

Organic Wheat Variety Evaluation, Fertile—Polk County

Cooperator: Jim and Pat Todahl
Nearest Town: Fertile
Soil Type: Flaming sandy loam
Tillage: Fall chiseled, spring cultivated
Previous Crop: Soybean
Variety: See table
Planting Date: April 30, 2004
Row Width: 8 inches
Fertilizer: 3 ton/a turkey manure, fall 2003
Weed Control: Harrowing 3 times
Herbicide: None, field is certified organic
Harvest Populations: See table
Harvest Date: September 1, 2004
Experimental Design: Randomized complete block with 4 replications

Purpose of Study:

To evaluate spring wheat varieties for yield, protein, test weight, 1,000-seed weight, plant height, disease and lodging, when grown under a certified organic production system.

Results:

Alsen was the top yielding variety out-yielding many of the other tested varieties, but did not differ significantly in yield from Reeder, Dapps, Walworth and Oklee. Disease response between varieties was significantly different. In organic production protein premiums can be a major part of the income. Glupro provided the highest protein percentage.

Variety	2004 Yield ¹ (bu/a)	Protein (%)	Test Weight (lb/bu)	1,000-Seed-weight (gram)	Plant Height (inches) 7/19/04	% Flag Leaf Diseased ² 7/19/04	Leaf Rust 7/19/04	% of Plot Lodged 8/12/04	Plant Population ³ (million/a)	2003-2004 Yield ¹ (bu/a)
Alsen	69.4	14.3	63.0	34.4	36.5	8.8	No	1.0	2.10	52.4
Reeder	67.7	13.8	61.1	34.3	36.3	8.8	No	1.0	1.72	52.6
Dapps	67.1	15.6	61.1	35.5	40.8	6.3	Trace	1.5	1.95	50.9
Walworth	64.7	13.3	59.0	28.5	37.8	20.0	Yes	12.3	2.12	54.4
Oklee	64.5	14.1	61.9	33.2	34.5	10.0	No	1.0	1.95	54.0
Stoa	64.1	13.7	60.3	33.3	41.9	9.6	No	7.5	1.72	50.6
Parshall	61.9	13.9	62.2	33.1	41.8	18.0	Trace	4.5	1.74	48.4
Hanna	61.2	13.4	61.4	34.5	39.5	10.0	No	1.3	1.90	
AC-Cadillac	60.4	14.6	61.8	35.0	41.0	8.8	No	17.5	2.03	51.7
Ingot	60.4	13.5	62.9	31.2	40.3	33.8	Yes	5.3	1.79	51.3
Waldron	51.4	14.2	58.2	33.1	42.0	31.3	Yes	23.5	1.86	41.2
BacUp	50.6	15.6	62.5	33.1	39.3	32.5	Yes	7.3	1.90	41.7
Gunner	48.8	13.9	59.7	26.7	38.3	36.3	Yes	2.0	1.85	41.6
Coteau	45.2	15.2	59.0	31.2	40.5	30.0	Trace	9.5	1.86	35.2
Glupro	43.9	16.6	58.5	33.8	45.0	26.3	Yes	19.3	1.99	37.0
Chris	43.5	13.9	58.1	26.9	41.5	20.0	Yes	27.5	1.84	36.1
RedFiffe	40.5	13.4	58.5	31.3	46.3	17.5	Yes	41.3	1.88	38.3
Acadia	39.4	12.3	54.0	28.8	43.3	70.0	Yes	12.5	1.62	37.9
LSD 0.05	5.2	0.6	2.2	2.3	2.3	9.9		16.8	0.31	

¹ Corrected to 13.5% moisture.

² Including leaf rust, septoria and tan spot.

³ Stand counts were taken after the third harrowing.

Organic Wheat Variety Evaluation, Comstock—Clay County

Cooperator: Lynn Brakke
Nearest Town: Comstock
Soil Type: Fargo Clay
Tillage: Fall chiseled, spring cultivated
Previous Crop: Soybean
Variety: See table
Planting Date: The entire plot area was under seeded with alfalfa on April 24, 2004
Wheat was seeded April 26, 2004
Row Width: 9 inches
Fertilizer: 900 lbs/a of “Cluck” 4-4-2 was applied fall 2003
Weed Control: None
Herbicide: None, field is certified organic
Populations: See table
Harvest Date: August 18, 2004
Experimental Design: Randomized complete block with 4 replications

Purpose of Study:

To evaluate spring wheat varieties for yield, protein, test weight 1,000-seed weight, plant height, alfalfa height, when grown under a certified organic production system.

Results:

The top seven varieties did not significantly differ in yield. Walworth was the top yielding variety at Fertile in 2002 and 2003 and was the third highest yielding variety at Comstock in 2002 and 2003. In organic production protein premiums can be a major part of the income. Coteau and Glupro provided the highest protein percent. We noticed a significant difference in the under seeded alfalfa plant height during the 2003 season, but no differences in 2004. No significant differences in wheat plant population or heads per acre were observed.

Variety	2004 Yield ¹ (bu/a)	Protein (%)	Test Weight (lb/bu)	1,000-Seed Weight (gram)	Plant Height (inches) 7/14/04	Alfalfa Height (inches) 7/14/04	Plant ² Population (million/a)	Wheat ³ Heads (million/a)	2003-2004 Yield ¹ (bu/a)
Walworth	45.9	11.7	61.7	32.4	35.9	13.8	0.89	1.98	52.9
Hanna	43.6	11.9	62.0	34.5	42.3	13.5	0.91	2.18	
Ingot	42.1	12.0	63.4	31.5	39.8	12.9	0.91	1.82	51.8
Reeder	40.9	12.0	62.5	34.6	34.3	14.9	0.89	1.77	46.3
Oklee	40.7	11.4	63.1	31.9	32.5	14.3	1.01	1.37	45.3
Dapps	40.3	13.1	61.4	33.9	39.3	14.3	0.95	1.59	48.9
Alsen	40.1	12.7	63.4	34.3	34.5	14.3	0.92	1.68	46.7
Chris	39.1	12.3	60.8	28.1	42.3	14.3	1.03	2.06	43.1
Waldron	39.0	12.7	60.0	32.8	42.8	13.5	0.88	1.68	43.0
Parshall	38.8	12.0	62.8	31.4	38.6	14.1	0.92	1.84	47.1
Stoa	38.4	12.1	60.6	30.2	40.9	14.5	0.83	1.83	48.9
AC-Cadillac	37.5	12.4	62.9	34.3	42.3	13.9	0.87	1.89	47.2
Gunner	36.3	11.7	62.5	28.2	37.8	13.8	0.91	2.06	45.2
RedFife	36.1	10.7	58.3	32.0	46.3	13.3	0.88	1.49	41.5
BacUp	32.6	13.8	62.8	28.8	38.3	14.1	0.96	1.67	37.3
Acadia	32.3	10.7	60.4	31.8	44.5	13.3	0.89	1.70	40.4
Glupro	28.3	14.8	59.0	32.8	48.0	13.3	0.92	1.83	33.1
Coteau	28.1	15.2	58.6	30.4	39.8	14.0	0.94	1.85	35.3
LSD 0.05	6.3	0.7	0.6	1.3	1.6	N.S.	N.S.	N.S.	

¹ Corrected to 13.5% moisture.

² Stand counts were taken on 5/26/2004.

³ Head counts were taken on 7/14/2004.