L50 has shown excellent combining ability for root yield with a good sugar content.

REGISTRATION OF 10 HIGH PROTEIN WHEAT GERMPLASM LINES
(Reg. Nos. GP 166 to GP 175)

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Nine high protein spring wheats (Triticum aestivum L. em Thell.) from eight foreign countries were crossed with each other or with three U.S. wheats in 1967 to provide nine crosses (1, 2). Two F₁ lines with the highest grain protein percentages from each of the nine crosses were then intercrossed in 1970 in all possible combinations to provide segregating material for a second cycle of testing. F₂ lines from this second cycle were tested for grain protein percentage and grain protein yield in 1973.

Field and laboratory tests were used to eliminate all but 40 lines on the basis of grain protein yield and 16 lines on the basis of protein yield. Five lines with the highest grain protein percentage and five lines with the highest grain protein percentage group were chosen for registration.

Agronomic, protein, and other quality data was used to select the 10 lines with best protein performance. Five lines with the highest grain protein percentage group were chosen for registration.

Protein and grain yield data from the 1980 experiments were used to select the 10 lines with best protein performance. Five lines with the highest grain protein and five lines with the highest grain protein percentage group were chosen for registration.

Agronomic, protein, and other quality data was used to select the 10 lines and parents (Table 1). Grain protein percentage group was chosen for registration.

These 10 lines are tall, have weak straw, and have not been selected for uniformity. However, they represent an improvement over the parents in most aspects evaluated. The protein lines exceeded average values for both groups of lines in all quality comparisons.

Seed (10 g) of each line may be obtained from the Plant and Soil Science Dep., Montana State Univ., Bozeman, MT 59717.

REFERENCES