                      | -0.8        | -0.9        | -0.2        | -0.4                | 0.2                          | -0.2                       | -0.5            | -           | -          |  |
| PlainsGold               | Langin             | 0.4                                       | -           | -           | -0.3        | -0.4                | -                            | -                          | -               | -           | -          |  |
| KWA                      | Larry              | -0.4                                      | -0.5        | 0.3         | -0.2        | -0.7                | -0.4                         | 0.8                        | -0.5            | -           | -          |  |
| LCS                      | LCS Chrome         | -0.1                                      | 0.0         | 0.5         | 1.3         | 1.3                 | 0.2                          | 0.0                        | 0.3             | 1.0         | -0.1       |  |
| LCS                      | LCS Mint           | -0.8                                      | -1.0        | -0.8        | -0.5        | -0.6                | -0.4                         | -0.1                       | -0.9            | -1.0        | 0.1        |  |
| LCS                      | LCS Pistol         | -0.4                                      | -0.2        | -0.5        | 0.1         | -0.4                | 0.0                          | -0.4                       | -0.2            | 0.8         | -0.5       |  |
| LCS                      | LCS Wizard         | -0.2                                      | -           | -           | 0.5         | 0.5                 | -                            | -                          | -               | -           | -          |  |
| OGI                      | Lonerider          | 0.5                                       | -0.1        | -           | -           | -                   | -                            | -                          | -0.2            | -           | -          |  |
| Dyna-Gro                 | Long Branch        | -1.2                                      | -           | -           | 0.4         | 0.3                 | -                            | -                          | -               | -           | -          |  |
| OGI                      | NF 101             | -0.5                                      | -           | -           | 0.0         | 0.4                 | -                            | -                          | -               | -           | -          |  |
| OGI                      | Ruby Lee           | 1.1                                       | 0.3         | 0.0         | -0.3        | 0.5                 | 0.8                          | -0.7                       | 0.7             | 2.0         | 0.0        |  |
| OGI                      | Smith's Gold       | 0.0                                       | -0.5        | 0.5         | 0.2         | -0.3                | -0.1                         | 0.1                        | -0.5            | -1.4        | -0.2       |  |
| OGI                      | Spirit Rider       | -0.1                                      | -           | 0.4         | -           | -                   | -                            | -                          | -               | -           | -          |  |
| OGI                      | Stardust           | 0.6                                       | 0.7         | -           | 1.3         | 0.9                 | 0.6                          | 0.3                        | -               | -           | -          |  |
| Syngenta                 | SY Achieve CL2     | 1.4                                       | -           | -           | 0.3         | 0.2                 | -                            | -                          | -               | -           | -          |  |
| Syngenta                 | SY Benefit         | -0.2                                      | -           | -           | -0.4        | -0.9                | -                            | -                          | -               | -           | -          |  |
| Syngenta                 | SY Drifter         | 0.4                                       | -           | -           | 0.5         | 0.6                 | -                            | -                          | -               | -           | -          |  |
| Syngenta                 | SY Flint           | -0.3                                      | 0.5         | -0.3        | -0.8        | -0.2                | -0.3                         | 1.2                        | 0.3             | -0.8        | -0.1       |  |
| Syngenta                 | SY Grit            | -0.3                                      | -           | -           | 0.2         | -0.3                | -                            | -                          | -               | -           | -          |  |
| Syngenta                 | SY Llano           | -                                         | 0.4         | 0.4         | 0.1         | 0.7                 | -1.1                         | 0.5                        | 0.6             | -0.3        | 0.6        |  |
| Syngenta                 | SY Monument        | -0.3                                      | -0.3        | -0.1        | -0.6        | -0.3                | 1.0                          | 0.2                        | -0.2            | -           | -          |  |
| Syngenta                 | SY Razor           | -                                         | -           | -           | -           | -                   | -                            | -                          | -               | 0.0         | 0.7        |  |
| Syngenta                 | SY Rugged          | -0.1                                      | -           | -           | -0.2        | -0.6                | -                            | -                          | -               | -           | -          |  |
| LCS                      | T158               | -0.8                                      | -           | -           | 0.1         | -0.5                | -                            | -                          | -               | -           | -          |  |
| Watley Seed              | TAM 112            | 0.7                                       | -           | -           | 0.3         | -0.2                | -                            | -                          | -               | -           | -          |  |
| AGSECO                   | TAM 114            | 0.3                                       | -           | -           | -0.3        | -0.8                | -                            | -                          | -               | -           | -          |  |
