REMOTE SENSING OF SUGARBEET ROOT MAGGOT, *TETANOPS MYOPAEFORMIS*

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Feeding damage by a variety of insect species has been associated with measureable changes in plant reflectance. This facilitates the potential use of remotely sensed data to estimate the within-field populations of these insects. In an effort to determine if this technique is applicable to sugarbeet root maggot (SBRM), in the summer of 2012 remotely sensed data were obtained from plots supporting different SBRM populations. Plots in St Thomas, ND were categorized as having high, medium or low SBRM populations by assessing the mean root maggot feeding injury ratings in each plot. Canopy reflectance data were obtained using a CropScan® MSR-16 multi-spectral radiometer and compared across estimated SBRM populations. In addition, visible and NIR imagery, obtained using a TetraCam® ADC camera, were used to construct and compare several vegetation indices (including Normalized Difference Vegetation Index and the Soil Adjusted Vegetation Index). Analyses of these data indicate that there is a significant difference in canopy reflectance of plots with high SBRM feeding injury ratings and those with low injury ratings. These results suggest further refinement of these relationships may aid in estimating populations of sugarbeet root maggot.