Livestock production in most areas of East Texas has increased greatly during recent years. This expansion has intensified the need for more winter grazing, most of which is provided by small grains. More information on the effect of fertilization on yield and quality of forage from small grains is of paramount importance in the development of better systems of farming in this area.

In the work reported here, fertilizer experiments with wheat were started in the fall of 1948 on areas of Norwood silt loam, a Brazos River bottom soil, and of Lufkin fine sandy loam, an upland soil located near College Station, Tex. The objectives were to study the differential responses in yield and quality of forage grown on these two quite different soils with varied amounts of N, P₂O₅, and K₂O.

EXPERIMENTAL PROCEDURES

Austin, a soft red winter wheat, was used in each field test. Seeding was done with a tractor mounted grain drill. A two-row, tractor mounted, multiple fertilizer distributor, modified for small grain, placed the fertilizer between the grain rows at the time of seeding. The harvested area consisted of four rows 9.50 feet long, giving a total area of 2.33 feet by 9.50 feet.

Ammonium nitrate, 20% superphosphate, and 60% muriate of potash were used as the sources of N, P₂O₅, and K₂O, respectively. Treatments on the upland area included rates of 0, 30, 60, and 90 pounds of N and 0, 30, and 60 pounds of P₂O₅ and of K₂O per acre. Treatments on the bottomland area included rates of 0, 30, 60, and 90 pounds of N and P₂O₅, and 0 and 60 pounds of K₂O per acre. Treatments were used alone and in all possible combinations to give a complete factorial design in triplicate. Part of the N (15 pounds per acre) and all the P₂O₅ and K₂O were applied at seeding. The remaining N was applied as topdressing on February 5, 1949.