

Changes in Nitrate Nitrogen Levels in Saskatchewan Soils,  
September 1 to October 27, 1967.\* - J. G. Braidek,  
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Procedure:

Three depth (0-6", 6-12", 12-24") soil samples were taken from 4' x 8' plots at 17 locations on stubble and fallow fields at weekly intervals during the period September 1 to October 27, 1967. The samples were analyzed for nitrate nitrogen.

Findings:

The nitrate-nitrogen readings at individual points varied widely. The total range was 0 to 91 lbs. in one week and 6 to 130 lbs. over the nine-week sample period.

The variation in nitrate-nitrogen level was smallest at sites which had a generally low level of that nutrient. The greatest variation, in the four sites with very low nitrogen levels, was 9-24 lbs. during the sampling period.

Variation tended to be more pronounced on soils which had a generally high nitrogen level and/or had a higher conductivity.

Samples collected in September exhibited the same tendency to variation and generally the same level of  $\text{NO}_3\text{-N}$  as those collected in October.

The average increase for 16 stubble sites was 5 lbs. during the first week. The average varied below and above this figure for the duration of the test. The lowest average reading was 37 and the highest was 49 lbs. of  $\text{NO}_3\text{-N}$ .

On summerfallow the average for nitrogen at all sites ranged between 71 and 82 lbs. of nitrate-nitrogen/acre.

Observations:

Under Saskatchewan conditions sampling of fields low in nitrogen during September 1967 gave readings which would be reliable enough for soil test recommendations on nitrogen.

In view of the wide fluctuations in readings in 1967, further investigation of sampling procedure appears warranted. This should be extended to a comparison between the approach used in this study and sampling of a field in the normal manner at intervals during September and October.

\* Joint study: Soil Science Dept., University of Saskatchewan and Saskatchewan Wheat Pool.