The relationship between soil test values measured on several soil types in northeastern Saskatchewan and yields of barley grown on second or third crop after fallow: W. F. Nuttall, Helfort

Optimum yield response of Conquest barley from current soil test recommendations for nitrogen and phosphorus fertilizers has only been obtained in a very few cases on the test plots under the direction of the Helfort Research Station. Nitrogen and phosphorus applied at recommended rates based on soil test values have given in practically every case a good financial return over the cost of fertilizers. Different soil test values for nitrogen were evaluated and exchangeable ammonium was the only availability index which reduced the among site variation. This result would corroborate the conclusion in the previous paper that exchangeable ammonium would be the preferable soil test value for nitrogen on these sites. Nitrogen and phosphorus fertilizers were both significant in increasing yields of grain across all sites. Only nitrogen was significant for increasing the yield of barley straw.

Other factors affecting yields will have to be determined to reduce the among site variation before a more satisfactory relationship between soil test values and yields are obtained.