

BOETEL, MARK A. *, ROBERT J. DREGSETH, ALLEN J. SCHROEDER, and GARY J. BREWER, Department of Entomology, North Dakota State University, Fargo, ND 58105-5346. **Impact of soil insecticide placement method on sugarbeet root maggot control.** Mark A. Boetel, Robert J. Dregseth, Allen J. Schroeder, and Gary J. Brewer.

Soil insecticides are subjected to a variety of environmental factors throughout the course of a given growing season. The influence these factors may have on an insecticide's performance will vary according to compound, application rate, and placement method. Our experiment involved an evaluation of 3 placement methods (band, modified in-furrow [MIF], and spoon) on the efficacy of registered soil insecticides for control of the sugarbeet root maggot (SBRM), *Tetanops myopaeformis* (Röder). The study was carried out during the 1999 and 2000 growing seasons in commercial sugarbeet fields in eastern North Dakota (St. Thomas and Hillsboro). With respect to root injury ratings, Temik (aldicarb) 15G applied at 2.1 lb (AI)/acre using the spoon method was superior to all other treatments at St. Thomas during 1999. Although, Temik allowed more injury when applied MIF during that year, significantly less damage was observed in this treatment than in all other non-Temik treatments. Similar results were recorded during 2000 with Temik-treated plots incurring significantly less SBRM feeding injury than all others, irrespective of application method. Spoon-applied Lorsban (chlorpyrifos)15G was significantly more effective than band-applied during both years of our experiment. A similar pattern was observed with Counter (terbufos)15G. Spoon and band-applied Counter 15G treatments were not statistically different from each other; however, both yielded significantly more sucrose per acre than MIF during 1999 and both resulted in less SBRM feeding injury than the MIF application method during the 2000 season. Also, banded and MIF treatments of Lorsban 15G, in addition to Counter 15G MIF, failed to result in significantly superior performance to the untreated check in comparing recoverable sucrose, gross beet yield, damage rating, and gross economic return during 1999. Spoon-applied soil insecticides frequently perform in a superior manner to standard banded and MIF placement methods. Continued correspondence of yield data with damage ratings may suggest producer adoption of the spoon technique for SBRM management in the Red River Valley.