NOTE

SOME OBSERVATIONS ON THE USE OF ANIMAL MANURE AND CROP RESIDUES

In the conduct of field experiments on soil fertility at the central farm of the Kentucky Experiment Station at Lexington, it has been found that crop residues depress the yield of corn in rotation in which corn immediately follows the application of residues and fail to increase other crops in the rotation, while animal manure used in rotation increases the yield of corn and of other crops in the rotation. It was found further that a comparatively small amount of nitrate of soda is as effective in increasing crop yields under certain conditions as heavy applications of animal manure. Following are some data bearing upon these points.

Beginning in 1911, a series of field experiments was instituted in which various liming and fertilizer treatments are being tested. The rotation is corn (rye cover crop), soybeans, wheat, and clover and occupies four series of plats. The land was broken in 1899 out of bluegrass of several years' standing and was used for general cropping until 1911 without any return of manure, so far as any records show.

During the first round of the rotation no provision was made for the return of organic matter, all crops being removed except the second crop of clover. Beginning with the second round of the rotation, the corn stalks were left on the ground and the soybean straw and wheat straw were returned to the clover sod to be broken for corn, with the exception of plats 5 and 10. The second crop of clover was left on all plats. Plat 5 was treated with acid phosphate and potash and will be compared with plat 4 similarly treated with acid phosphate and potash and receiving crop residues. Plat 10 has had no fertilizer or crop residue treatment and will be compared with plat 13 receiving crop residues as indicated above. The average annual return of soybean straw was approximately 2,400 pounds per acre and of wheat straw approximately 2,600 pounds per acre.

The details of these experiments will be found in Bulletin No. 272 of the Kentucky Experiment Station.