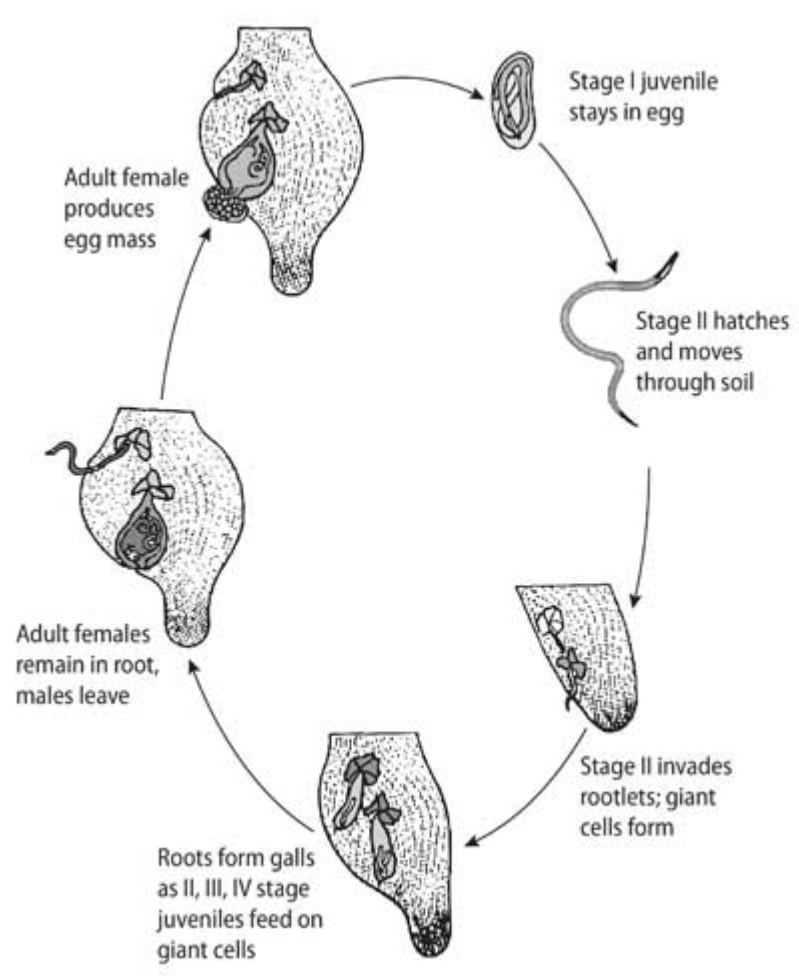
CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

Peach Root-Knot Nematode Update



Meloidogyne floridensis

UCIPM

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Primary State Plant Pathologist and Nematologist –ECOPERS

- The peach root-knot nematode (PRKN), *Meloidogyne floridensis*, is a problem for peach production in Florida. It was first discovered in 1966 on peach rootstocks that otherwise were known to be resistant to multiple RKN species.

- This nematode infects the current preferred rootstocks ‘Nemaguard’, ‘Nemared’, ‘Flordaguard’, ‘Okinawa’, and ‘Guardian’.

- Florida does not have an equivalent to our regulations for nursery stock for farm planting to be produced on fumigated ground or be sampled. In 2019, a study found that 6 of 7 peach trees sold as nursery stock had RKN.

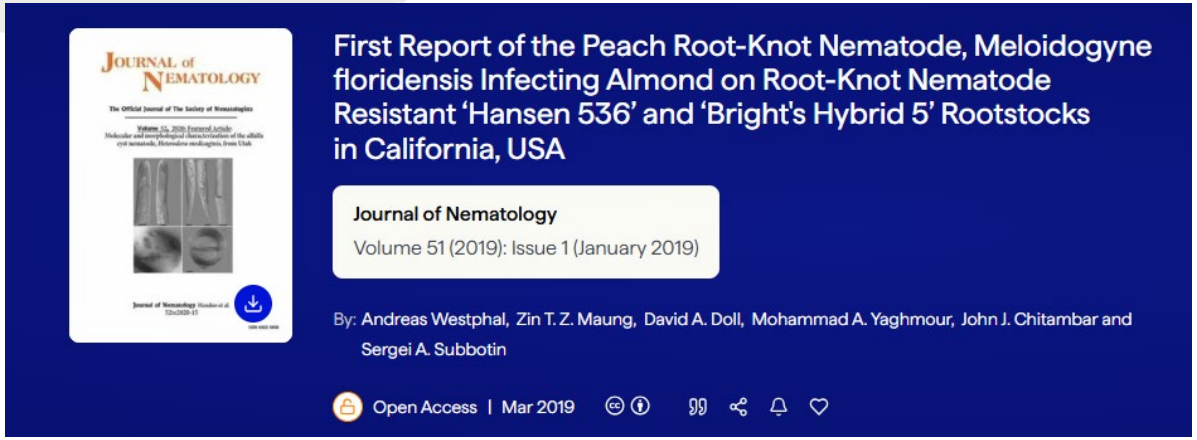
Credit: Janet Brito, IFAS Extension

PRKN status in the United States
Present, Localized

- California — Present, Few occurrences
- Florida — Present
- Georgia — Present, Few occurrences
- South Carolina — Present, Few occurrences

