

talaria and oats) were added to the soil in the three-year period.

In the Walkley Method, the content of organic matter was determined by multiplying the amount of organic carbon in the soil by the conventional factor of 1.724. Since the carbon/nitrogen ratio in virgin soil may differ from that in soil cultivated for five years, the loss of carbon for the five-year period may have been more than the loss of nitrogen.

These results show that, even with the best cropping systems, it was not possible to maintain the organic matter content in Norfolk loamy fine sand for the first five years after the virgin soil was put under cultivation. Corn yields increased during the five years, indicating a build up of limiting plant nutrients. With the best cropping systems, it is believed that there probably will not be an additional loss of organic matter during the next five years of cultivation. However, with continuously harvested peanuts the soil might continue to lose organic matter.

There was a correlation between the loss in moisture equivalent and the loss in organic matter for the five-year period. This could be expected, since the moisture equivalent is largely dependent on the organic matter content of a loamy fine sand. The three-year rotation given above showed the smallest loss in moisture equivalent, while continuous corn plots with a green manure crop had the next smallest loss. Continuous peanuts with lupine in winter showed the largest loss in moisture equivalent.

Since most soils in Florida are very low in clay content, the humus or decomposed organic matter constitutes the main part of the base exchange capacity of these soils (5). Therefore a 23-percent average loss of decomposed organic matter (Table 23) results in a large loss of base exchange capacity.

### NEMATODE STUDIES

Samples were collected from all plots of the rotation experiment and the nematode population was determined by the modified Baermann funnel method (2). Total nematode population, content of soil organic matter, and yield of peanuts and corn in the rotation and continuous crop experiment for 1951 are given in Table 24.

Soil in continuous peanuts has a significantly lower number of nematodes than soils in continuous corn. In the rotations, peanut plots had a lower nematode population than the corn plots. Native cover seems to depress the nematode count in the