CONTROL SYMPHYLANS AND NEMATODES IN NON BEARING BLUEBERRIES

Alan Schreiber and Steve Midboe
Agriculture Development Group, Inc.
2621 Ringold Road
Eltopia, WA 99330
(509) 266 4348
aschreib@centurytel.net

Symphylans are small, cryptic myriapods without eyes and without pigment. The body is soft and 2 to 10 millimeters (0.079 to 0.39 in) long, divided into two body regions: head and trunk. Symphylla are rapid runners. They are primarily herbivores and detritus feeders living deep in the soil, under stones, in decaying wood, and in other moist places where they feed on the root hairs and rootlets and can sometimes cause crop failure. The garden centipede, *Scutigerella immaculata*, can be a serious pest of vegetable crops and tree seedlings and occurs in greenhouses as well as agricultural situations. Symphylans have been reported as living up to four years, and molt throughout their lifetimes.

While this pest has been known as a pest of blueberry it has not been a pest of large consequence until the planting of blueberries spread to areas not previously planted to the crop, particularly in cooler, wetter and or heavier soils. Young plant roots are fed on by the symphylans and either grows too slowly or is so weaken that they succumb to other forms of pestilence.

Washington blueberry growers have no means to control symphylans; for example, the PNW Insect Management Guideline has no chemical or non-chemical control suggestions for this pest in blueberries.

Plant-parasitic nematodes are commonly encountered in blueberry plantings, with nematodes being detected in 73 percent of surveyed blueberry plantings. The most commonly encountered plant-parasitic nematodes in Oregon and Washington are stubby-root nematode (*Paratrichodorus renifer*), root-lesion nematode (*Pratylenchus spp.*) and pin nematode (*Paratylenchus spp.*). The stubby-root nematode is a migratory ectoparasite found only in the soil. (It does not enter the blueberry root.) This nematode has been shown to reduce the root growth of blueberry cuttings in propagation beds and to reduce canopy size and yield in microplot experiments. Several blueberry cultivars, including ‘Duke,’ ‘Misty,’ ‘Bluecrop,’ ‘Brunswick,’ and ‘O’Neal’ were good hosts for stubby-root nematode.
Currently available chemical (Telone, metam sodium, dimethyl disulfide (Paladin) and dazomet (Basamid)) products have limitations including availability, odor/efficacy issues (Paladin), and use pattern restrictions (all of them) severely limiting their availability. None of them are recommended post planting. Non chemical control options have exceedingly low efficacy.

The state of Oregon recently received a Section 24c registration for Mocap (ethoprop) on non-bearing blueberries for control of symphylans. We propose to conduct a trial to demonstrate efficacy of Mocap for control of symphylans and nematodes. The use pattern would allow pre and post planting use, including chemigation. There are differences between the lower Willamette Valley of Oregon and Whatcom County. The industry wants to confirm that the success observed in Oregon can be duplicated for symphylans in Northwest Washington and establish that the product will reduce nematodes in blueberries using the rather novel application methods included on the label (apply Mocap through drip lines). Since blueberries take two years to begin bearing, a non-bearing use allows the growers time the year before establish (assuming no crop is present, which is typical) as well as the year after planting to make the application.

1) untreated check

2) preplanting – broadcast at 1.33 quarts per acre and then immediately rotovate the product into the top 2 to 4 inches of soil, then plant blueberries after 3 days.

3) preplanting – using overhead irrigation equipment, apply 1.33 quarts per acre per acre using 1 to 2 inches of water, then plant blueberries after 3 days.

4) post planting – broadcast or band apply 1.33 quarts per acre and then immediately apply 1 to 2 inches of water to incorporate Mocap EC.

5) post planting – apply 1.33 quarts per acre to prewetted soil using sub soil drip irrigation system with pressure compensating emitters. Follow the chemigation with enough water to move the Mocap into the top 2 to 4 inches of soil.

The results for this trial will be discussed.