The influence that long-continued cropping and fertilization may have on the physical and chemical composition of a soil may be of profound importance in the management of the soil. This study was prompted by numerous requests of growers for information in regard to the influence of past soil management upon their soils. Many growers reported that their soils did not drain as well after heavy rains as they had formerly. They further indicated that a longer lapse of time was required after rainfall before the land could be plowed. For the most part this interest has been manifested where the heavier types of Coastal Plain soils were concerned. The growers farming loams or the heavy sub-soil phases of the sandy loams have especially noted this difference.

It should be recalled that the trucking area around Norfolk has been farmed for more than two hundred years and trucked for nearly one hundred years. During this latter period large quantities of commercial fertilizer have been used. For example, the following practice is not unusual. A crop of spinach will receive 1000 pounds of 6-6-5 (N-P-K) fertilizer per acre before planting and be topdressed with as much as 600 pounds of nitrate of soda. Sometimes two crops of spinach and a crop of beans will be grown upon one piece of land within a single year. The beans will probably receive no phosphorus and potash but will receive 200 pounds of nitrate of soda.

In order to study the influence of such a cropping practice upon the soil a number of fields were selected that had virgin land adjoining them. These fields were carefully selected for uniformity in type of soil and sampled to the 40-inch depth, taking each horizon of soil separately. A number of profiles were taken and subjected to analyses but for lack of space only four representative profiles will be given here. Two of the profiles are from the Sassafras series and the others from the Bladen. The cultivated soils have been trucked for many years, one grower reporting a known history for over eighty years. Both virgin soils supported practically the same type of native forest although the Bladen had a tendency toward pine while the Sassafras had a tendency toward pine. The Bladen soil used was of the better drained type of that series.

The authors have noticed that the crops on the Bladen soil have failed for the past few years, apparently due to lack of internal drainage. The grower takes the best care of his soil and repeatedly turns under cover crops. This will be shown in the analysis that follows. He has been at a loss to explain the failure of his crops. The Sassafras soil has not yet actually shown a great decrease in yielding capacity due to lack of drainage but the grower reports an apparent change in drainage and in friability.

The authors noted that the virgin soil offered no resistance to sampling. That is, the auger penetrated the soil with ease while great difficulty was experienced in getting the auger to penetrate the field soil. This was particularly true for the Bladen soil.

The data shown in Table 1 show the effect of cultivation on the movement of silt and clay in the soil. The clay content of the Ap horizon in the field soil had been reduced 3.2 per cent and the silt 4.7 per cent. This accounted for the movement of 64,000 pounds of clay and 94,000 pounds of silt per acre. The A$_2$ or 7-21 inch horizon had caught this material.

The Sassafras series had been influenced to a slightly lesser extent and silt and clay were stopped in the B horizon. This was to be expected since the Sassafras series was a lighter soil and did not offer as great resistance to movement of clay and silt through the A$_2$ horizon.

The data given in Table 2 show the influence of cropping upon the nitrogen, carbon, and phosphorus content of the soil. The organic matter content of the cropped soils had been increased over that of the virgin soil. The carbon-nitrogen ratio had decreased from 18 to 12 in the A$_1$ horizon. The phosphorus content had been increased 150 per cent.