OVIPOSITION PREFERENCE AND LARVAL HOST RANGE OF THE SUGARBEET ROOT MAGGOT

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Oviposition preference and larval survival of the sugarbeet root maggot (SBRM), *Tetanops myopaeformis* (Röder), was evaluated on three cultivated plant species and five native North American weed species during the 2010 and 2011growing seasons near St. Thomas, in northeastern North Dakota. Treatments included the following: sugarbeet, *Beta vulgaris* L.; spinach, *Spinacia oleroceae* L.; sunflower, *Helianthus annuus* L.; common lambsquarters, *Chenopodium album* L.; redroot pigweed, *Amaranthus retroflexus* L.; Palmer amaranth, *A. palmeri* S. Watts.; spear saltbush, *Atriplex patula* L.; and common ragweed, *Ambrosia artemisiifolia* L. The most preferred plant species for egg deposition by SBRM flies included Palmer amaranth, sugarbeet, spinach, common lambsquarters, spear saltbush, and redroot pigweed. Recovery of live third-instar larvae was highest on spinach, sugarbeet, and spear saltbush. Spear saltbush is considered to be native to central and northern latitudes of the continent, further indicating that this species could have served as a common or preferred SBRM host before the apparent host preference shift to sugarbeet. Lower levels of survival were observed on common lambsquarters, redroot pigweed, and Palmer amaranth. These findings suggest that the SBRM could have used some of these weed species as hosts because sugarbeet and spinach are not native to North America. Our observed SBRM survival on weed species in this study suggests that the pest made a significant preference shift to sugarbeet monocultures. Oviposition and larval survival on other plant species suggests that these plants can still serve as alternate hosts. These findings may have important SBRM management implications, especially if one of these weeds becomes resistant to herbicides commonly used sugarbeet.