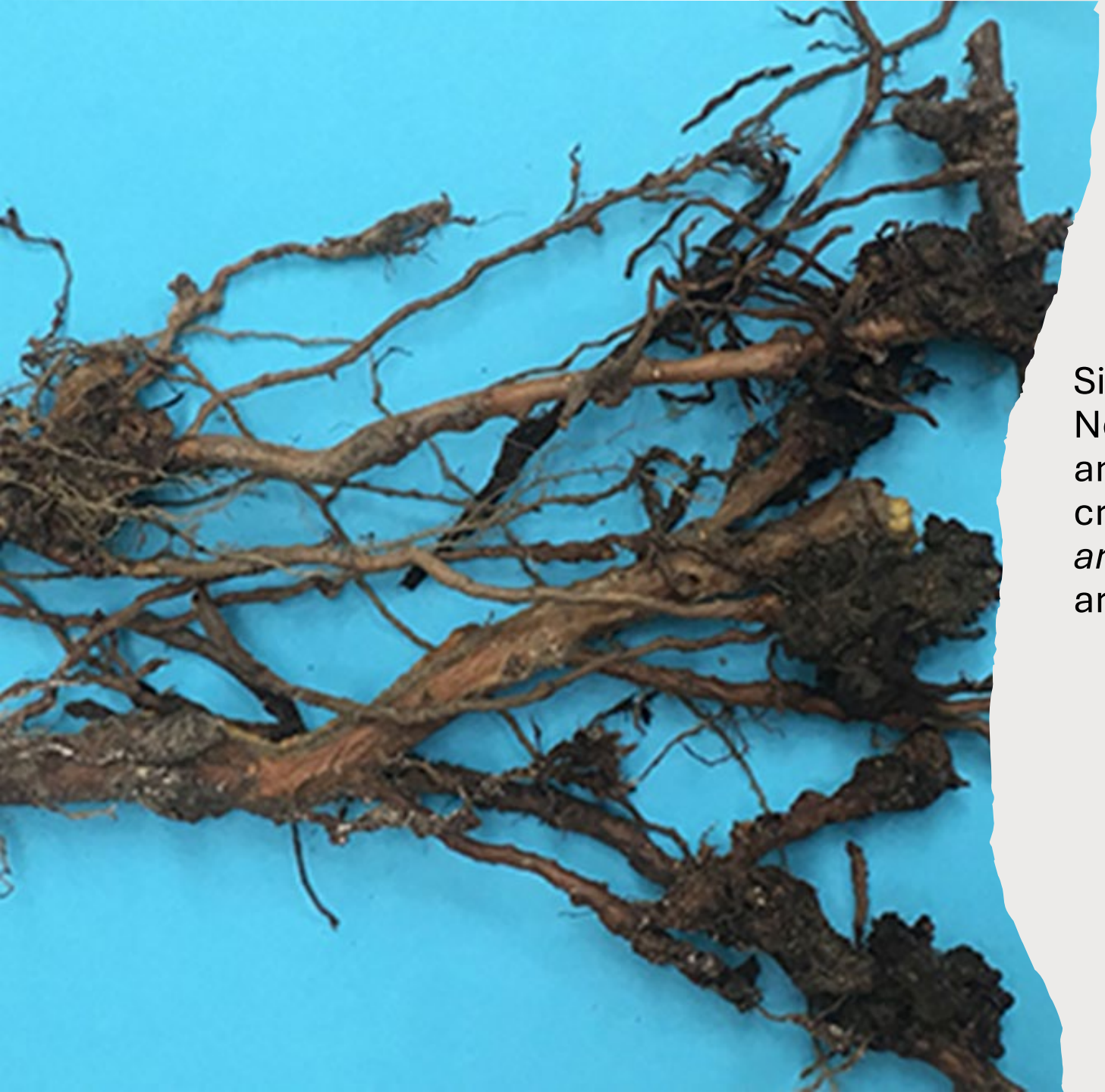
John Halbrendt, Penn State Extension

Meloidogyne floridensis was first reported in California in 2018 from *M. incognita*-resistant almond rootstocks in Merced and Kern counties.



- CDFA made this nematode an A-rated pest in California with a very limited distribution. When found, it is subject to official control, which can include quarantine, treatment, and/or crop destruction.

