

2009 WINTER ELITE WHEAT TRIAL AT ONTARIO, OREGON

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Introduction

Malheur Experiment Station provides one location for the Oregon State University Statewide Winter Elite Wheat variety testing program. The Ontario location compares soft white winter wheat variety performance in a furrow-irrigated, high yield potential environment. Plant breeders can use information on variety performance to compare advanced lines with released cultivars. Growers can use this information to make decisions about which soft white winter wheat varieties may perform best in their fields.

Methods

The trial was grown on Owyhee silt loam where the previous crop was sweet corn. After harvest, the corn stalks were flailed, the field was disked, and the soil was sampled and analyzed. Analysis showed pH at 7.9, low available nitrogen (N) (nitrate plus ammonium) at 8 ppm, low sulfates at 16 ppm, low manganese (Mn) at 4 ppm, and adequate iron at 10 ppm. Based on soil analyses, 100 lb elemental sulfur, 5 lb Mn, and 1 lb boron were broadcast on October 10, 2008. The soil was deep ripped, plowed, and ground hogged to prepare the seedbed. The field was corrugated into 30-inch rows.

The Winter Elite Wheat Trial was comprised of 38 soft white winter (SWW) wheat varieties and lines, and two club wheats. Seed was treated with Dividend[®] XL fungicide at 0.1 oz per 1lb of seed. The experimental design was a randomized complete block with three replications. Grain was planted on October 21, 2008, with a small plot grain drill in plots 5 by 20 ft, and the field was recorrugated. Thirty live seeds were planted per ft², equivalent to approximately 110 lb/acre.

On April 15, 125 lb N/acre was broadcast as urea. Broadleaf weeds were controlled with Bronate Advance[™] herbicide at 24 oz/acre applied on May 2. Alleys were cut with a sickle bar mower on June 30. Fifty percent heading was recorded on the day of the year when half of the culms had extended the peduncle above the collar of the flag leaf. Plant height at maturity was recorded for every replicate prior to harvest. The lengths of the plots were measured on July 17. The grain was harvested on July 21 with a Wintersteiger plot combine. Two rows of plots inadvertently did not receive the broadcast urea applications and the data from these plots were eliminated from further consideration, including all plots of the varieties 'Tubbs' and 'Xerpha'.

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Results

In 2009, the date of heading ranged from May 21 (day of year (DOY) 141) for 'Gene', OR2050293, OR2040726, 'Goetze' (ORH010920), and Westbred 528, to May 31 (DOY 151) for Cara (Table 1). Height at maturity ranged from 38 inches for ID9364901A to 31.9 inches for Brundage 96, Goetze, and ID00859. No lodging was observed in any of the varieties.

Yields ranged from 156 bu/acre for 'Legion' to 118.3 bu/acre for 'Coda'. Yield differences were compared using ANOVA and least significant differences at the 5 percent probability level, LSD (0.05). Differences in yield between varieties should be equal to or greater than the corresponding LSD (0.05) value before any variety is considered different from another in this trial. Information on previous wheat trials at Malheur Experiment Station is available on the web at <http://cropinfo.net>. Information on the performance of the varieties in this trial at other Oregon locations is available on the web at http://cropandsoil.oregonstate.edu/wheat/state_performance_data.htm.

Table 1. Yield (in 60-lb bushels), height, and days to heading for the grains planted in the Winter Elite Wheat Trial, Oregon State University, Malheur Experiment Station, Ontario, Oregon, 2009.

Variety or line	Yield bu/acre	Height inches	Day of year to 50% heading
Legion	156.0	37.6	145
ID9364901A	152.7	38.0	142
AP700CL	152.3	37.8	143
ID D-05	149.0	34.9	145
Salute	148.5	36.9	145
OR2060395	147.5	34.0	145
OR2050853	147.4	35.4	144
OR2040726	147.2	33.4	140
ORF2 267-03	147.1	36.1	148
Bitterroot	146.4	37.7	145
SkilesTubbs06	145.5	36.5	145
Westbred 528	145.2	35.7	141
Stephens	144.8	34.1	142
ORSS-1757	144.7	34.4	145
OR2050293	144.5	34.1	141
OR2060431	143.0	35.3	145
ORCF-103	142.7	35.4	147
OR2050910	142.2	35.5	147
Tubbs-06	141.9	37.8	143
Masami	139.8	37.8	150
OR2060916	139.5	34.6	145
ORCF-102	139.2	35.8	145
OR2050301	138.9	33.8	145
Skiles	138.2	32.4	147
ORCF-101R	138.1	34.7	145
OR2060926	137.6	35.4	145
CF101/102	137.3	35.9	145
OR2060181	134.3	32.5	145
Madsen	134.2	34.6	147
Goetze/Skiles	132.5	32.5	145
OR2060324	132.2	32.5	146
ORCF-101	130.7	34.8	146
Brundage 96	129.9	31.9	148
Goetze	129.6	31.9	141
Gene	127.7	32.0	141
Cara	126.7	33.9	151
ID00859	125.9	31.9	147
Coda	118.3	36.8	147
LSD (0.05)	8.6	1.6	Not available