

W-40 maintained the higher yield and fire-holding capacity and D-D maintained the higher grade index. Fumigation should be limited to two, or possibly three, years in succession. Fourth-year fumigation gave unsatisfactory results, the reason for which was not determined.

**Residual Effects.**—Residual effects of fumigation not repeated were inconsistent. Results in one test were inferior and in another test about equal to those with fumigation repeated. D-D showed somewhat more residual value in increasing yield than did Dowfume W-40.

**Ammonia and Nitrate Nitrogen.**—Fumigation resulted in accumulation of ammonia in the soil. D-D had a more pronounced effect than Dowfume W-40, and late fumigation with either fumigant produced more noticeable differences than early fumigation. The amount of ammonia nitrogen was inversely correlated with fire-holding capacity and, in most tests, directly with grade index. Correlation between ammonia nitrogen and yield was variable, depending apparently on moisture conditions.

Nitrate nitrogen was generally higher during the latter part of the growing season in fumigated soil than in unfumigated soil. Correlations with yield were positive and highly significant for the 1947 season, which had favorable distribution of rainfall.

**Miscellaneous.**—No effect of soil temperature and moisture was evident within the range represented in these tests. Neither alteration nor mixture of fumigants showed any advantage over the usual procedure.

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