

The relationship between soil test values for nitrogen on Melfort silty clay and the yields of barley and rapeseed grown on second crop after fallow: W. F. Nuttall, Melfort

Nitrogen as ammonium nitrate was applied in the fall of 1966 and 1967 at rates of 0, 40, 80 and 120 lbs per acre. Soil samples from 52 plots were taken in the spring of each year to a depth of 4 feet. The experimental design was a 4 x 3 factorial with rates of 19.2, 38.4 and 57.6 lbs of P₂O₅ per acre applied with the seed in the spring. A check plot was included to give (4 x 3 + 1 = 13) 13 treatments with 4 replicates. The plots were split to provide a comparison between spring and fall application of nitrogen. Exchangeable ammonium nitrogen measured to a depth of two feet was highly related to yield of Arlo rape in 1967. All other soil test values of nitrogen (NH_4^+ , NO_3^- and $\text{NH}_4^+ + \text{NO}_3^-$) measured to 2 and 4 foot depths in most cases did not give as good a relationship. The relationship of soil test values for nitrogen and yield of Conquest barley in 1968 is under investigation.