

Nitrate and Yield.—Correlation was significant in two out of eight tests. Both were positive and occurred in 1947 when the levels of nitrate nitrogen were generally higher than in 1948 and 1949. With more complete sampling of the soil a favorable effect of increased nitrate supply on yield probably could have been shown for more of the tests.

MISCELLANEOUS RESULTS

Repeated Fumigation.—First-year fumigation in five tests (Tests 2, 5, 7E, 7M, 7L) averaged 11 percent increase in yield for both fumigants. Second-year fumigation in five tests (Tests 4, 6, 12E, 12M, 12L) on the same plots averaged 10 percent increase for D-D and 14 percent increase for Dowfume W-40. Third-year fumigation in a single test (Test 10) gave 17 percent increase for D-D and 29 percent for Dowfume W-40. Fourth-year fumigation in two tests (Test 9 and an alternation test in 1950 not otherwise reported) averaged 3 percent decrease in yield for D-D and 2 percent increase for Dowfume W-40; grade indexes were higher for D-D, making crop indexes for the two fumigants about equal but both lower than the checks.

With repeated fumigation, both fumigants gave a decline in grade index in relation to unfumigated checks. Dowfume W-40 gave more of a decline. Both fumigants gave a fairly consistent decline in burn in relation to checks. D-D caused a bigger decrease.

Summarizing the results of repeated fumigation, Dowfume W-40 maintained the better yield and burn and D-D maintained the better grade. No explanation can be offered for the unsatisfactory results of fourth-year fumigation.

Residual Effect.—Results of repeated fumigation were compared in two seasons with the residual effect of fumigation not repeated. In 1947 (Tests 3 and 4) repeated fumigation gave the higher yield and grade but lower burn. In 1949 (Tests 11 and 12), with three dates of application, repeated fumigation gave the higher yield but lower grade index and lower burn. Crop indexes were about the same. D-D showed somewhat more residual value in increasing yield than did Dowfume W-40.

DISCUSSION

The retarded growth and dark green color of the plants observed in several instances, notably with the February applica-