ON-FARM WINTER WHEAT GRAIN VARIETY DRILL-STRIP TEST[1]

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Abstract

Stephens, Gene, Madsen, MacVicar, and Rod soft white winter wheat, and Rohde winter white club wheat were drill-strip tested for grain yield, protein, and other agronomic traits on the Bill Guthrie Farm, near Prineville, Oregon.

Introduction

New cereal varieties have been tested in research trials at Oregon State University Agricultural Experiment Stations, including Madras. An on-farm drill strip testing program was initiated in 1993 along with the State-Wide Cereal Testing Program. Various seed companies have made seed available for producers to test new variety releases in a side-by-side comparison on their farms. The objective was to test these new varieties, using Stephens as the check variety, for yield, quality, and other agronomic traits in producer fields.

Methods and Materials

Fifty-pound sacks of Stephens, Gene, Madsen, MacVicar, and Rod soft white winter wheat and Rohde winter white club wheat were planted with a 12-foot-wide, double-disk drill with 9-inch row spacing in early October, 1993 on the Bill Guthrie Farm, Prineville, Oregon. The seed was planted until the drill was empty. The demonstration was not replicated. The drill was not calibrated independently for each variety, hence plant populations varied. Irrigation was with a side roll sprinkler, applied as needed, as was weed control. Harvested plot size was 12 feet by 887 feet and yield was converted to bu/a (60 lb = bu). Grain was harvested with a John Deere combine with a 12 foot header. The grain was unloaded into a "weigh wagon," weighed and then augured into a truck. Samples were taken for test weight and protein, and measurements were taken for height and lodging. Protein was determined with a whole-grain, near infra-red analyzer. Yield and protein content are presented on a 10 and 12 percent moisture basis, respectively.

Results and Discussion

No disease or insect problems were encountered with the demonstration. Data are presented

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in Table 1. All of the varieties tested were recent releases, except Stephens. Rod had the best yield and lowest protein content. Rod is a Washington State University release that has performed average or better at most test sites across the state of Oregon. MacVicar had the second best yield and protein content. MacVicar has had lower protein content than most other varieties in university trials. Rohde is a new club white wheat that has excellent yield potential for a club wheat and good lodging resistance under irrigated conditions. Madsen is a high yielding variety that has replaced Stephens as the number one variety in Washington. Gene is a very short, awnletted, early-maturing variety with high yield potential, but has been erratic in yield. Gene is less winter hardy than Stephens. Rod and MacVicar had protein contents lower than 10.5 percent, the level that foreign buyers are requesting. As the plots were not replicated, statistical significance can not be determined.

Table 1. On-farm winter wheat grain variety drill strip results from the Bill Guthrie farm, Prineville Oregon in 1994.

Variety	Yield bu/a	Protein	Test Weight lb/bu	Height in.	Lodging	Grain Nitrogen Recovery lb/a
Stephens	121	11.2	58.6	38	0	143
Gene	113	11.9	56.6	36	0	142
Rohde	131	11.0	61.1	41	0	152
Madsen	126	11.3	58.3	39	0	150
MacVicar	141	10.4	58.8	39	0	154
Rod	153	10.1	59.2	40	0	163
Average	131	11.0	58.8	39	0	152