

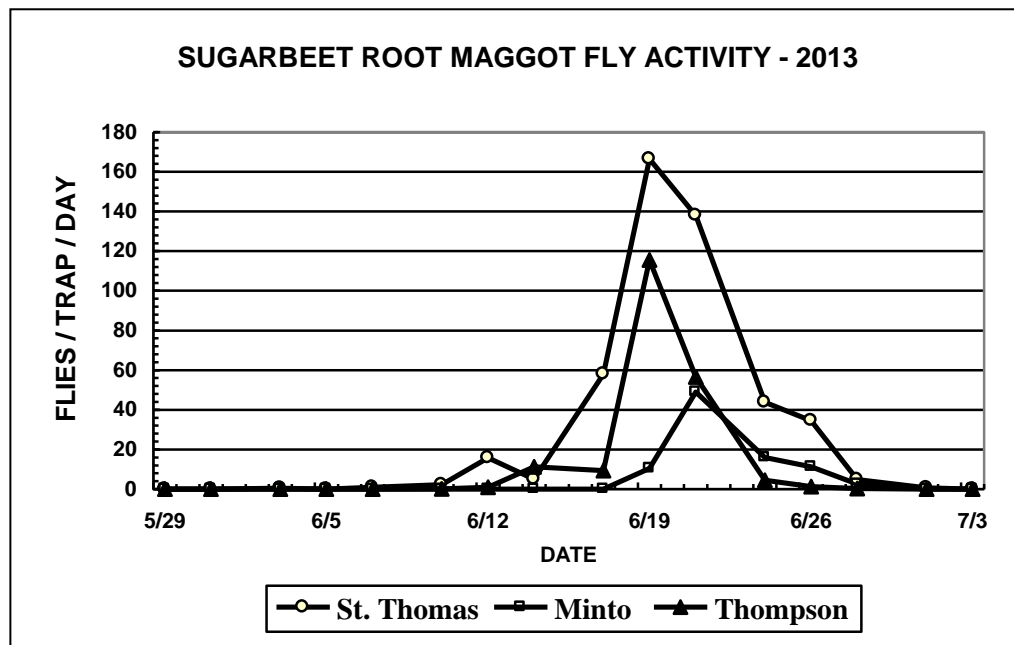
## SUGARBEET ROOT MAGGOT FLY MONITORING IN THE RED RIVER VALLEY – 2013

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Sticky-stake traps (Blickenstaff and Peckenpaugh, 1976) were used to monitor sugarbeet root maggot (SBRM), *Tetanops myopaeformis* (Röder), fly activity at 44 grower field sites throughout the Red River Valley in 2013. This was a collaborative effort between the North Dakota State University Entomology Department, Pembina County Extension, the American Crystal Sugar Company, and the Minn-Dak Farmers Cooperative. The project was jointly funded by the Sugarbeet Research & Education Board of Minnesota and North Dakota and American Crystal Sugar Company.

Root maggot fly activity typically begins in current-year beet fields in the Red River Valley around mid- to late-May and peaks near the second week of June. The first SBRM flies captured on sticky stakes in were observed on May 31; however, small numbers of flies had probably emerged three days to a week before then. Fly activity in 2013 was slightly later than average. The heaviest fly activity levels at most sites occurred between June 18 and 26. The highest levels of SBRM fly activity were observed in central and northern portions of the Red River Valley, especially in fields near Cashel, Forest River, Reynolds, St. Thomas, and Thompson, ND. Moderate levels of fly activity were observed near Grand Forks and Minto, ND, as well as near Ada and Borup, MN. Fly activity in most of the southern Valley was low. Figure 1 presents results from fly monitoring efforts at three representative sites (i.e., St. Thomas, Minto, and Thompson, ND) throughout the production area.



**Fig. 1. Sugarbeet root maggot fly activity at selected sites in the Red River Valley, 2013** (counts represent flies captured on sticky stakes on a per-trap, per-day basis).

All sites monitored for fly activity were also assessed for maggot feeding injury after the larval feeding period was completed. This is carried out on an annual basis to determine whether fly outbreaks and resulting larval infestations were managed effectively. Sampling consisted of walking across the entire field in a zig-zag pattern, and stopping at randomly chosen locations within the field to collect roots for rating. In each field, 32 roots were dug, cleaned, and rated in accordance with the 0 to 9 root injury (RI) rating scale (0 = no scarring, and 9 = over ¾ of the root surface blackened by scarring or dead beet) of Campbell et al. (2000).

The highest levels of root maggot feeding injury were observed in fields near Thompson (RI = 3.33) and St. Thomas (RI = 5.23). Other areas in which low to moderate levels of feeding injury was observed included Ada (RI = 1.3), Cashel (RI = 2.64), Euclid (RI = 1.85), Grand Forks (RI = 2.75), and Minto (RI = 1.18). Overall, the root injury ratings from many of these sites were greater in 2013 than in 2012, which suggests that growers in these areas should plan on applying some form of at-plant protection (e.g., granular or seed treatment insecticide) in 2014. Fields should also be monitored closely throughout late-May and early to mid-June of 2014 to determine whether additive postemergence insecticide treatment is needed. The overall observations of only low to moderate root maggot feeding injury throughout most of the production area, despite the occurrence of very high fly activity levels in many fields, suggests that root maggot control was effective in most of the fields that were rated. Regardless of how severe SBRM infestations were in specific fields during 2013, careful monitoring of areas where SBRM is known to cause problems will be critical in 2014 to detect unanticipated flare-ups of SBRM fly activity and to prevent economic loss.

#### **References Cited:**

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