

Evaluating novel nematicidal chemistry for usefulness in the nursery industry

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Project Summary/Abstract

Briefly describe the long-term objectives for achieving the stated goals of the project.

The nursery industry and California agriculture have greatly benefitted from clean stock programs. The need for sanitary treatment of stock production area is great. Regulatory guidelines of the Nursery Inspection Procedures Manual (NIPM-7) prescribe proper procedures for sanitizing nursery ground or alternative strategies to ensure clean nursery stock. With the discontinuation of methyl bromide a true gap of treatment availability has arisen. Other than in production areas, very high levels of nematode reduction are necessary to produce high quality nursery stock. After decades of few nematicidal compounds being developed, the most recent years have provided new chemistries becoming available for nematode suppression. These non-fumigant nematicide presents themselves more environmentally benign and user-friendly than previously used materials. At the same time, older chemistry is not fully evaluated for effectiveness in nematode suppression to the extent necessary to achieve clean stock production. It is the objective of this proposal to determine effectiveness of new materials and investigate methods for their application to affect the necessary nematode reduction to soil depths that could otherwise present a reservoir for plant infection. Efficacy data within the soil profile along with plant growth responses to the treatments will straight-forwardly illustrate the usefulness of these products.

Scope of Work

Describe the goals and specific objectives of the proposed project and summarize the expected outcomes. If applicable, describe the overall strategy, methodology, and analyses to be used. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate. Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the goals and objectives.

Proposed for 2018/2019: Application of the best performing materials in nurseries

In this year, the most successful materials/methods will be taken to commercial nurseries for experimental applications if regulatory guidelines permit such testing. Two tree nurseries have agreed for collaboration in this objective, and sites will be identified at those operations for risk of nematode infestation. Treatments will be laid out in randomized designs and applied in preparation of a fall planting. Preseason soil samples will be taken to determine the nematode species and numbers present at the experimental site. Monitoring pouches filled with resident soil and citrus nematode-infected roots will be installed at critical soil depth if the resident population densities of the nematodes are only spotty and additional data would benefit the project. Such pouches will be removed after treatment incubation time when post-treatment soil samples will be taken at planting to determine the treatment effectiveness. Root sampling of the nursery stock will be done at the established 6-month intervals.