



Update on Applied Nematology Corn Research Initiatives 2017

Dr. Marisol Quintanilla
Department of Entomology
Michigan State University

Sweet corn and field corn varieties were included in our 2017 vegetable nematode survey. A thorough survey of nematode species, distribution, soil type, and management strategies in Michigan vegetable fields was completed in 2017. A total of 18 growers' fields were sampled, spanning 14 vegetable crops. Corn was included in this and was sampled in the Southwest and Southeast regions of the state. The same sites were visited three times: initial sampling early in the growing season, mid-season, and near harvest. Nematodes were extracted from soil samples and identified. Our objectives for this survey were as follows:

1. Survey vegetable fields across Michigan and collect soil samples for nematode extraction and record field history information (completed)
2. Correlate nematode abundance and distribution data to soil type and field management practices (in progress)
3. Produce and disseminate nematode abundance and distribution information to Michigan vegetable growers and develop future research priorities (in progress)

At each location, soil type, field history, and management practices were recorded. Information recorded included: planting history for 2+ years previous, cover crop use, nematicide applications including fumigation, and soil type. A total of four corn fields were sampled as part of this survey effort (two sweet and two field) and samples are currently in the processing stage for nematode extraction. Commonly encountered nematodes in samples thus far include Spiral, Stunt, Root Lesion, and Soybean Cyst. At least one Lance, Dagger, and Stubby-Root nematode has each been found at various locations. As we continue to synthesize soil samples, we will be able to correlate problem nematode species with soil type and management practices.

Based on our nematode results from this survey in 2017, and after speaking to growers and educators about the need for an updated nematode distribution map for corn, in 2018 we will conduct a corn-specific plant-parasitic nematode survey. This survey will span the lower peninsula of Michigan with at least 40 growers visited. Management history will be recorded in addition to the collection of soil and root samples.

In addition, with the money from the commodity groups, we have hired a full time and permanent technician (Kristin Poley) who will be very involved in this project. We also have two Master students and undergraduate student help. We have been able to train our team and successfully complete several projects.