CASE STUDY: Nematode Control
Damned if You Do, Damned if You Don't

Location: Hilo, Hawai`i

Background

Marigolds (*Tagetes* sp.) produce chemicals that kill nematodes. Since there are many marigold species and cultivars, it is important to know which are best for our tropical environment. We have found that many marigold cultivars are photosensitive, flowering and senescing too rapidly in our environment. The amount of biomass that is produce is insufficient to provide meaningful nematode control.

The Experience

Tagetes erecta X *T. patula* 'Polynema' was evaluated for root-knot nematode (*Meloidogyne javanica*) control in ginger. This *Tagetes* hybrid is purported to have better nematode control abilities than other marigolds and produce substantial amounts of biomass.

The marigolds were seeded and a stand established. Initial nematode population assays showed low numbers of root-knot nematode. This trend continued in subsequent samples with root-knot nematode populations averaging only 15 juveniles/250 cm^3 soil at the termination of the experiment. However, populations of the reniform nematode (*Rotylenchulus reniformis*) averaged 6,000 vermiform/250 cm^3 soil.

The Theory behind the Experience

Marigolds are not hosts to root-knot nematodes. Consequently, during the marigold growing period, the root-knot nematode population decreases. There are likely to be even more declines in the root-knot nematode population once the marigold biomass is incorporated into the soil. However marigolds are hosts to the reniform nematode. While the marigold is growing, the reniform nematode is reproducing. Since we grow the marigold for several months, we have time for multiple generations of the reniform nematode.

Overview of Sustainable Techniques Used

Proper Pest identification

Appropriate selection of non-host crops

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