

Economics of Spring Wheat vs. Barley Project (Georgian SCIA Regional Partner Grant Project)

Purpose:

In 2006, the Georgian Region Soil & Crop Improvement Association initiated a three 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 2008, six sites conducted spring wheat and barley comparison and another 10 sites conducted seeding rate trial with spring wheat. A foliar fungicide was applied to plots if required where it was practical. Each site included two 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:

April was warm and dry, allowing growers to plant the majority of spring cereal crop before the last week in April. The plots were all planted during the last two weeks in April into excellent soil conditions. Frequent showers and high humidity during anthesis was of considerable concern for Fusarium. Quality of spring wheat was acceptable with little downgrading due to Fusarium. The average spring wheat plot yield across all locations was 55 bu./ac and 82 bu./ac for barley (Table 1). Cash income was calculated using a crop price of \$300/t for spring wheat and \$210/t for barley. Returns from spring wheat were higher than barley at four of five locations. Production costs were based on 2008 OMAFRA crop budgets, excluding land costs and costs for baling 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. Returns will vary significantly depending on production costs and marketing opportunities.

Table 1 - 2008 Yield & Economics of Spring Wheat & Barley

Location	Wheat Yield bu./ac	Barley Yield bu./ac	Wheat Income \$/ac	Wheat Return ¹ \$/ac	Barley Income \$/ac	Barley Return ¹ \$/ac
Arthur	40	75	326	56	343	109
Grand Valley	43	65	351	81	298	64
Drayton	70	114	569	299	522	288
Parker	72	87	587	317	396	162
Listowel	49	72	400	130	327	93
Average	55	82	\$447	\$ 177	\$ 377	\$ 143

¹ Return excludes land cost. Production cost for wheat - \$270/ac, and barley - \$234/ac

Three Year Summary:

Over the three years of the trial yields of spring wheat yield varied between 37-71 bu/ac, and barley 62-114 bu/ac in barley-wheat comparison plots. Excluding income from straw, spring wheat returns averaged \$94/ac (range \$0-\$317/ac) vs. barley average

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return of \$68 /acre (range (\$-37) to \$288/ac). Returns from wheat exceeded barley at 70% of the sites.

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 three 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 previously conducted trials with earlier planting dates, we have not seen a yield increase with higher seeding rates.

Table 2: 2008 Spring Wheat Seeding Rate Trial

Location	Yield (bu/ac)		
	Seeding Rate in Million Seeds/ac		
	1.2 m/ac	1.6 m/ac	2.0 m/ac
Fergus	45	44	41
Arthur 1	84	87	81
Arthur 2	40	41	41
Arthur 3	37	40	40
Kenilworth	55	56	54
Drayton	71	70	70
Grand Valley 2	44	43	42
Grand Valley	89	99	98
Moorefield	53	50	53
AYTON	51	54	55
2008 Average	57	58	57
2007 Average	57	59	58
2006 Average	53	55	56
3 Year Average	56	57	57

Summary:

Results from this study indicate:

- The return from wheat exceeded that from barley 70% of the time (excluding straw revenue). Spring wheat returned on average \$94/acre vs. \$68.00/acre for barley averaged over all sites excluding straw income.
- The presently recommended seeding rates for spring wheat 1.4-1.6 m seeds/ac is adequate for optimum yield.

Next Steps:

The project is now complete.

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