| Watley Seed              | TAM 204            | -0.2                                      | -0.2        | 0.5         | 0.5         | -0.2                | 0.2                          | 0.0                        | 0.5             | -0.4        | 0.3        |  |
| KWA                      | Tatanka            | -0.9                                      | -1.3        | -1.2        | -1.2        | -1.1                | -0.2                         | -0.2                       | -1.2            | -           | -          |  |
| WestBred                 | WB4269             | -0.5                                      | -           | -           | 0.1         | 0.3                 | -                            | -                          | -               | -           | -          |  |
| WestBred                 | WB4303             | 0.9                                       | -           | -           | -0.8        | -0.4                | -                            | -                          | -               | -           | -          |  |
| WestBred                 | WB4458             | 0.8                                       | 0.2         | 1.1         | -0.7        | 0.2                 | -0.5                         | -0.1                       | 0.3             | 0.2         | 1.3        |  |
| WestBred                 | WB4515             | 0.8                                       | -           | -           | 0.0         | -0.1                | -                            | -                          | -               | -           | -          |  |
| WestBred                 | WB4721             | 0.7                                       | -           | -           | 0.2         | 0.5                 | -                            | -                          | -               | -           | -          |  |
| WestBred                 | WB-Cedar           | 0.1                                       | 0.3         | 0.2         | -0.1        | 1.1                 | -0.7                         | -0.3                       | 0.8             | -1.0        | -          |  |
| WestBred                 | WB-Grainfield      | -0.1                                      | -1.5        | -0.6        | -0.4        | -0.1                | -0.6                         | -0.8                       | -0.6            | -0.6        | -0.5       |  |
| WestBred                 | Winterhawk         | -0.7                                      | -           | -           | -1.0        | -0.8                | -                            | -                          | -               | -           | -0.2       |  |
| KWA                      | Zenda              | -1.0                                      | -           | -           | -1.0        | -0.4                | -                            | -                          | -               | -           | -          |  |
| <b>OSU Experimentals</b> |                    |                                           |             |             |             |                     |                              |                            |                 |             |            |  |
|                          | OK11755W-9W        | -0.2                                      | -           | -           | 0.2         | -0.4                | -                            | -                          | -               | -           | -          |  |
|                          | OK11D25005         | -                                         | -           | -           | -           | -                   | -0.1                         | -0.8                       | -               | 1.0         | -0.5       |  |
|                          | OK12206-2          | 0.3                                       | -           | -           | -0.5        | -0.1                | -0.4                         | 0.8                        | -               | -           | -          |  |
|                          | OK12621            | -                                         | -           | -           | -           | -                   | 0.6                          | -0.2                       | -               | -           | -          |  |
|                          | OK12716R/W         | 0.3                                       | -0.1        | 0.0         | -0.4        | -0.3                | 0.7                          | 0.5                        | -0.3            | -1.3        | -0.6       |  |
|                          | OK12912C-2         | -                                         | 1.3         | -           | 0.9         | 0.7                 | -                            | -                          | -               | -           | -          |  |
|                          | OK12D22002-077     | 0.4                                       | 0.7         | 0.1         | 0.2         | 0.1                 | -                            | -                          | -               | -           | -          |  |
|                          | OK12D22004-016     | -1.2                                      | -           | -           | -0.4        | 0.1                 | -                            | -                          | -               | -           | -          |  |
|                          | OK13209            | -                                         | 1.6         | -           | 0.8         | 0.8                 | -                            | -                          | -               | -           | -          |  |
|                          | OK13621            | 0.2                                       | -           | -           | 0.3         | 0.3                 | -                            | -                          | -               | -           | -          |  |
|                          | OK14319            | -                                         | -           | -           | -           | -                   | 0.6                          | -0.1                       | -               | 0.2         | -          |  |
|                          | <b>Mean</b>        | <b>16.5</b>                               | <b>10.8</b> | <b>10.4</b> | <b>11.2</b> | <b>11.2</b>         | <b>12.3</b>                  | <b>12.2</b>                | <b>9.7</b>      | <b>11.9</b> | <b>8.5</b> |  |
|                          | <b>LSD (0.05)</b>  | <b>0.8</b>                                | <b>0.6</b>  | <b>0.7</b>  | <b>0.8</b>  | <b>0.8</b>          | <b>NS</b>                    | <b>NS</b>                  | <b>0.7</b>      | <b>1.0</b>  | <b>0.3</b> |  |

