

# Grain Yield From Wheat Variety Trials 1999-2000

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**Gene Krenzer, Richard Austin, and Charles Luper**

**Department of Plant and Soil Sciences  
Division of Agricultural Sciences and Natural Resources  
Oklahoma State University**

## Test Locations

The 1999-2000 wheat crop was the fourth consecutive crop with above average yield (37 bu/a). The planted and harvested acreage was down to 6.0 and 4.1 million, respectively.

Even though soils remained dry in early September, on September 12, 7% of the wheat was planted and by September 27, 34% of the wheat was planted, compared to 28% for the five-year average.

After September rains, many areas of the state turned dry again before the wheat was planted and hopes for forage to graze cattle dwindled. Temperatures remained above normal. In the northern half of the state, rainfall was above normal in November. The temperature and moisture combined to result in more wheat growth than expected by January 1. The southern half of the state remained dry throughout the fall. Wheat in many fields had not emerged by mid-December.

## **Pest Problems**

The primary pest problems during the fall of 1999 were aphids and brown wheat mite. Greenbugs and/or oat-bird cherry aphids were present in sufficient numbers that fields were sprayed. In particular, greenbugs were a severe problem in two- to three-leaf wheat in November. A few fields were verified to have barley yellow dwarf virus as early as mid-December. Root rots started becoming apparent in January. Fields looking unusually purple were quite common in north central Oklahoma in January, but no common cause could be identified. Low pH, low phosphorus, and barley yellow dwarf virus were eliminated as causes in most of the fields. It was concluded that the purpling was probably caused by anthocyanin accumulation. However, we were not able to identify why this occurred in some fields and not others. Strawbreaker caused severe lodging in many acres in north central Oklahoma and into Kansas.

## **Harvest**

Winter and spring were unusually warm and wheat development was well ahead of normal at first hollow stem and heading. We were very fortunate not to have a freeze in March or April. Late May temperatures soared over 100 degrees for several days in parts of the state, hastening maturity and harvest. Rains curtailed harvest about June 13 with about 80% harvested. The remainder of harvest was exceptionally difficult because of wet conditions. Sprouting in the head was common in the late harvested wheat, irrespective of kernel color.

### **New Varieties for 1999-2000**

Varieties included in the trials for the first time were Intrada, AgriPro Thunderbolt, and Trego. Intrada is the first white wheat release from OSU (in 2000) with height similar to Chisholm and 2174, medium-late maturity and intermediate first hollow stem (similar to Custer.) Intrada has excellent test weight, resistance to soilborne mosaic virus, and moderate resistance to leaf rust. Trego is a hard white wheat variety released by Kansas State in 1999. Trego has excellent test weight, medium height, and medium late maturity. Trego is very susceptible to low pH, resistant to soilborne mosaic virus, and moderately resistant to leaf rust. Both Intrada and Trego should be limited to northwest Oklahoma because of susceptibility to sprouting. White wheat varieties are denoted by (W) following the name in the tables. Thunderbolt, a hard red winter wheat variety, is late in maturity, tall, and has good test weight. Thunderbolt is susceptible to low pH and to soilborne mosaic virus, but has good leaf rust resistance.

### **Gaicho Treatment**

Gaicho is a seed treatment that controls aphids early in the season. By controlling aphids, it reduces or eliminates early infections of barley yellow dwarf virus that can strongly reduce wheat yield. Trials at a few locations in recent years indicate economic benefits to Gaicho. Therefore, we wanted to investigate the benefits over many locations and included a 2174 treated with Gaicho at 1 oz/a to compare with untreated 2174 at all locations. Averaged across 22 trials this year, wheat yield was increased 0.8 bu/a with Gaicho. This was not statistically significant or economically profitable.

### **Experimental Lines Included**

For the second year, we have included several OSU candidate cultivars that have potential for release in the next year or two. These include OK95G703, a hard white wheat line, and three hard red winter wheat lines called OK94P549-2C, OK95571, and OK96717. These are included to evaluate forage capability and collect grain data from sites not normally used as test locations in the wheat breeding program.

### **Additional Information on Web**

For information on disease resistance and other characteristics of all wheat varieties grown in Oklahoma, see the "Wheat Variety Characteristic Chart" under Variety

Information on the web at <http://clay.agr.okstate.edu/wheat/wit.html>. The variety information is updated regularly to give the latest in disease ratings for these varieties and incorporate new varieties. From the above address you can also connect to the latest forage data.

### **Cooperation Acknowledged**

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