U.S. HRW Wheat Crop Update

IAOM Central and Wheat State District Meeting

Mark Hodges
Plains Grains, Inc.
Stillwater, Oklahoma
hodgesml1@cox.net
Overview

• US wheat crop review
  – Planted/Harvested

• 2018 Hard Red Winter wheat crop early yield and quality
  – Southern Plains; Central Plains; Northern Plains; Pacific Northwest
  – Quality data from Plains Grains Inc.
Outlook for US Hard Red Winter 2018 Production and Quality
US HRW Production Region

Source – US Wheat Associates
### July 2018 Crop Production

<table>
<thead>
<tr>
<th>Crop</th>
<th>Unit</th>
<th>July 2018</th>
<th>% Change From Previous Forecast</th>
<th>% Change From Previous Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat, Winter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvested</td>
<td>Mil Ac</td>
<td>24.8</td>
<td>NC</td>
<td>-1.8</td>
</tr>
<tr>
<td>Yield</td>
<td>Bu/Ac</td>
<td>48.0</td>
<td>-0.8</td>
<td>-4.4</td>
</tr>
<tr>
<td>Production</td>
<td>Bil Bu</td>
<td>1.19</td>
<td>-0.4</td>
<td>-6.1</td>
</tr>
<tr>
<td>Production by Class</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hard Red</td>
<td>Mil Bu</td>
<td>657</td>
<td>+1.1</td>
<td>-12.4</td>
</tr>
<tr>
<td>Soft Red</td>
<td>Mil Bu</td>
<td>303</td>
<td>-4.0</td>
<td>+3.6</td>
</tr>
<tr>
<td>White</td>
<td>Mil Bu</td>
<td>232</td>
<td>+0.2</td>
<td>+2.4</td>
</tr>
</tbody>
</table>
The 2018 winter wheat planted area, at 32.7 million acres, is up slightly from 2017. Of this total, 23.2 million acres are hard red winter wheat, 5.85 million acres are soft red winter wheat, and 3.64 million acres are white winter wheat.
Principal Crop Planted Acres (000)
2018 change from 2017

- S Wheat, 1,618
- Cotton, 858
- Sorghum, 306
- Rice, 227
- Oats, 128
- W Wheat, 12
- Canola, -1
- Potatoes, -5
- Tobacco, -12
- Sunflowers, -18
- Sugarbeets, -18
- Hay, -58
- Dry Beans, -61
- Barley, -195
- D Wheat, -303
- Peanuts, -334
- Corn, -2,141

Harvested Acres for Hay & Tobacco

2018 Estimates Not Available for Proso Millet, Rye, & Sugarcane.
## Winter Wheat Area Harvested, Yield, and Production - States and United States: 2017 and Forecasted July 1, 2018

<table>
<thead>
<tr>
<th>State</th>
<th>Area harvested</th>
<th>Yield per acre</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>2018</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>June 1</td>
<td>July 1</td>
</tr>
<tr>
<td>Colorado</td>
<td>2,020</td>
<td>2,050</td>
<td>43.0</td>
</tr>
<tr>
<td>Idaho</td>
<td>670</td>
<td>720</td>
<td>80.0</td>
</tr>
<tr>
<td>Kansas</td>
<td>6,950</td>
<td>7,300</td>
<td>48.0</td>
</tr>
<tr>
<td>Montana</td>
<td>1,590</td>
<td>1,450</td>
<td>42.0</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1,020</td>
<td>1,000</td>
<td>46.0</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2,900</td>
<td>2,200</td>
<td>34.0</td>
</tr>
<tr>
<td>Oregon</td>
<td>690</td>
<td>710</td>
<td>63.0</td>
</tr>
<tr>
<td>South Dakota</td>
<td>520</td>
<td>730</td>
<td>40.0</td>
</tr>
<tr>
<td>Texas</td>
<td>2,350</td>
<td>1,800</td>
<td>29.0</td>
</tr>
<tr>
<td>Washington</td>
<td>1,650</td>
<td>1,650</td>
<td>73.0</td>
</tr>
<tr>
<td>United States</td>
<td>25,291</td>
<td>24,831</td>
<td>50.2</td>
</tr>
</tbody>
</table>
US Hard Red Winter Wheat
Harvest Progress and Overall Average Kernel Data to Date