- Because of its "A" pest rating, cultures of this nematode can only be maintained in a nematode quarantine facility.



Since the early 1960s, the rootstock Nemaguard and others, such as Marianna 2624 and Myrobalan 29C, have protected *Prunus* crops from attack by root-knot nematodes (*M. arenaria, M. incognita*, and *M. javanica*), which are common in California.

Roots of rootstock Hansen 536 infected with PRKN
Credit: John Chitambar, CDFA

Healthy 2-year-old almond tree.

PRKN infected 2-year-old almond tree.

Credit: Andreas Westphal, UCCE

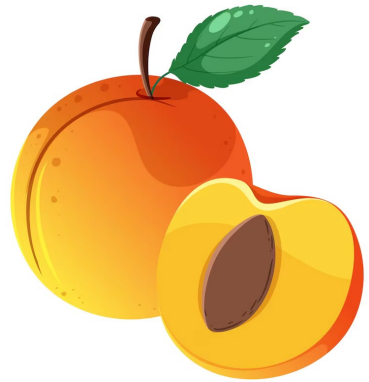
PRKN has not been detected in California since the initial findings

None were found in a 2023/24 GRKN survey

Meloidogyne floridensis has been reported on many other hosts, including trees, vegetables, weeds, and ornamentals

None of the *Amygdalus* subgenus (grouping of peach and almond) of the genus *Prunus* provides suitable resistance to PRKN. In California, the introduction, establishment, and spread of PRKN is of concern, as ninety percent of the peach industry in the state is planted on Nemaguard rootstock

Research done at UC Riverside: Trees and vines- Andreas Westphal



- *Meloidogyne floridensis* infected *Prunus* lines aggressively (but there is some potential for finding resistance in *Prunus* rootstock material grown in California).

- In grape, one of the lines tested was susceptible to *M. floridensis*.

- In pistachio, there was some galling detected, but nematode infection and reproduction were not corroborated by egg masses.

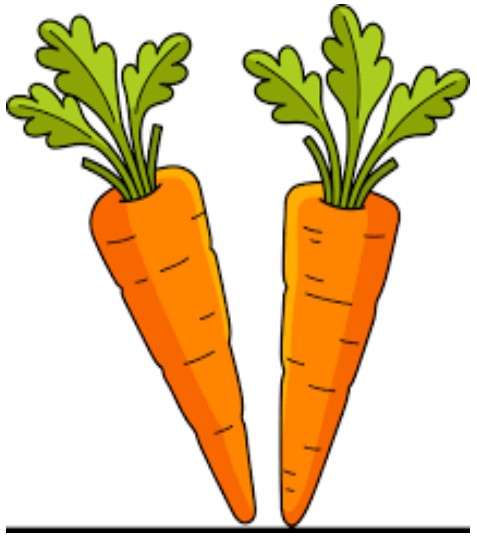
- In walnuts, there was some galling and some egg mass detection.

Research done at UC Riverside: sweet potato and tomato -Antoon Ploeg and Scott Stoddard

- Sweet potatoes ‘Bellevue’, ‘Burgundy’, and ‘Covington’ were resistant to *M. floridensis*. ‘Beauregard’ was an excellent host, and ‘Diane’ was a good host with gall formation and egg production

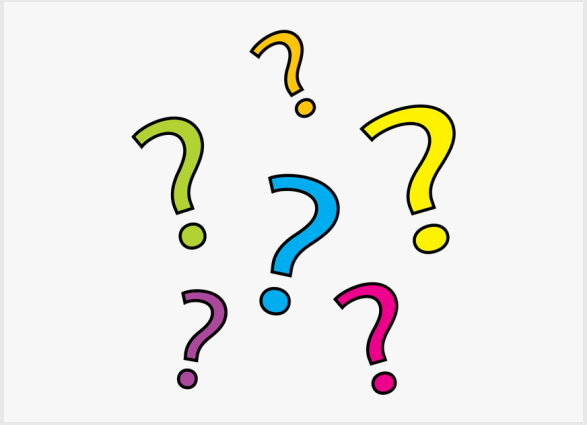
- Mi-gene resistant tomato ‘Celebrity’ - *M. floridensis* resulted in root galling and egg production

Research done at UC Riverside: vegetables - Antoon Ploeg and Scott Edwards



- *Meloidogyne floridensis* can overcome genetic resistance to other RKN in pepper, tomato, cotton, and, to a lesser extent, cowpea.

- Important California vegetable crops, including carrots and melons, are hosts for this nematode



Nematology Resources:

- County Ag Commissioners/ CDFA Plant Pest Diagnostics Lab/ CDFA Nursery Staff

- UCCE Nematology Advisors – Dr. Westphal KARE, Dr. Ploeg UCR