

“Economics of Spring Wheat vs. Barley” Project

Purpose:

In 2006, the Georgian Region Soil & Crop Improvement Association initiated a 3 year project to evaluate the yield, quality and returns from spring wheat and barley. A second objective was to evaluate seeding rates for spring wheat.

Methods:

In 2007 5 sites conducted a spring wheat and barley comparison and another 7 sites conducted seeding rate trial with spring wheat. Nitrogen rate at most plots was applied at 80 lb/ac actual to spring wheat and 40–50 lb/ac to barley. A foliar fungicide was applied to plots if required where it was practical. Each site included 2 replications. Final plant population, yield, moisture, test weight information was collected. The spring wheat seeding rates compared were 1.2, 1.6, & 2.0 million seeds/ac. These sites were seeded using the Middlesex Soil & Crop no-till drill. The current recommended spring wheat seeding rate is 1.4 – 1.6 m seeds/ac.

Results:

The spring of 2007 was warm and dry, allowing growers to plant the majority (65%) of spring cereal crop before the last week in April. This is important for spring wheat, which has significantly better yield potential when seeded very early. The plots were all planted during the last 2 weeks in April into excellent soil conditions. Provincially, barley and oat yields were 4% below average at 1.13 t/ac, while spring wheat was 7% above average at 51 bu/ac. This reflects the higher percentage of the spring wheat crop in eastern Ontario.

The average spring wheat plot yield across all locations was 49 bu./ac and 76 bu./ac for barley. Cash income was calculated using a crop price of \$250/t for spring wheat and \$130/t for barley. Costs were based on 2007 OMAFRA crop budgets, excluding land costs and costs for bailing straw. The returns for straw are not included since no straw yields were collected, even though this is an important component in determining overall profitability.

Year 2 Preliminary Results.

Quality of the spring wheat was good at all locations and all samples achieved the maximum protein premium. Dry weather took its toll on yields. Sites with barley – wheat comparison are presented in Table 1. The average return over costs was \$66/acre for spring wheat and \$13/acre for barley excluding straw income. The highest return was \$91 /ac from spring wheat. Spring Wheat produced higher returns than barley at 4 out of the 5 sites. In 2006, wheat produced higher returns at 6 out of 10 sites.

Table 1 - Comparison of Yield & Economics Of Spring Wheat Vs Barley

Location	Wheat Yield	Barley Yield	Wheat Income	Wheat Return	Barley Income	Barley Return
	bu/ac	bu/ac	\$/ac	\$/ac	\$/ac	\$/ac
Fergus	46.7	66.4	\$318	\$91	\$188	-\$15
Arthur	40.0	105.0	272	\$47	297	\$88
Durham	45.0	68.0	306	\$80	193	-\$10
Stayner	41.0	77.0	279	\$53	218	\$14
Durham	42.0	68.0	286	\$60	193	-\$10
2007 Average	42.9	76.9	\$292	\$66	\$218	\$13
2006 Average	49	76	\$240	\$18	\$198	\$(-2.0)

Note: Input costs for Barley = \$191 + trucking, Wheat = \$219 + trucking.

Spring Wheat Seeding Rate Comparison

The current OMAFRA recommended seeding rate for spring wheat is 1.4 – 1.6 million seeds/ac. This trial evaluated 3 seeding rates, 1.2, 1.6, and 2.0 m seeds/ac (Table 2). Results indicated no benefit to increasing seeding rates above 1.6 m seeds/ac. In 2006 there was a trend to higher yield with the 1.6 and 2.0 seeding rate (Table 3). In previously conducted trials with earlier planting dates, we have not seen a yield increase with higher seeding rates.

Table 2 - 2007 Spring Wheat Seeding Rate Trial Yields

Location	Seeding Rate in million seeds/acre		
	1.2	1.6	2.0
	Yield bu/ac		
Durham	41	42	42
Arthur 1	39	42	38
Arthur 2	80	81	82
Grand Valley	63	66	66
Drayton	45	50	52
Mount Forrest	98	99	87
Fergus	44	47	49
Listowel	43	43	44
Average yield (bu/ac)	57	59	58

Table 3 – 2006 Comparison of Spring Wheat Seeding Rates

Location	Seeding rate million seeds/ac		
	1.2	1.6	2.0
	Yield bu/ac		
Arthur 1	72	73	73
Arthur 2	51	51	51
Grand Valley	57	59	63
Grand Valley 2	35	38	38
Listowel	48	49	53
Elmira	46	52	52
Arthur 3	48	48	51
Arthur 4	64	66	68
Average bu/ac	53	55	56

Summary:

Preliminary results from this study indicate:

- The return from wheat exceeded that from barley at 10 out of 15 sites over the two years of the project. Spring wheat returned on average \$ 34/acre vs \$ 3.00/acre for than barley averaged over all sites excluding straw income.
- The presently recommended seeding rates for spring wheat of 1.4 – 1.6 m seeds/ac are adequate for optimum yield.

Next Steps:

The project is to be continued for 1 more year.

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