of delivery varied slightly with the amount of fumigant in the reservoir, but this was partially compensated for by the return trip of the applicator. The soil was smoothed and compacted with a drag, usually within a few minutes after injection of the fumigant.

Soil temperature readings at depths of 6 and 12 inches were taken for most tests. The air temperature recorded was the mean for the three days immediately preceding the time of application. Soil moisture was generally moderate, always suitable for cultivation.

Four areas were used for tests. Areas A and B were adjacent in the same shade and had a similar cropping history. Areas C and D were in separate shades. The soils were classified as follows: Area A, Orangeburg and Norfolk fine sandy loams; Area B, Orangeburg fine sandy loam; Area C, Norfolk, Ruston and Orangeburg fine sandy loams; and Area D, Marlboro and Norfolk fine sandy loams.

Conditions under which the various tests were conducted are summarized in Table 1.

Tests were conducted in duplicate on areas A and B and in triplicate on areas C and D. Area D received surface irrigation in dry weather.

The methods of production were similar to those in general use on farms in the Quincy area. The soil was disked in the fall at least a month previous to fumigation; plant residues were fairly well decayed at time of fumigation. During the latter part of January from 5 to 10 tons of stable manure was broadcast and the soil disked and listed. Two or three weeks before transplanting 1,500 pounds of a mixture of cottonseed meal, urea, steamed bone meal, sulfate of potash and dolomite, analyzing approximately 6-4-6, was applied in the drill. Within four weeks after transplanting an equal amount was applied in two side-dressings. The crop was grown, harvested, cured and sweated in the usual manner. The variety Rg (*8*), resistant to blackshank but susceptible to nematode diseases, was used in all tests.

Shortly after harvest suitable samples of the plants were pulled and examined for the three diseases under consideration: Blackshank (*Phytophthora parasitica* var. *nicotianae* Tucker); root-knot (*Meloidogyne* sp. Chitwood); and coarse root, a nematode root rot apparently closely related to brown root rot. The severity of each disease was rated in 11 categories from 0 (none) to 100 (most severe) and the average was reported as the index