Root-Knot Nematodes on Mini Bell Peppers

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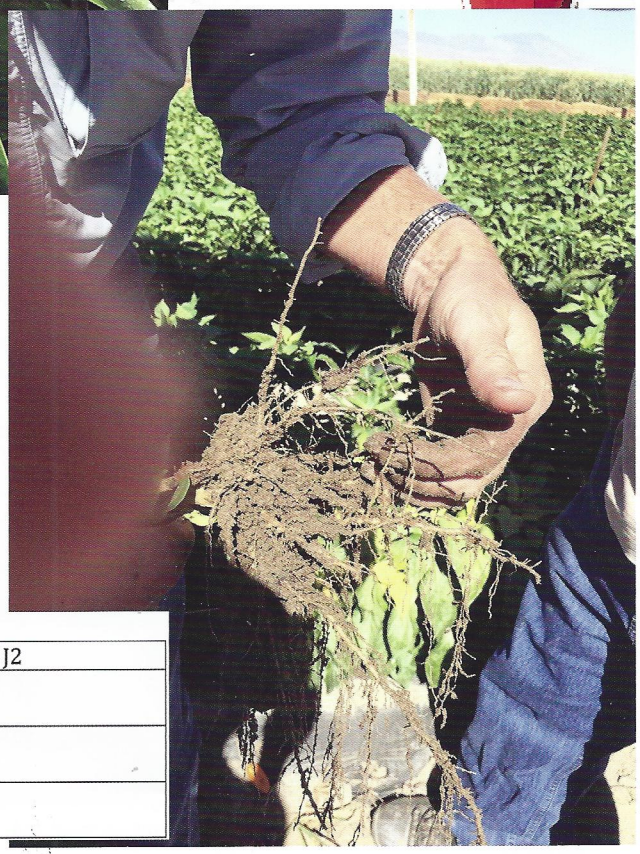

In early April 2015 many plants in a mini bell pepper field near Mecca, Coachella Valley, Riverside County, began showing yellowing on the newer growth. This field was close to harvesting. This yellowing symptom is often assumed to be nitrogen deficiency. Aguiar's records indicate that this field has a history of root-knot nematode problems in pepper.

Over time the yellowing became more and more obvious and more plants in this field began to show this symptom. Although symptomatic plants were scattered throughout the field, there was one area that was a major hotspot.

Soil and root samples were collected from healthy looking plants and from plants with yellowing of the newer growth. Those

Table 1. Nematode analysis results (Root-knot nematodes)

Root Samples	Root Weights in grams	Results: in J2
1: from healthy area, no galling on roots	13.43	11
2: from healthy area, no galling on roots	14.31	0
3: from affected area galling on roots	18.18	121,000

Figure 3, top.This area of the field was a hotspot that was heavily affected with yellowing of the newer growth.
Figure 4, center. Roots of the samples analyzed at Department of Nematology, UCR.
Figure 5, bottom. Roots with Root-Knot nematode galls.

samples were analyzed for nematodes at the Nematology Dept. at UCR.

A visit to the field by the Farm Advisor and Nematology Specialist revealed the galling on the roots in the hotspot that one would expect to see on root-knot nematode infected plants.

It is the second-stage juveniles (J2) that are worm-shaped that enter the plant roots. These Juveniles develop into females and the root forms a gall. A female can lay up to 400 eggs. The eggs can hatch and serve as a source of inoculum, or they can remain in the soil to infect the next crop. Meloidogyne incognita, can complete its life cycle in 4 weeks under an optimum soil temperature of 32C, (90F) and becomes inactive when soil temperatures drop below 17C (62F).

Suggestions

Avoid mono-cropping peppers or rotating with other good host cros (e.g. tomato, eggplant, snab beans, cucurbits).

Soil should be sampled early, middle and late season to track the root-knot nematode populations. Early season it should be very low and by late season it should begin climbing.

Clean up the field as soon as the last harvest is completed. Disk plant residue into the soil where it can be broken down quickly.

If you suspect a nematode problem, call the Farm Advisor's office. The farm advisor can coordinate with Extension Nematologist to test soil and plant roots for nematodes.

New materials appropriate for nematode control are being registered for vegetable crops. The Extension Nematologist and the Farm Advisor have established a nematode research plot at Coachella Valley Agricultural Research Station for testing new materials under local conditions and crop varieties. Check with the Farm Advisor to see when seminars are scheduled that presents these research results. VW