root-knot nematode in vegetable crops and improved the growth of pineapples. Early reports of the efficacy of ethylene dibromide as a soil nematocide were published by Newhall (*16*) in 1946 and Stark and Lear (*19*) in 1947. A large volume of literature has appeared on the subject of soil fumigation for various crops, but comparatively little on cigar tobacco.

Anderson (*1*) obtained "remarkably successful control" of brown root rot by fumigation of the soil with nematocides. In 1950 (*2, 3*) he reported that fumigation with ethylene dibromide produced increases of 11 percent in yield, 11 percent in grade index, and 23 percent in crop value of Havana Seed tobacco in Connecticut. Beginning about a month after fumigation, ammonia nitrogen was higher and nitrate nitrogen lower in treated than in untreated soil. It was thought that subsequent nitrification produced an abundant supply of nitrate nitrogen during the latter part of the season which might account for some of the improvement observed. A test with dichloropropene-dichloropropane on plots where nematode infestation was low showed no differences in yield and grade between treated and untreated. Ammonia nitrogen reached higher concentrations and nitrate nitrogen lower concentrations with this fumigant than with ethylene dibromide. Ethylene dibromide gave a slight increase and dichloropropene-dichloropropane a decrease in fire-holding capacity of the leaves. These results with Havana Seed tobacco were in agreement with tests on shade-grown tobacco. Analyses showed increased bromine in samples of leaves taken from plots fumigated with ethylene dibromide.

The Georgia Coastal Plain Experiment Station (*7*) reported control of root-knot with both types of fumigant. Burn and aroma of shade tobacco were not affected.

Three preliminary papers (*12, 13, 14*) have been published, covering certain phases of the investigations reported in this bulletin.

Other references which have a bearing on the response of tobacco plants to soil fumigation have been found.

Tam (*20*) reported that 7 cc. of dichloropropene-dichloropropane per cubic foot of soil, covered with mulch paper for four days, suppressed nitrification for eight weeks.

Thomas (*21*) obtained much better growth of tobacco in sterilized sand with nitrate nitrogen than with ammonia nitrogen. Beaumont (*5*) found that tobacco plants in water culture