**Building eco-responsive strategies to manage plant parasitic nematodes.**

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Semiochemicals mediate chemical communication and interactions between and within species. Examples include sex and aggregation pheromones that have been investigated and identified largely for above-ground insect pests. For below-ground pests including plant parasitic nematodes, chemical cues have been found to play crucial roles in host and non-host plant discrimination, essential for survival of various species. Understanding the nature and identity of these chemical signals offers opportunities for developing effective eco-responsive solutions for sustainable agriculture, especially for smallholder farmer productivity. In this presentation, I will highlight advances made in our group to identify semiochemicals that mediate specific behaviors in plant parasitic nematodes. Towards developing a resilient management strategy for plant parasitic pests, I will draw examples from our work based on laboratory and field experiments to i) elucidate the mechanisms of host finding in the root knot nematode *Meloidogyne incognita*, and use of non-host companion crops to suppress this phenotype in tomato, and ii) use of a biodegradable lignocellulose matrix to disrupt chemical signalling mediating host finding in the invasive plant parasitic nematode, the potato cyst nematode *Globodera rhostochensis*.