

SMITH, LARRY J.¹, and ALBIN W. ANDERSON². ¹NW Expt. Stat., Univ. Minnesota, Crookston 56716 and ²Dept. Entomology, North Dakota State Univ. Fargo 58105. - Post-emergence insecticide application for sugarbeet root maggot (*Tetanops myopaeformis*) control in the Red River Valley.

The sugarbeet root maggot (SBRM) is the most significant economic insect pest on sugarbeet in northwest Minnesota and eastern North Dakota. Inadequate performance by registered at-plant insecticides, due to drought conditions in much of the region (1988-92), lead to recommendations for a post emergence application of Chlorpyrifos (4E) in combination with the at-plant insecticide in 1992. Subsequent research on rates, timing and the affect of moisture on the performance of Chlorpyrifos (4E) has supported and refined these recommendations and may result in the use of post emergence only treatments for areas of low or moderate SBRM pressure in the region. Increasing the rate of Chlorpyrifos (4E) from 1.0 to 3.0 lb a.i./acre, broadcast equivalent, increased recoverable sucrose 300-455 lb/acre in separate trials and extended the window of control. Application of the higher rate 17 days before peak adult fly activity increased recoverable sucrose 1526 lb/acre over the control, and gave control equal to the recommended at-plant application of Terbufos (15G). One inch of moisture within 24 hours of application of 1.0 lb a.i./acre Chlorpyrifos (4E) alone, or in combination with at-plant Terbufos, increased recoverable sucrose 1276 and 805 lb/acre, respectively.