Marketing Opportunities for Dryland Organic Crops

Julia Piaskowski and Lynne Carpenter-Boggs; Dept. of Crop and Soil Sciences, WSU

One of the many challenges to organic dryland farming is finding buyers for the crops produced, typically dry grains, feed and forages. Unlike the conventional export market, there is neither a well-established organic market, nor infrastructure for the transport and storage of organic grains and feed. One alternative, direct marketing to consumers, is challenging and time-consuming. Some growers have formed cooperatives to use their collective political and selling power to win contracts and build an alternative market for their products. However, there is not always an appropriate cooperative to meet the needs of particular growers, and building a cooperative is a tremendous task.

Despite these challenges, there is currently a demand for Pacific Northwest-grown organic grains and feed. Several companies are actively seeking producers of organic grains and feed in the Pacific Northwest. A list of 10 businesses, their crop needs and contact information can be found at http://csanr.wsu.edu/pages/GrainBuyers& Sellers. These buyers are interested in purchasing wheat, barley, feed grains, hay, legumes, and other grains such as oats and triticale. At this time, the demand for local organic grain products is outstripping supply, resulting in the purchase of grain from other regions of the U.S., North America and overseas.

Additional work is needed to develop regional organic grain and feed markets to ease the costs and knowledge gap of transitioning to certified organic. In 2011, approximately 10,991 acreages in Washington were certified organic for grain, oilseeds and beans, and another 26,823 were certified organic for forage production, representing 42% of the total organic acreage in Washington. There is much that can be done to meet the needs of this growing grower pool, especially given how few resources are available to organic producers looking for alternatives to the export commodity markets.
Phosphorus Use Efficiency in Washington Spring Wheat

Julia Piaskowski, Dept. of Crop and Soil Sciences, WSU and Kim Garland Campbell, Wheat Genetics, Quality, Physiology and Disease Research Unit, USDA-ARS

Declining reserves, skyrocketing prices and environment pollution associated with phosphorus (P) fertilizer are spurring efforts to develop crops and cropping systems that use this resource more efficiently. Sales of fertilizer across Washington Counties indicate that phosphorus fertilizer application is prevalent across Eastern Washington. Despite that, there is a net export of P from the soil due to crop harvest.

Field trials were conducted in six environments in 2009 and 2010 to test the responsiveness of five spring wheat cultivars to P fertilizer. The trials were planted across the dryland grain production region of Eastern Washington representing conventional, organic and no-till management. Each site consisted of two fertilizer treatments, 20 lbs/acre of P fertilizer and no additional P, and five cultivars, Alpowa, Blanca Grande, Louise, Otis and Walworth, arranged in split-plot design with four replicates. Data on P uptake in the leaves and seeds over time were taken along with yield data.

A cultivar-dependent yield response to P was found in conventional and organic environments regardless of whether soil phosphorus levels tested as “sufficient” (>15 ppm, bicarbonate assay) or “insufficient” (<12 ppm). P fertilizer increased the tillering and final spike density of the wheat crop resulting in greater yield when there was sufficient rainfall to fill the grains. There was no response to P in the no-till sites. The most efficient users of P are most clearly differentiated in low P, drought-prone environments such as Lind, WA. Alpowa and Louise are efficient users of phosphorus, both yielding the highest and taking up the most P in the leaves and grain. They consistently outperformed three other spring wheat cultivars: Blanca Grande (hard white), Otis (hard white), and Walworth (hard red). Further studies are needed to determine the extent of genetic variation for P use efficiency among regionally adapted wheat cultivars.

Reducing Soil Compaction to Improve Winter Wheat Yield

Esser, A.D. 1, and J. Klein 2; 1WSU Extension, Lincoln-Adams Area, 2Wheat Producer, Ritzville

Producers in the dryland (<12 inches annual precipitation) cropping region of eastern Washington continue looking for methods to improve water infiltration, reduce restrictive soil compaction layers, maintain crop residue to prevent wind erosion and improve winter wheat grain yield. The Case IH Ecolo-till 2500 minimum-till ripper is an implement designed to minimize residue decomposition, reduce soil compaction, and increase water infiltration. The objective of this research is to determine if this implement benefits dryland winter wheat-summer fallow production. A 10-acre on-farm test was initiated in the fall of 2008 after winter wheat harvest examining two treatments: 1. Case IH Ecolo-till 2500 operation; 2. Check (no treatment). The on-farm test was repeated in 2009. The study was a RCBD with five replications each year. Data collected included soil compaction to a depth of 18 inches, soil moisture to a depth of 4-ft in 1-ft increments, grain yield, and grain quality. Overall the Case IH Ecolo-till 2500 minimum-till ripper significantly reduced soil compaction in the subsequent winter wheat plots between 7.8-14.0%. No differences in soil moisture were detected between treatments. Grain yield varied between treatment and years (P<0.04) with the Case IH Ecolo-till 2500 minimum-till ripper treatment increasing yield 3.4% in the 2008 site. No difference in grain yield was detected in 2009. Grain protein and test weight remained equal between treatments each year.


Kristy Borrelli, Richard Koenig, Ian Burke, Dennis Pittmann, and E. Patrick Fuerst; Dept. of Crop and Soil Sciences, WSU

Nine crop rotation systems were evaluated in Pullman, WA, during the transition to organic production (2003-05) to address soil fertility and weed management challenges experienced by dryland organic cereal growers in Eastern WA. Systems ranged from intensive small grain production to intensive legumes for forage (FOR: alfalfa + oat/pea) or green manure (GRM), and included systems with alternating small grains and legume GRM. The entire study was sown to certified organic spring wheat (SW) in 2006