T. L. Lyon

Does stirring soil, as is done in the intertillage of corn, increase the formation of nitrates? Inasmuch as the land has already been plowed either in the spring or previous autumn there has been an opportunity for aeration, consequently it becomes a question whether the subsequent settling of the soil interferes with the nitrifying process. If intertillage does promote the formation of nitrates, it is presumably because of the aeration it affords. The published evidence that has been accumulated seems to indicate that stirring the soil during the growing season does not increase the formation of nitrates.

This conclusion has been arrived at by direct evidence and possibly by indirection. Evidence of the former character was furnished by Call and Sewell (1) and (2) and was based on experiments in which certain field plats, kept bare of vegetation, were stirred with a corn cultivator at intervals throughout the growing season; while similar plats were scraped with a hoe to keep down weeds. These plats were sampled from time to time and determinations of nitrates were made. Such evidence should be conclusive for the soil and climatic conditions under which the experiments were performed.

What may mistakenly be considered evidence is derived from field experiments in which plats planted to Indian corn were subjected to treatments similar to those described above. No determinations of nitrates were made but the yields of corn were measured and, in the main, the two treatments produced about the same yields.

1 Contribution from Department of Agronomy, College of Agriculture, Cornell University, Ithaca, New York. Received for publication September 12, 1921
2 Professor of Soil Technology.
3 Reference by number is to "Literature cited", p. 108.