Hard Red Winter Wheat – Does It Pencil?

By Mary Corp and Don Horneck, OSU Extension

Sharpen your pencil, and get the planter ready. Fall seeding is quickly approaching and there are decisions to be made. Sharpened pencils are in high demand as the strong prices for Hard Red Winter Wheat continue. Higher prices have moderated lately but some experts are predicting that acreage this fall may be as high as 400,000 acres.

	Soft White	**Hard Red Winter (90%)**
Umatilla County Avg. Yield (bu/ac)	65	58.5
Umatilla County Avg. Price ($/bu)	$3.40	$4.40
Gross Income	$221.00	$257.40
N cost @ $0.50/lb, if all purchased	$81.25 (2.5 lb N/bu)	$87.75 (3.0 lb N/bu)
Net Income	$139.75	$169.65

Marketing is # 1 consideration! There is ONE KEY consideration that should be driving all your decisions and that is marketing. Identify your market prior to making any other decision. What price? What quality characteristics will it take to get into the market at the price you want? If you want to play the market, what price movements would be expected if you have to market later in the season?

Quality will count! Silk purse out of sow's ear, unlikely! Mary's father use to say "You can't make a silk purse out of a sow's ear," and such might be the case with several varieties currently being grown. Quality red winter wheat demand is increasing. Finding seed for varieties that have higher quality will be difficult this fall with demand out stripping seed stocks. Finding seed for low quality varieties such as Residence and Boundary might be easier, thus making crop quality specification more difficult to meet. Harvest data for Umatilla County large plot variety trial bring the marketing/quality discussion to some hard numbers.

Table 1. 2006 Hard red winter variety trial, Helix, Oregon, (Newtson Farms)

	Flagleaf sample		2006 Harvest Data				
Variety	Sample Date	Total N	Yield bu/a	Protein* %	Falling Numbers*	Moisture %	Quality Ratings
Bauermeister	5/25/2006	4.20	50.5	11.6	441	8.78	Q+
Buchanan	5/25/2006	3.76	58.6	11.0	425	9.17	Q
Paladin	5/25/2006	4.62	49.6	13.0	435	8.84	Q+
Residence	5/25/2006	4.16	68.5	11.2	353	8.5	Q-
Stephens			61.3	11.2	380	8.45	Q
ORSS 1757			52.8	10.3	342	9.22	Q+

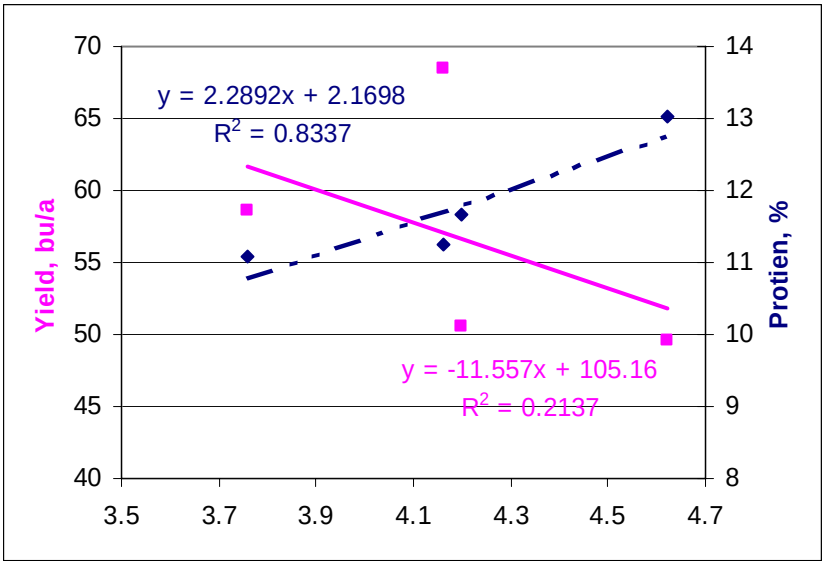
** A protein target of 11.5% to 12.5%, plus a falling number of over 400 is considered desirable.*

Table 1 shows yield, protein and falling numbers for HRW varieties planted near Helix, Oregon plus Stephen and ORSS 1757 as SWW standards. The varieties were planted side by side in a HRW field with 75 lbs of N applied at seeding. This N-rate allowed 2.9 lbs of N per bushel, accounting for soil N and anticipated N released from crop residue. The anticipated yield was 70 bushel per acre.

