

Single Factor Distribution on Beta-Sect-Increasing with RTF
Active Ingredients: Trimm Target 15 p. 10/10



WOZNIAK, CHRIS A., USDA, Agricultural Research Service, Northern Crop Science Laboratory, P.O. Box 5677, Fargo, ND 58105. - Nutrition and mediation of larval development of the sugarbeet root maggot by bacteria.

Tetanops myopaeformis Roder, the sugarbeet root maggot (SBRM), maintains an internal population of gut-associated microbes. Identification of these insect-endogenous bacteria (IEB) on selective and non-selective media from third instar larvae from four geographic locations and on root feeding sites resulted in a total of 53 species characterized. Isolation of bacteria from the sugarbeet rhizoplane in the absence of SBRM, revealed a subset of 8 species common to both SBRM and sugarbeet roots. *Stenotrophomonas maltophilia* was the only species ubiquitously encountered from all sources tested. Surface disinfestation of SBRM eggs yielded gnotobiotic larvae which were co-cultured with axenic sugarbeet cells. First instars were observed to feed on cells growing on plant culture medium (MS), but moulted to the second instar at low levels; no third instars were produced. Addition of *S. maltophilia* inoculum provided for development to the third and final instar. Three other species, *E. coli* JM109, *Serratia liquefaciens*, and *Pseudomonas syringae* pv. *aptata*, were also found capable of supplying a moulting factor which resulted in enhanced larval development. Amendment of gnotobiotic cultures with cell-free culture filtrate of *S. maltophilia* resulted in the production of third instar SBRM also, indicating the presence of a soluble factor needed for development. Consumption of sugarbeet tissues was facilitated by the presence of bacteria.

