

SUGARBEET ROOT MAGGOT FLY MONITORING IN THE RED RIVER VALLEY – 2015

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Sugarbeet root maggot (SBRM), *Tetanops myopaeformis* (Röder), fly activity was monitored at 45 grower field sites throughout the Red River Valley during the 2015 growing season. This was a collaborative effort between the Entomology Department at North Dakota State University and the Minn-Dak Farmers Cooperative. The project was jointly funded by the Sugarbeet Research & Education Board of Minnesota and North Dakota and the American Crystal Sugar Company.

The highest levels of SBRM fly activity were observed near the communities of Auburn, Grafton, Grand Forks, Reynolds, St. Thomas, and Thompson, ND, as well as Ada, MN. Moderately high levels of activity were recorded near Oakwood, Cavalier, Crystal, and Forest River, ND, and also near Euclid, MN. Fly activity in most of the southern portion of the Valley remained at relatively low or undetectable levels throughout the growing season.

Figure 1 presents SBRM fly monitoring results from three representative sites (i.e., St. Thomas and Grand Forks, ND, and Ada, MN). Root maggot fly activity in 2015 got off to a fairly average start, with the first flies being captured on sticky stakes on May 27. Significant increases in fly activity occurred during the second week of June, with main peaks in activity occurring on June 10 in the central Valley and June 12 in northern parts of the growing area.

Exceptionally high levels of fly activity persisted for about three weeks during the 2015 growing season, with activity in most fields subsiding to low levels by the end of June. Although the long duration of fly activity observed in 2015 is somewhat unusual, a review of the past 15 years of trapping data suggests that a trend toward longer periods of fly activity in recent years appears to have developed beginning in 2007. If this trend continues, it could pose significant challenges for growers to successfully manage this pest.

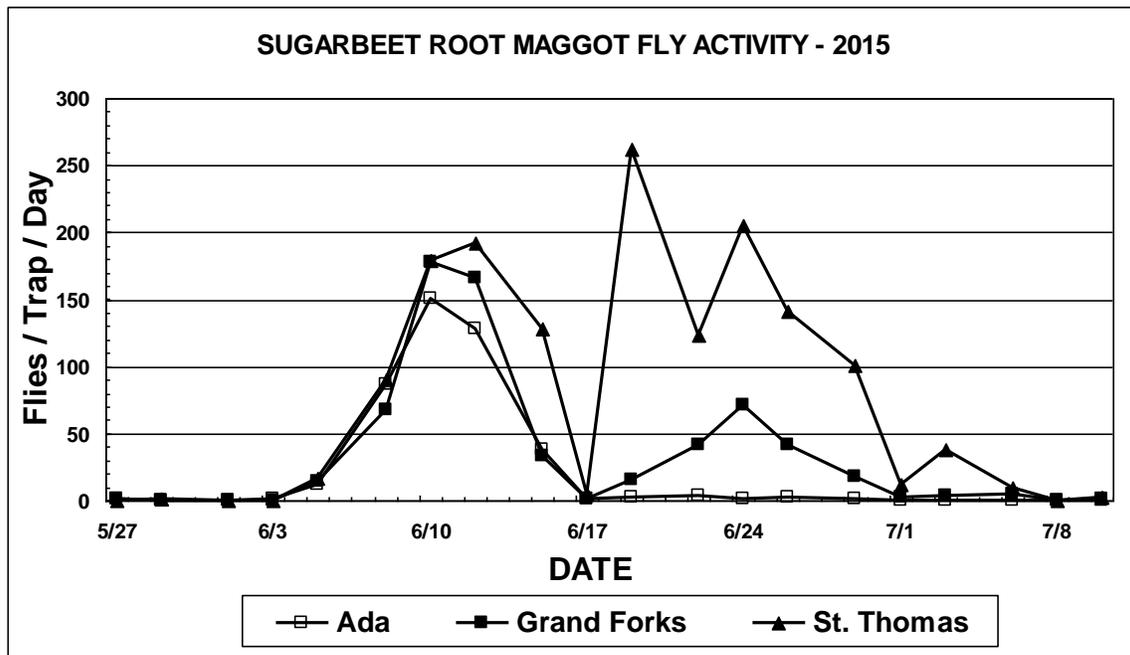


Fig. 1. Sugarbeet root maggot flies captured on sticky-stake traps at selected sites in the Red River Valley.

After the larval feeding period was completed in August, all 45 fly monitoring sites were also rated for sugarbeet root maggot feeding injury in accordance with the 0-9 scale of Campbell et al. (2000). This is carried out on an annual basis as a means of determining whether fly outbreaks and larval infestations were managed effectively.

Root maggot feeding injury in most fields was encouragingly low. The highest root injury ratings were observed in fields near St. Thomas, Grand Forks, and Auburn, ND (2.9, 2.8, and 2.1, respectively), and Ada and Borup, MN (2.9 and 2.2, resp.). Areas in which slightly less feeding injury occurred, but still could produce damaging infestations next year included Cavalier and Oakwood, ND, and Fisher and Euclid, MN. Root injury observed in all other sampled fields was exceptionally low. The nearly universal low root injury in those grower fields, despite the occurrence of very high fly activity levels earlier in the season, may suggest that control efforts made by producers were effective at managing SBRM infestations in 2015. Careful monitoring of fly infestations by growers in moderate- and high-risk areas (see Forecast Map, Fig. 1 in subsequent report) will be critical in 2016 to detect unanticipated flare-ups of SBRM fly activity and to prevent economic loss. Vigilant monitoring and effective SBRM management on an individual-field basis by sugarbeet producers may also help prevent significant population increases from one year to another because even moderate levels of root maggot survival in one year can be sufficient to result in economically damaging populations in the following year.

Reference Cited:

Campbell, L. G., J. D. Eide, L. J. Smith, and G. A. Smith. 2000. Control of the sugarbeet root maggot with the fungus *Metarhizium anisopliae*. *J. Sugar Beet Res.* 37: 57–69.