

Soil Fumigation of Sugar Beets for the Control of Sugar Beet Root Maggot

VERNAL JENSEN AND C. P. PARISH¹

The application of ethelene dibromide as a side dressing on sugar beets was used primarily by us for the control of sugar beet root maggot which has been prevalent in northern Utah and parts of southern Idaho at various intervals.

In 1948 a small test was made in southern Idaho using various concentrations ranging from 20 to 80 pounds per acre. When rates of more than 40 pounds were used, injury to the beets was observed. Although the injury was not always fatal, the tonnage was reduced materially, the beets being short with sprangled roots.

In 1949 approximately 100 acres were sidedressed the latter part of June, using from 10 to 20 pounds per acre. Besides effective control of the maggots, a rather striking stimulating effect resulted. Foliage became considerably darker and more vigorous.

Following are the average results from five fields where harvest data was collected:

Check:	15.92% Sugar	13.6 Tons per Acre
Treated:	16.21% Sugar	16.4 Tons per Acre

Although part of this tonnage increase was undoubtedly due to increased stands, the stimulating effect was evident from the vigor and color of the foliage and the increased size of the beets.

Two additional tests were conducted on fields showing rather severe injury from sugar beet nematode. Rates of 20 and 40 pounds per acre were applied.

Northern Utah

Check	15.50% Sugar	9.74 Tons per Acre
40 lbs.	15.95% Sugar	12.26 Tons per Acre
20 lbs.	16.45% Sugar	14.32 Tons per Acre

Southern Idaho

Check	17.18% Sugar	16.87 Tons per Acre
40 lbs.	16.86% Sugar	17.28 Tons per Acre
20 lbs.	16.82% Sugar	21.17 Tons per Acre

A four row digger type applicator mounted on a tractor with a pressure system using eight diggers on each side of row with duck feet or knives on the back bar to seal the digger openings was used. Depth of application was 5 to 6 inches.

A forty percent ethelene dibromide was diluted with white kerosene and made up to twenty gallons of solution per acre. This insured a more uniform rate of application and also eliminated the necessity of changing fumigator settings for the various rates.

We appreciate the fact that we probably do not have sufficient replicated data or results on various soil types and fertility levels. However, the stimulating effect was so noticeable on the above tests that we thought it advisable to present this data.

¹ The Amalgamated Sugar Co.