PROJECT TITLE: The evaluation of plant introduction (PI) accessions of winter spelt from the world collection of germplasm center, Aberdeen, ID.

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PROJECT LOCATION: Southern Ag. Research Center
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OBJECTIVES: To evaluate winter spelt (PI) accessions from the world collection for comparison to the Montana common spelt which is grown in limited acreage throughout Montana.

RESULTS: The study was initiated in the fall with 300 of the over 1200 winter spelt (PI) accessions available from the Aberdeen germplasm center. The 300 (PI) spelt accessions which were planted in non-replicated single rows in the fall of 1990 were evaluated for straw strength, head characteristics, maturity rating, and the yield of single rows. Based on yield primarily, 100 (PI) accessions were selected for evaluation as a 4 row plot which was replicated 3 times. In 1992, data was taken on plant height, maturity, lodging, leaf type, straw strength, test weight, percent protein, and yield. Table 1 describes the 1992 observation data obtained from the 100 selected (PI) accessions. The agronomic characteristics of Montana common has been included at the bottom of the table for comparison.

SUMMARY: The agronomic characteristics of Montana common spelt are above the average when compared to the agronomic characteristic ranges of the 100 (PI) winter spelt accessions. There were PI accessions however, which had higher yields, and test weights compared to Montana common.

It is our objective to evaluate the world collection germplasm accessions as compared to Montana common selections now grown in Montana, for use as grain, and forage for livestock and for human food uses.

FUTURE PLANS: The data suggest that winter spelt accessions exist in the world germplasm collection, which have the potential to out yield and have higher quality than the Montana common presently being grown by farmers/ranchers. Our studies will continue to evaluate selected (PI) accessions for release as cultivars for Montana producers.

Table 1. Agronomic characteristics of one hundred winter spelt (PI) accessions. SARC, Huntley, 1992.

PI accessions Plant Characteristics	Observed range among accessions
Plant Height	42.3 to 53.3 inches
Heading Date	156 to 166 days from Jan. 1
Lodging Index	0 to 75.5 percent
Leaf Area	23.3 to 47.1 sq. centimeters
Test Weight	27.4 to 35.9 lbs/bu
Yield	2110 to 6312 lbs/ac
Grain Protein	15.9 to 19.3
Montana Common Characteristics	
Plant Height	46 inches
Lodging Index	10.2 percent
Test Weight	33.47 lb/bu
Maturity	164 days from Jan. 1
Yield	5035 lbs/ac
Grain Protein	17.3 percent