FRONDOSA and Frontiera, two varieties of wheat introduced from Brazil, have been widely used in soft red winter wheat breeding programs as sources of leaf rust resistance. Many high-yielding, good agronomic strains have been selected from this material. However, these selections are higher in protein and harder in texture than typical soft wheat. These selections are the dominant varieties of the southeast United States despite objection to these features. Some of the released varieties are Coastal, Atlas 66, Atlas 50, Anderson, Taylor, Taylor 49, Tayland, and Coker 47-27.

Middleton et al. (5) in a study on protein content of 13 soft red winter wheat varieties found large varietal differences in the percent protein from a series of tests over a 3-year period. In this study, varieties having Frondosa or Frontiera in their parentage were significantly higher in both yield and protein than the standard varieties. Reitz (6) postulated that it might be possible to obtain high yielding varieties of soft red winter wheat containing sufficient quality and quantity of protein for use in bread flour production. Some of the above-mentioned varieties already are used in blends of soft and hard wheat combinations for use in bread making.

This study was undertaken to obtain information on the inheritance of this protein source, as well as information about yield and kernel texture. Estimates of the amount of heritable variation relative to the total variation for all