Source: 2002 On-Farm Cropping Trials Northwest and West Central Minnesota
U of MN Extension Service, published January 2003

Polk County

Organic Wheat Variety Evaluation

Cooperator: Jim and Pat Todahl
Nearest Town: Fertile
Soil Type: Flaming sandy loam
Tillage: Fall chiseled, spring cultivated
Previous Crop: Soybeans
Variety: See table
Planting Date: May 27, 2002
Row Width: 8"
Fertilizer: 3 ton/a turkey manure, fall 2001
Weed Control: Harrowing, 2 times
Herbicide: None, field is certified organic
Harvest Populations: See table
Harvest Date: August 23, 2002
Experimental Design: Randomized complete block with 4 replications

Purpose of Study

To evaluate different spring wheat varieties grown under a certified organic production system. Entries came from either an organic or a conventional seed source.

Results

Walworth significantly out-yielded many of the tested varieties, but did not differ significantly in yield from Parshall. In organic production protein premiums can be a major part of the income. Glupro provided the highest protein percent. End of the season weed pressure among the varieties differed significantly.

Variety	Yield[1] (bu/a)	Protein (%)	Test Weight (lb/bu)	Height (inches)	Population (million/a)	Lodging[2]	Weed Pressure[3]
Walworth	41.3	14.1	53.7	30.0	1.33	1.8	2.1
Parshall-O[4]	38.3	14.3	57.4	30.5	1.36	2.0	2.5
Parshall	35.5	14.5	56.2	32.1	1.34	1.6	1.9
Stoa-O	34.8	14.3	54.1	33.0	1.37	1.6	2.3
Saxon	34.3	14.2	51.9	30.6	1.33	2.0	2.3
Stoa	31.6	14.5	54.2	34.4	0.96	1.9	2.8
Alsen	31.3	15.1	55.1	28.8	1.39	1.9	2.6
Waldron	30.6	15.1	53.7	34.7	1.39	1.8	2.5
Ingot	30.6	15.1	54.6	32.9	1.43	1.4	1.9
Reeder	30.1	14.4	53.8	29.0	1.28	1.6	1.8
BacUp	25.9	15.2	55.6	28.9	1.34	4.0	3.9
Coteau	23.8	14.4	53.9	33.4	1.38	2.3	2.6
Vista	23.2	13.5	49.4	29.7	1.24	3.9	3.4
Chris	22.7	14.4	55.1	33.6	1.00	2.9	3.3
Gunner	21.8	14.8	56.2	32.0	1.49	2.5	1.9
Plata	20.7	13.4	52.8	25.4	1.46	2.9	2.3
Glupro	20.5	15.6	52.4	34.5	1.23	2.1	2.3
Red Fife	12.2	13.4	55.5	35.4	1.10	2.9	3.9
LSD (0.05)	5.6	0.8	2.4	2.2	0.16	0.7	1.0

[1] Corrected to 13.5% moisture
[2] Lodging score 1=no lodging, 5=flat on the ground
[3] Weed pressure score at the end of the season 1=no weeds, 5=very weedy
[4] O=organic seed source

Partnership: Paul Porter
Funding: Minnesota Association of Wheat Growers

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U of MN Extension Service, published January 2003

Organic Wheat Variety Evaluation

Clay County

Purpose of Study
To evaluate different spring wheat varieties grown under a certified organic production system. Entries came from either an organic or a conventional seed source.

Cooperator: Lynn Brakke
Nearest Town: Comstock
Soil Type: Borup loam
Tillage: Fall chiseled, spring cultivated
Previous Crop: Soybeans
Planting Date: May 17, 2002
Row Width: 9"
Fertilizer: 900 lbs/a of "Cluck" 4-4-2 was applied fall 2001
Weed Control: Harrowing 2.5 mph on May 22, 31, June 7, 21, 2002 and handweeding after heading
Harvest Date: August 19, 2002
Experimental Design: Randomized complete block with 4 replications

Variety[3]	Yield[1] (bu/a)	Protein (%)	Test Weight (lb/bu)	Height (inches)	Pigweeds (ft^2) (at heading)	Scab Score[2] (0-3)	Rust on Flag Leaf (%)
Parshall-O	38.0[4]	15.9	56.3	33.3	0.37	0.8	4.0
Ingot	35.3	15.4	56.1	34.2	0.44	1.0	17.5
Walworth	34.5	15.8	54.7	31.6	0.38	0.5	15.8
Stoa-O	33.0[4]	16.4	54.7	36.6	0.40	1.1	12.5
Reeder	32.7	16.2	53.6	32.0	0.51	1.1	6.5
Parshall	32.6[4]	15.9	56.0	34.2	0.40	0.3	5.0
Saxon	31.0	16.4	52.4	32.4	0.37	2.1	2.0
Waldron	29.1	16.3	54.3	38.1	0.23	2.0	13.8
Alsen	28.5	15.5	55.5	30.4	0.47	0.8	6.3
BacUp	26.2	16.1	57.0	33.6	0.37	0.6	7.5
Gunner	24.7	16.3	54.1	33.1	0.30	1.8	18.8
Vista	22.7	16.6	49.8	31.8	0.44	1.9	27.5
Chris	18.3	16.4	53.6	37.6	0.53	2.5	11.3
Coteau	17.6	15.7	52.4	36.7	0.30	1.5	13.8
Stoa	16.6[4]	16.6	50.6	35.7	0.74	1.5	11.3
Plata	15.7	16.5	51.7	26.1	0.26	1.5	10.0
Glupro	15.5	16.4	51.7	40.5	0.56	2.5	15.0
Red Fife	7.6	16.1	52.6	40.6	0.58	2.4	27.5
LSD (0.05)	**4.1**	**NS**	**3.0**	**1.2**	**0.21**	**0.8**	**7.4**

[1] Corrected to 13.5% moisture
[2] Scab score: 0=no scab, 3=severe scab
[3] O = Organic seed source
[4] Variety response may be related to seed lot (variety response may be related to seed lot)

Results
Parshall (organic seed source) significantly out-yielded many of the tested varieties, but did not significantly differ in yield from Ingot and Walworth. In this trial no differences in protein levels were observed. Chris and Glupro had the highest scab ratings. Vista and Red Fife were the most susceptible to the prevailing rust races in Comstock. Stoa had the most pigweeds per ft^2.

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