**July 26, 2018**

<table>
<thead>
<tr>
<th>Tst</th>
<th>Exp</th>
<th>MST</th>
<th>Pro %</th>
<th>DKG</th>
<th>TKW</th>
<th>FN</th>
<th>Grade</th>
<th>Test Weight</th>
<th>FM</th>
<th>DMG</th>
<th>S&amp;B</th>
<th>DEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>378</td>
<td>500</td>
<td>11.4</td>
<td>12.6</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td>385*</td>
<td>1HRW</td>
<td>60.6</td>
<td>79.7</td>
<td>0.2</td>
</tr>
</tbody>
</table>

**July 20, 2018**

<table>
<thead>
<tr>
<th>Tst</th>
<th>Exp</th>
<th>MST</th>
<th>Pro %</th>
<th>DKG</th>
<th>TKW</th>
<th>FN</th>
<th>Grade</th>
<th>Test Weight</th>
<th>FM</th>
<th>DMG</th>
<th>S&amp;B</th>
<th>DEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>293</td>
<td>500</td>
<td>11.2</td>
<td>12.8</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td>385*</td>
<td>1HRW</td>
<td>60.6</td>
<td>79.7</td>
<td>0.2</td>
</tr>
</tbody>
</table>
2018 HRW crop conditions

- “Muddied” in some of this crop in some areas.
- Most areas of the southern and central Plains had very little (some none!!!) moisture after planting (some not until harvest). AGAIN!!
- Late High Temperatures as crop finished out…AGAIN!!!!

• Virtually no disease and very few insect problems (correlates with no moisture)…vectors died of thurst!
  - CO & NE especially had Sawfly damage
  - Lodging issues when storms arrived.

• Hail Hail Hail and more Hail and Rain
  - CO, NE and KS
  - Storms and rains continue to prolong harvest.

• Overall, a varying conditions created varying results with both yields and quality, but overall this is a very sound and functional crop.
2018 HRW Crop Conditions
-Continued-

- http://droughtmonitor.unl.edu/Maps/Animations.aspx
- 2\textsuperscript{nd} Lowest planted Winter Wheat acres on record.
- Highly variable growing conditions creating variable results!!!! AGAIN!
- 2 years of back to back low protein high production years, needed to insure enough nitrogen was down.
2018 Southern Plains

• TX harvest
  – 54 million down AGAIN from 68 million bushels which was down from 90 million 2 years ago.
  – Test weights good; proteins above average and better than the last 2 years (especially in the Panhandle and High Plains.

• Oklahoma harvest lower with fewer acres AGAIN!!
  – 55 million bushels vs 90.7 million bushels last year vs 137 million bushels two years ago.
  – Test weights good and proteins very good especially moving west

• Overall, fewer acres planted and harvested AGAIN, but much better and proteins and quality overall considering the two previous years.
Colorado, Nebraska, South Dakota, Wyoming and Montana

- Northeast Colorado, western Nebraska and NW Kansas benefited from good weather early, but harvest has been a different story. Protein have been generally lower in these areas.
  - CO 87 to 76, mb; NE 47 to 48 mb; SD 21 to 38 mb; MT 67 to 73
  - Harvest themes stayed consistent as it moved north
  - Nebraska; little change in harvested acres
    - 1.0 million acres harvested
    - Production lower at 46 million bushels; 25 million bushels fewer.
  - South Dakota 520K vs 730K with a 12 bu/ac yield increase and extremely high quality!!
    - 17 million bushels increase over 2017.
      - South Dakota averaged 61.8 lb/bu and 13.9% protein statewide
  - Montana 140K fewer acres, but 8 bu/ac increase in yield.
    - 6 million bushels increase over last year in production to 72.5 mb.
    - Some stress in pockets should produce protein.
  - PNW …a really good crop coming volume (relative) and quality!
Kansas early 2018 data

• Main story lines:
  – 2018 Production of 277 mb…2017 Production of 333 mb…2016 production of 454 mb
  – Above average protein (exception was NW corner of the state). Very good functional crop as per early testing.

• Yields variable; AGAIN!!! Late freeze made a significant difference (especially varieties that break dormancy early)

• Drought was a major factor across the SE ¾ of the state but especially west and southwest.