Residence felt just short of the target yield, yet still had protein and falling numbers that did not meet the quality thresholds. Bauermeister and Paladin did not yield as high, but they did live up to their reputation for quality numbers.

Fertility: After variety selection, the next important piece is adequate nitrogen fertilizer to make protein, (11.5% to 12.5%). A ballpark number for additional N required for HRW is to increase the per bushel N requirement by 0.4 lbs N. Maximum yield is associated with 10.5% protein in soft white wheat. Desirable protein may be 1.0 to 1.5 % higher in HRW than needed for maximum yield. For example if your normal soft white wheat program needs 2.5 lbs N/bu for 10.5% protein then 2.9 – 3.0 lbs. N/bu for 11.5% protein in HRW. Maximum yield in HRW may occur at a higher protein than SWW.

Figure 1. HRW protein relationship to Total N% of flagleaf*



** 2006 HRW variety trial data, Helix, Oregon*

For now flag leaf N appears to be an indicator of expected protein in HRW as seen in Figure 1. Additional research by variety is needed plus more information about the amount and timing of nitrogen. Research trials are planned at 3 locations (2 in Umatilla County) this fall to gather more needed information.

Another thing that is unclear, and will take time to sort out, is what is the maximum yield for HRW varieties in different climatic locations. HRW yields at the Helix variety trial were similar to SWW. Some areas can expect HRW yields to be 10% less than SWW. Tables 2 and 3 shows a comparison of common varieties by location across the PNW.

Table 2. 2006 Hard Red Winter Wheat Yield Summary

		7-14" rainfall		11-15" rainfall				16-18" rainfall		Irrigated
	Quality Rating	Connell, WA	Horse Heaven, WA	Almira, WA	Ritzville, WA	St. Andrews, WA	Helix, OR	Walla Walla, WA	Pendleton, OR	Hermiston, OR
Bauermeister	Q+	66.7	39.3	121.5	56.7	66.9	50.5	105.9	--	--
Buchanan	Q	69.3	47.4	112.4	60.5	61.0	58.6	81.5	--	--
Paladin	Q+	60.6	42.7	113.1	47.6	55.4	49.6	132.1	--	--
Residence	Q-	--	--	--	--	--	68.5	--	--	--
Boundary	Q-	72.2	51.3	133.4	62.5	69.1		137.9	90.7	101.3
Declo	Q-	--	--	--	--	--	--	--	81.7	121.1
Site Average		62.3	45.1	113.0	52.4	60.0	56.8	118.1	91.2	113.5
LSD (0.05)		5.2	4.3	12.6	7.3	12.3		13.3	11.7	10.1

Sources: Umatilla County Large Plot Variety Trials, Oregon Hard Winter Elite Trials, WSU Variety Testing Program

Table 3. 2006 Hard Red Winter Wheat Protein Summary

		7-14" rainfall		11-15" rainfall				16-18" rainfall		Irrigated
	Quality Rating	Connell, WA	Horse Heaven, WA	* Almira, WA	Ritzville, WA	St. Andrews, WA	Helix, OR	Walla Walla, WA	Pendleton, OR	Hermiston, OR
Bauermeister	Q+	11.8	13.1	10.1	11.8	9.9	11.7	13.4	--	--
Buchanan	Q	10.8	12.1	9.2	11.2	9.4	11.1	11.9	--	--
Paladin	Q+	12.2	12.7	11.5	12.9	11.5	13.0	12.7	--	--
Residence	Q-	--	--	--	--	--	11.2	--	--	--
Boundary	Q-	11.8	11.9	10.8	11.6	10.8	--	12.5	12.7	10.6
Declo	Q-	--	--	--	--	--	--	--	13.3	10.7
Site Average		11.8	12.6	10.7	12.1	10.9	12.0	12.5	12.6	10.5
LSD (0.05)		0.4	0.6	0.8	0.9	1.2	--	0.5	2.3	1.0

*Almira site 13% above average yields, fertilized for 90bu yield target
Sources: Umatilla County Large Plot Variety Trials, Oregon Hard Winter Elite Trials, WSU Variety Testing Program