peared to be at least on a par with root-knot in reducing yield. No evidence that fumigation affected the incidence of blackshank was found in these tests.

The average increase in yield from all first-, second- and third-year treatments was 145 pounds per acre for D-D and 167 pounds for Dowfume W-40. The difference of 22 pounds was not statistically significant. Average grade indexes and crop indexes were about the same for both fumigants. Dowfume W-40 gave a slight but significant reduction in fire-holding capacity, as compared with unfumigated checks, and D-D gave a further slight but significant reduction as compared with Dowfume W-40.

In two years' tests D-D gave better results than Dowfume N, another fumigant of the dichloropropene-dichloropropane type. In one year's test Iscobrome D and Soilfume 60-40, fumigants of the ethylene dibromide type, gave about the same results as Dowfume W-40. Iscobrome, a methyl bromide fumigant, gave anomalous results for which no explanation can be offered.

Rate of Application.—Twenty gallons of D-D and 15 gallons of Dowfume W-40 (or equivalent using other concentrations of the active ingredient) per acre were considered normal and were used in most of the tests. These rates appeared to be about the best which could have been selected, considering yield, grade index and fire-holding capacity. D-D at twice the normal rate produced yield and fire-holding capacity lower than at the normal rate. Dowfume W-40 at twice the normal rate produced about the same yield and fire-holding capacity as at the normal rate.

Date of Fumigation.—With successively later dates of fumigation there were trends toward lower fire-holding capacity, especially with D-D, and toward lower yield and higher grade index.

Fumigation about the first of October, followed by a planting of oats, gave good results with both fumigants, especially with D-D. Fumigation during November, December and January gave slightly higher yield, grade index and fire-holding capacity with Dowfume W-40. Fumigation early in February gave slightly higher fire-holding capacity and yield with Dowfume W-40, but higher grade index with D-D.

Late application of D-D in two tests was associated with retarded growth and dark green color of the plants. Fire-holding capacity and yield were low. Grade index was normal for the season in one test and comparatively high in the other.

Repeated Fumigation.—With repeated fumigation Dowfume