**Endurance**

**HARD RED WINTER WHEAT**

**Endurance Characteristics**

**Yield**
- Grain-only yield
- Dual-purpose yield
- Test weight
- Forage yield

**Disease**
- Leaf rust
- Stripe rust
- Powdery mildew
- Soilborne mosaic virus**

**Other traits**
- Recovery from grazing
- Straw strength
- Acid soil tolerance
- Late first hollow stem

For more information on Endurance contact

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Seed Stocks
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(405) 744-7741
www.oklahomaseed.com

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**Endurance area of adaptation**

**Endurance is resistant to soilborne mosaic virus but moderately susceptible to wheat spindle streak mosaic virus**
**Endurance hard red winter wheat**

**History**

Endurance was released by the Oklahoma State University Wheat Improvement Team in 2004 to serve the unique needs of dual-purpose wheat producers. Experimentally tested as OK94P549-11, Endurance has parentage that includes TAM 105, Siouxland, and 2180. Endurance is PVP protected and can only be sold as a certified class of seed.

**Yield Potential**

Endurance has performed well in dual-purpose and grain-only systems throughout the state of Oklahoma (Table 1). Since Endurance is a late-maturing variety, it benefits from moderate temperatures during May. Years of yield data, however, indicate that Endurance has ability to maintain good yield potential in stressed environments as well. Test weight of Endurance is average.

**Unique Traits**

Acid soil tolerance is one of Endurance’s greatest strengths, and Endurance is one of the most tolerant varieties currently available to farmers. Even though Endurance tolerates low soil pH well, growers are still advised to lime according to soil-test recommendations.

Endurance reaches first hollow stem as much as two weeks later than Jagger, which allows for an extended grazing window in the spring. This trait combined with very good regrowth following grazing makes Endurance a very good dual-purpose wheat variety.

**Disease Package**

Endurance is moderately resistant to leaf rust and stripe rust as an adult plant. It is moderately susceptible to powdery mildew. Yield data from fungicide-treated plots at Lahoma and Apache, OK show that yield of Endurance can be improved with the use of foliar fungicides in years with moderate to heavy disease pressure.

**Management**

Endurance is a moderately tall variety with good straw strength. So, lodging is possible with Endurance but not likely if fertility and planting density are managed properly.

**Management (cont’d)**

As mentioned previously, Endurance is a late to first hollow stem variety. While this trait extends the grazing window in the spring, it does not mean that Endurance is more tolerant of grazing past first hollow stem than other varieties. Growers should still monitor first hollow stem in fields of Endurance and manage accordingly.

Endurance has a wide area of adaptation and is a good fit for dual-purpose and grain-only systems in Oklahoma and surrounding areas. The later maturity of Endurance is a good way to balance out acreage of early-maturing varieties and hedge against spring freeze injury. Planting a later-maturity variety will not make producers immune to spring freeze injury, but if a late spring freeze occurs, damage in later-maturing varieties is frequently less than in earlier-maturing varieties.

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**Table 1. Two-year average yield (bu/ac) for Oklahoma variety trials in 2008 & 2009**

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<th>Variety</th>
<th>Elk City</th>
<th>Buffalo</th>
<th>Lahoma</th>
<th>Marshall</th>
<th>Marshall</th>
<th>El Reno</th>
<th>Cherokee</th>
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<td>64</td>
<td>46</td>
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<tr>
<td>Jagger</td>
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<td>49</td>
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</table>

Current yield data for these and other varieties are available at [www.wheat.okstate.edu](http://www.wheat.okstate.edu)

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