## **PARTICIPATING SEED COMPANIES**

### **AGSECO, Inc.**

Steve Ahring  
P.O. Box 7  
Girard, KS 66743  
Phone: 800-962-5429  
Email: [steve@delangeseed.com](mailto:steve@delangeseed.com)  
[www.agseco.com](http://www.agseco.com)  
Varieties: AG Robust, Hot Rod, TAM 114

### **Colorado Wheat Research Foundation (PlainsGold)**

Brad Erker  
4026 S. Timberline Rd. Ste. 100  
Fort Collins, CO 80525  
Phone: (970) 449-6994  
[www.coloradowheat.org](http://www.coloradowheat.org)  
Varieties: Avery, Brawl CL Plus, Byrd, Langin

### **Dyna-Gro Seed**

Ryan Klamforth  
(419) 310-6370  
[www.dynagroseed.com](http://www.dynagroseed.com)  
Varieties: Long Branch

### **Kansas Wheat Alliance (KWA)**

Daryl Strouts  
1990 Kimball Ave.  
Manhattan, KS 66502  
Phone: (785) 320-4080  
Email: [kwa@kansas.net](mailto:kwa@kansas.net)  
[www.kswheatalliance.org](http://www.kswheatalliance.org)  
Varieties: Joe, KS-61193K-2 (Bob Dole), KS080448C\*-102 (AG Icon), Larry, Tatanka, Zenda

### **Limagrain Cereal Seeds (LCS)**

Drew Hendricker  
2040 SE Frontage Rd.  
Fort Collins, CO 80525  
Phone: (970) 498-2218  
Email: [drew.hendricker@limagrain.com](mailto:drew.hendricker@limagrain.com)  
[www.limagraincerealseed.com](http://www.limagraincerealseed.com)  
Varieties: LCS Chrome, LCS Mint, LCS Pistol, LCS Wizard, T158

### **Monsanto/WestBred**

John Fenderson  
1616 E. Glencoe Rd.  
Stillwater, OK 74075  
Phone: (620) 243-4263  
Email: [john.m.fenderson@monsanto.com](mailto:john.m.fenderson@monsanto.com)  
[www.westbred.com](http://www.westbred.com)  
Varieties: WB4269, WB4303, WB4458, WB4515, WB4721, WB-Cedar, WB-Grainfield, Winterhawk

### **Oklahoma Genetics Inc. (OGI)**

Mark Hodges  
P.O. Box 2113  
Stillwater, OK 74076  
Phone: (405) 744-7741  
[www.okgenetics.com](http://www.okgenetics.com)  
Varieties: Bentley, Billings, Doublestop CL Plus, Duster, Gallagher, Iba, Lonerider, NF 101, Ruby Lee, Smith's Gold, Spirit Rider, Stardust

### **Oklahoma Foundation Seed Services (OSU)**

Jeff Wright  
2902 W. 6th Ave.  
Stillwater, OK 74074  
Phone: (405) 744-7741  
[www.ofss.okstate.edu](http://www.ofss.okstate.edu)  
Varieties: Endurance

### **Syngenta Seeds**

Greg Gungoll  
1517 Osage Ave.  
Enid, OK 73703  
Phone: (405) 714-2839  
Email: [greg.gungoll@syngenta.com](mailto:greg.gungoll@syngenta.com)  
[www.agriprowheat.com](http://www.agriprowheat.com)  
Varieties: SY Achieve CL2, SY Benefit, SY Drifter, SY Flint, SY Grit, SY Llano, SY Monument, SY Razor, SY Rugged

### **Watley Seed**

Andy Watley  
Box 51  
Spearman, TX 79081  
Phone: (806) 659-3838  
Email: [watleyseed@valornet.com](mailto:watleyseed@valornet.com)  
[www.watleyseed.com](http://www.watleyseed.com)  
Varieties: TAM 112, TAM 204

## The Oklahoma Cooperative Extension Service

### *Bringing the University to You!*

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.

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