

## Organic Wheat Variety Evaluation, Fertile—Polk County

**Cooperator:** Jim and Pat Todahl  
**Nearest Town:** Fertile  
**Soil Type:** Fargo Clay  
**Tillage:** Fall chiseled, spring cultivated  
**Previous Crop:** Soybean  
**Variety:** See table  
**Planting Date:** May 1, 2003  
**Row Width:** 8 inches  
**Fertilizer:** 3 ton/a turkey manure, fall 2002  
**Weed Control:** Harrowing 3 times  
**Herbicide:** None, field is certified organic  
**Harvest Populations:** See table  
**Harvest Date:** August 13, 2003  
**Experimental Design:** Randomized complete block with 4 replications

### Purpose of Study:

To evaluate spring wheat varieties grown under a certified organic production system. Entries came originally (2001) from either an organic or conventional seed source. Seed for the 2003 season came from the 2002 organic wheat study

### Results:

Walworth was the top yielding variety at Fertile in 2003 (and 2002) significantly outyielding many of the other tested varieties, but did not differ significantly in yield from Oklee, AC-Cadillac or Ingot. In organic production protein premiums can be a major part of the income. Glupro provided the highest protein percentage. Plant population was generally low due to intensive early-season harrowing.

Variety	Yield <sup>1</sup> (bu/a)	Protein (%)	Test Weight (lb/bu)	1,000-seed Weight gram	Plant Height (inches)	Plant <sup>2</sup> Population (million/a)
Walworth	44.0	13.3	61.7	29.3	34.3	0.97
Oklee	43.4	13.4	63.9	29.0	32.8	0.86
AC-Cadillac	42.9	13.6	63.7	32.0	40.2	0.81
Ingot	42.2	13.3	64.0	29.3	36.5	0.77
Reeder	37.4	13.5	61.9	27.7	30.8	0.89
Stoa	37.1	13.6	60.9	28.2	37.2	0.71
Acadia	36.3	12.5	61.7	31.7	41.7	0.79
RedFife	36.1	12.6	60.3	32.0	47.5	0.78
Alsen	35.4	13.7	62.5	28.0	30.0	0.79
Parshall	34.8	12.9	62.5	28.2	35.8	0.77
Dapps	34.7	14.1	61.1	28.7	37.2	0.84
Gunner	34.3	13.7	63.2	25.7	34.2	0.77
BacUp	32.8	15.0	63.4	25.7	36.3	0.96
Waldron	31.0	13.9	60.0	29.3	37.8	0.75
Glupro	30.0	16.0	59.5	31.7	43.8	0.74
Chris	28.7	13.9	61.1	25.0	37.5	0.72
Coteau	25.2	15.2	58.9	23.7	37.3	0.73
LSD (0.05)	4.9	0.7	0.8	2.3	3.2	0.15

<sup>1</sup> Corrected to 13.5% moisture

<sup>2</sup> Stand counts were taken after the third harrowing initial stand (before harrowing) was on average 1.5 million plants/acre.

## 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 28, 2003  
 Wheat was seeded April 30, 2003  
**Row Width:** 9 inches  
**Fertilizer:** 900 lbs/a of “Cluck” 4-4-2 was applied fall 2002  
**Weed Control:** None  
**Herbicide:** None, field is certified organic  
**Populations:** See table  
**Harvest Date:** August 12, 2003  
**Experimental Design:** Randomized complete block with 4 replications

### Purpose of Study:

To evaluate spring wheat varieties grown under a certified organic production system. Entries came originally (2001) from either an organic (O) or conventional seed source. Seed for the 2003 season came from the 2002 organic wheat trial.

Variety	Yield <sup>1</sup> (bu/a)	Protein (%)	Test Weight (lb/bu)	1,000-seed Weight (gram)	Plant Height (inches)	Plant <sup>2</sup> Population (million/a)	Alfalfa <sup>3</sup> Height (inches)
Ingot	61.4	12.4	63.2	32.0	37.8	1.58	9.8
Stoa	59.4	12.7	60.4	31.4	41.4	1.38	12.0
Walworth	59.9	12.6	60.4	30.7	35.5	1.47	11.8
Dapps	57.5	13.1	61.1	33.7	38.5	1.35	10.8
AC-Cadillac	56.8	12.6	62.4	34.3	41.1	1.51	9.5
Parshall	55.4	12.3	63.2	32.9	38.7	1.51	11.3
Gunner	54.1	11.7	62.3	29.0	37.3	1.57	12.3
Alsen	53.3	13.4	62.9	32.3	33.8	1.58	12.8
Reeder	51.6	12.2	61.9	33.7	33.1	1.49	11.8
Oklee	49.8	12.5	62.3	32.0	31.2	1.42	11.3
Acadia	48.4	12.1	59.6	10.0	43.2	1.09	10.0
Chris	47.1	13.2	60.5	30.7	41.5	1.30	11.5
Waldron	46.9	13.4	59.6	32.0	40.2	1.35	10.3
RedFife	46.8	11.4	59.9	34.7	46.7	1.41	11.5
Coteau	42.4	14.2	59.7	30.0	39.3	1.42	11.8
BacUp	42.0	14.4	62.4	29.0	35.3	1.37	10.8
Glupro	37.8	14.9	58.8	33.3	43.8	1.36	10.5
LSD (0.05)	6.2	0.7	0.4	1.3	1.8	0.16	1.6

### Results:

The top seven varieties did not significantly differ in yield. Walworth was the top yielding variety at Fertile in 2003 (and 2002) and was the third highest yielding variety at Comstock in 2002. In organic production protein premiums can be a major part of the income. Glupro provided the highest protein percent, but not significantly different from Coteau and BacUp. We noticed a significant difference in the under seeded alfalfa plant height during the season. Wheat height and population interacted to provide differences in competitiveness between varieties.

<sup>1</sup> Corrected to 13.5% moisture.

<sup>2</sup> Stand counts were taken May 22, 2003.

<sup>3</sup> Alfalfa height was measured on June 25, 2003.