• Very good protein averages…
  • Extreme NW had a somewhat lower protein average (11.7%) than the average of the whole state at (12.8%) and lower protein extended into CO, WY and NE adjacent to that area of Kansas.
  • Kansas averaged 12.8% protein

• Bake evaluations just beginning, but look for this crop to perform very well and be highly functional.
NE Colorado, NW Kansas, Wyoming, Western Nebraska South Dakota

Above Average Number of Hail Storms
NE Colorado, NW Kansas, Wyoming, Western Nebraska South Dakota
Above Average Number of Hail Storms
Wheat planted (foundation seed) in NW Oklahoma in October 2017 (in limited moisture) Harvested June 2018

Yield 7 bu/ac
Never received enough moisture from October to June to get full germination and emergence.
2018

YEAR OF THE "BAKER/BLENDER"!
2016 Gulf Tributary HRW Grade Distribution

*Partial

- #1 <11.5: 34%
- #1 11.5 - 12.5: 21%
- #1 >12.5: 3%
- #2 <11.5: 25%
- #2 11.5 - 12.5: 10%
- #2 >12.5: 1%
- Other: 6%
2017 Gulf Tributary HRW
Grade Distribution*

- #1 < 11.5: 41%
- #1 11.5 - 12.5: 13%
- #1 > 12.5: 2%
- #2 < 11.5: 19%
- #2 11.5 - 12.5: 9%
- #2 > 12.5: 2%
- Other: 14%

*Partial
2018 Gulf Tributary HRW Grade Distribution*

*Partial

- #1 >12.5: 34%
- #1 11.5 - 12.5: 17%
- #1 <11.5: 11%
- #2 11.5 - 12.5: 5%
- #2 >12.5: 20%
- #2 <11.5: 3%
- Other: 10%

*Partial
2017 Gulf HRW
Evaluation based on individual protein samples*

*Partial

**Low Protein** – Represents all samples less than 11.5% protein*. (62%)

**Med. Protein** – Represents all samples between 11.5% and 12.5% protein*. (29%)

**High Protein** – Represents all samples greater than 12.5% protein*. (9%)

*12% Moisture Basis
2018 Gulf HRW
Evaluation based on individual protein samples*
*Partial

Low Protein – Represents all samples less than 11.5% protein*.
(15%)

Med. Protein – Represents all samples between 11.5% and 12.5% protein*.
(23%)

High Protein - Represents all samples greater than 12.5% protein*.
(62%)

*12% Moisture Basis
2015/2016/2017/2018 Partial GULF HRW - Test Weight Distribution

- 2015 Average 77.3 kg/hl
- 2016 Average 79.7 kg/hl
- 2017 Average 79.1 kg/hl
- 2018 Average 79.3 kg/hl Partial Data

<table>
<thead>
<tr>
<th>Test Weight (kg/hl)</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;75</td>
<td>23</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>75-76.9</td>
<td>15</td>
<td>9</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>77-78.9</td>
<td>33</td>
<td>31</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>79-80.9</td>
<td>33</td>
<td>29</td>
<td>32</td>
<td>37</td>
</tr>
<tr>
<td>81-82.9</td>
<td>23</td>
<td>26</td>
<td>26</td>
<td>35</td>
</tr>
<tr>
<td>&gt;83</td>
<td>6</td>
<td>18</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>
2015/2016/2017/2018 Partial
GULF HRW – Protein Distribution

Percent of Samples

Protein (%)

<10 10's 11's 12's 13's 14's 15's
1 34 43 57 38 32 3 1
6 35 40 16 17 3 0 0
0 2 2 16 17 3 0 2
10 4 10 3 10 0 0 2

2015 Average 12.5%
2016 Average 11.2%
2017 Average 11.2%
2018 Average 12.8% Partial Data
www.plainsgrains.org

• Maps
  – Protein
  – Test Weight
  – TKW
  – Moisture
  – Dockage

• Harvest updates posted on US Wheat Associates website uswheat.org
Test Weight, lbs/bu
Individual Samples
Test Weight, kg/hl
Individual Samples
Shrunken & Broken, %
Individual Samples
Dockage, %
Individual Samples
Wheat Protein, %
Individual Samples
Wheat Ash (12% mb), %
Individual Samples
Falling Number, sec
Individual Samples
The data contained in this presentation were collected, tested and analyzed by PLAINS GRAINS, INC., an organization of the HRW States of Texas, Oklahoma, Colorado, Kansas, Nebraska, Wyoming, South Dakota, Montana, Washington, Oregon, Idaho and North Dakota in cooperation with USDA-ARS Hard Winter Wheat Quality Laboratory, Manhattan, Kansas. For more detailed information about the 2018 HRW crop go to:

www.plainsgrains.org