Wilbur, WA is $205 per ton versus $6.40 per bushel for soft white wheat. Therefore a 75 bushel crop of wheat is worth $480 per acre whereas 6230 lbs of triticale is worth $639 per acre. Inputs for both crops were identical. The late-planted winter triticale produced 3570 lbs/acre (Fig. 1) for a value of $366 per acre. Recrop soft white spring wheat produced 46 bushels/acre.

In early September 2011 we again had adequate seed-zone moisture in no-till fallow, so winter triticale was once more planted both early and late. Winter triticale can be grown in the same manner and with the same inputs and equipment used for winter wheat. For example, in-crop grass weed herbicides such as Maverick™ and Olympus™ can be used on triticale. Winter triticale grows taller and produces more residue than wheat (Fig. 2), thus it is a good choice for soils prone to wind erosion. If the price for feed grain remains high, we recommend that growers consider planting winter triticale on some of their acreage.

Fig. 2. Early-planted (right side) and late-planted (left side) winter triticale in 2011 near Ritzville, WA.

Critical Water Potentials for Germination of Wheat

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Low soil water potential limits or prevents germination and emergence of rainfed winter wheat. This phenomenon is particularly pronounced in the winter wheat-summer fallow region of the Inland Pacific Northwest where wheat is routinely sown deep to reach moisture with 4 to 6 inches of soil covering the seed. Wide differences in seedling emergence among winter wheat varieties have been reported, but no previous experiments have examined germination differences among varieties as a function of water potential.

The objective of our laboratory study was to quantify seed germination of five commonly-sown winter wheat varieties (Moro, Xerpha, Eltan, Buchanan, and Finley) at seven water potentials ranging from 0 to −1.5 MPa. Germination was measured as a function of time for a period of 30 days. At higher water potentials (0 to −0.5 MPa), all varieties had germination of more than 90%. At the lowest water potentials (−1.0 to −1.25 MPa), however, Moro consistently exceeded the other entries for speed and extent of germination with total germination of 74% at -1.0 MPa and 43% at -1.25 MPa. Since its release in 1966, Moro is sown by growers when seed-zone water conditions are marginal. Scientists have long known that coleoptile length is an important factor controlling winter wheat seedling emergence from deep sowing depths. In addition to having a long coleoptile, our data suggest that Moro's known excellent emergence ability to germinate from deep sowing depths in dry soils may also be attributed to the ability to germinate at lower water potentials than other varieties.

Evaluation of New Deep-Furrow Drill Prototypes for Conservation Wheat-Fallow Farming

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We have completed the first year of a 3-year field experiment to evaluate the performance of several deep-furrow drill prototypes to determine their suitability for planting winter wheat into tilled summer fallow under high surface residue conditions. Six deep-furrow drill prototype configurations (four from WSU Lind, one from the McGregor Co., and one from Blake Strohmaier) were evaluated on Sept. 1, 2011 at the Ross Heimbigner farm near Ritzville, WA. The stubble from the 2010 winter wheat crop, ranging from 14 to 19 inches in height, was left standing and undisturbed over the winter and averaged 5400 lbs/acre. After a spring glyphosate herbicide application, we conducted primary spring tillage at a depth of five and a half inches on May 14 with a Haybuster Undercutter sweep with 60 lb N and 10 lb S per acre injected with the undercutter implement. Only one rodweeding was required to control weeds during the summer. Seed-zone moisture conditions at time of planting were excellent. The experiment was set up in a randomized complete block design with four replications of each of the six drill treatments. All the drill prototypes planted Bruehl club wheat in 300-ft-long strips.