



Grain Yield From Wheat Variety Trials 2001-2002



Production Technology – Crops

PT 2002-18

July 2002

Vol. 14, No. 18

Gene Krenzer, Rick Kochenower, Richard Austin, and Kris Bellinghausen
Department of Plant and Soil Sciences
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

As of July 1, the Oklahoma Department of Agriculture estimate of the wheat crop was 105 million bushels harvested from 3.5 million acres (the smallest harvested acreage since 1957), for an average yield of 30 bushels per acre. Both acres harvested and average yield decreased from last year's numbers of 4.2 million acres harvested and 34 bu/a.

The 2001-2002 wheat crop in Oklahoma started slowly for the second year in a row. Soils remained exceedingly dry through early September. The first rains occurred around September 10. September temperatures were not exceptionally high so early planted wheat resulted in very good stands. Producers seemed very eager to plant on the moisture received in mid September, perhaps reacting to the dry planting conditions of 2000. By the first of October 60% of the wheat had been planted compared to a five-year average of 31%. Little rain occurred in October and much of the earliest planted wheat began suffering from drought stress, reducing forage production. Also October-planted wheat resulted in erratic stands due to variability in surface soil moisture at planting. Rains for the remainder of the fall were very scattered with the National Weather Service reporting between 25 and 50% of the normal precipitation for Oklahoma between October

and January. Wheat in most areas continued to suffer drought stress, limiting forage production. Ice and snow in January and February provided much needed precipitation in all but the northwest and panhandle.

Spring rains were barely adequate in many areas and too little, too late, or non-existent in the panhandle where the dryland wheat was almost 100 % abandoned. Grain filling

conditions were quite good except where limited moisture hastened maturity and reduced test weight.

Harvest tried to start on time in late May, but rains kept combines at a standstill for several days during the first two weeks of June.

Pest Problems

Pest problems during the fall of 2001 included weeds, leaf rust, and aphids. Ryegrass and cheat emerged at the same time as the wheat. Many producers who placed orders to have fields sprayed with Maverick were unable to get them sprayed before February because of drought stress. Leaf rust did appear in a few fields. Late in the fall, greenbugs and bird cherry-oat aphids became problems in many fields. As a result, we expected to find a high level of barley yellow dwarf mosaic virus in wheat this spring, but it did not occur.

Brown wheat mites were a problem in many drought-stressed fields in Northwest Oklahoma

<u>Outstanding Varieties</u>	
(Based on more than 2 years of data)	
<u>Yield</u>	<u>Test Weight</u>
2137	2174
2174	AgriPro Thunderbolt
Custer	Intrada
Trego	Trego
<u>New Varieties to Consider</u>	
<u>Yield</u>	<u>Test Weight</u>
AgriPro Jagalene	AgriPro Jagalene
Ok101	Ok102

especially during January through March. Wheat streak mosaic virus, which is transmitted by wheat curl mites that over-summer on volunteer wheat and grassy weeds, was more prevalent across Oklahoma than usual and totally destroyed some fields where infections occurred in the fall, but was not a problem in any variety trials. Leaf rust invaded late in the grain filling period, but was late enough at most locations to have little effect on yield of varieties with some resistance.

Unsuccessful Trials

Variety trials were planted at Boise City, Goodwell (dryland), Balko, and Buffalo, but drought stress was so severe that they were abandoned prior to harvest.

GaUCHO Treatment

GaUCHO is a seed treatment that controls aphids and Hessian fly early in the season. By controlling aphids with GaUCHO, early infections of barley yellow dwarf virus, which can strongly reduce wheat yield, may be reduced or eliminated. This was the third year of investigating the benefits of GaUCHO over many locations. GaUCHO was applied at 1 ounce per hundred weight of seed of 2174 to compare with untreated seed of 2174. GaUCHO had no effect on test weight and improved yield over 48 trials an average of 1.5 bushels per acre. At a 60 lb/a seeding rate the cost of the GaUCHO seed treatment was about equal to the benefit.

Protein Analyses

Wheat protein content is reported for the second year for several locations. The range in average protein among varieties from lowest to highest was only 2.3%, whereas the range in average wheat protein among locations was 6.4%. Larger differences in wheat protein

occurred due to nitrogen management practices and/or weather than due to variety.

New Feature

Tilt was applied to one-half of each plot in the Lahoma wheat variety trial. Yield increases from Tilt application were as high as 18 bu/a for some varieties, while others had no yield increase. The response is dependent upon the susceptibility of a particular variety to the diseases present during grain filling. During 2002, the primary diseases were tan spot, septoria leaf spot, and a little leaf rust.

New Varieties for 2001-2002

Varieties included in the trials for the first time were Above which is a Clearfield® wheat from Colorado, AgriPro Jagalene, two AGSECO experimentals (2202 and 2047), Cossack from Goertzen, 2145 from Kansas, and Ok102, a new OSU variety that was tested last year under experimental number OK97508.

Additional Information on the 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. From the above address you can also connect to the latest fall and full-season forage data.

Cooperation Acknowledged

These data result from a cooperative effort between the Oklahoma Agricultural Experiment Station, the Oklahoma Cooperative Extension Service, and the Oklahoma Wheat Commission.

Also supported by USDA-CSREES agreement no. 2001-34198-1040.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Sam E. Curl, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources.