Managing Invasive Pests:
The case of *Thrips parvispinus* in pepper in Florida

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Introduction

- *Thrips parvispinus* (Karny) is an invasive thrips species that can compromise the potential yield of at least 43 different plant species.
- Since its detection in 2020, *T. parvispinus* has emerged as a serious pest to agriculture in the U.S, and it is currently a regulated pest in ornamental in Florida state.
- It is a polyphagous species and has been reported on infesting beans, eggplant, papaya, pepper, potato, shallot and strawberry.
- It causes direct harm to plants through its feeding and reproduction on young leaves, fruits, and flowers.

Study Aim

To enhance the understanding of *T. parvispinus* biology and behavior, that will allow to provide growers with improved strategies for managing this species.

Objectives

1. Monitor *T. parvispinus* seasonality in pepper crops in Palm Beach County, Florida.
2. Evaluate pepper cultivars for resistance to *T. parvispinus*.
3. Examine efficacy of different insecticides for *T. parvispinus* control.

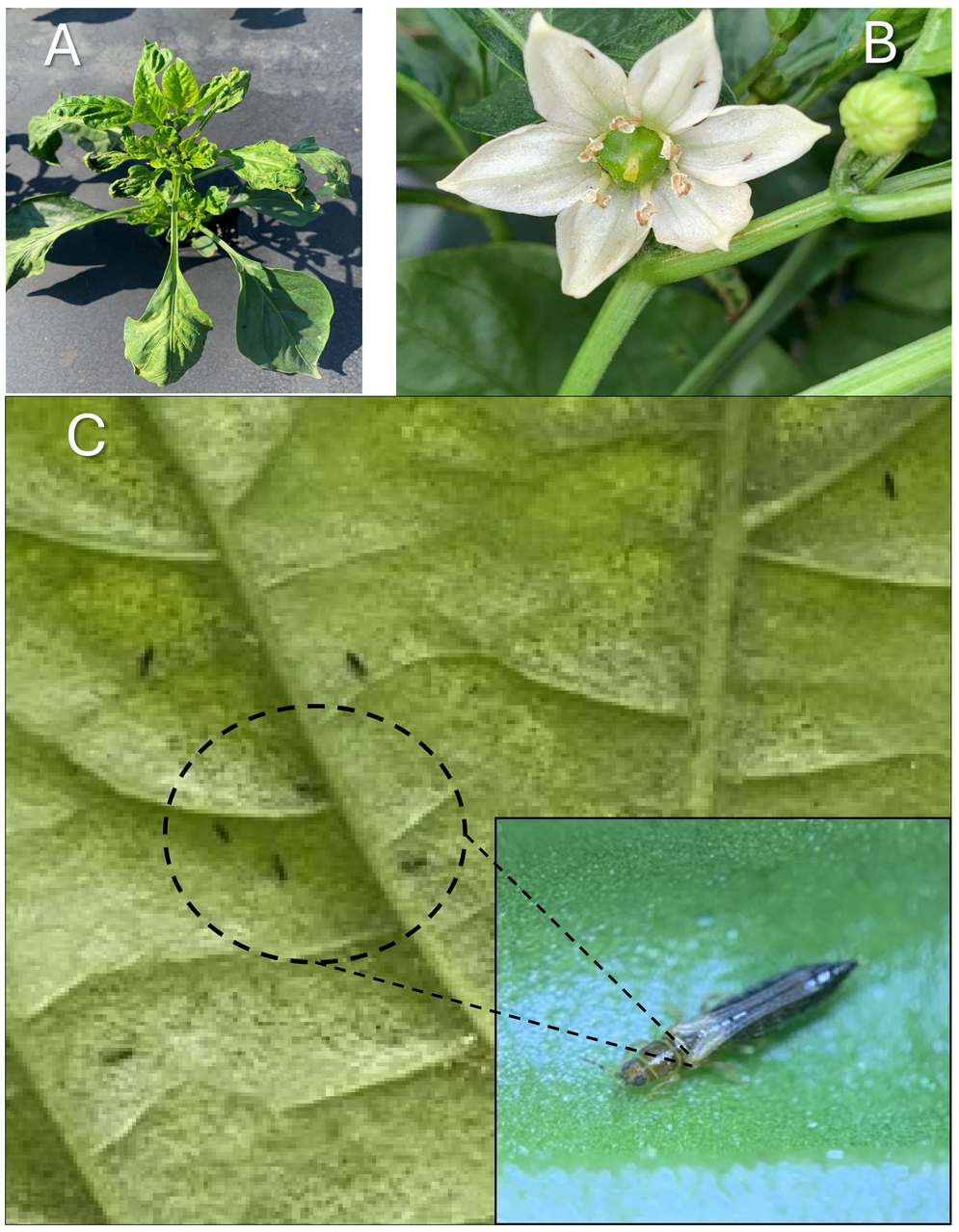

Figure 1. (A) Young pepper plant infested by *T. parvispinus.* (B) *T. parvispinus* on pepper flower. (C) Female *T. parvispinus.* (Meszaros and Mou, 2023)

Locations

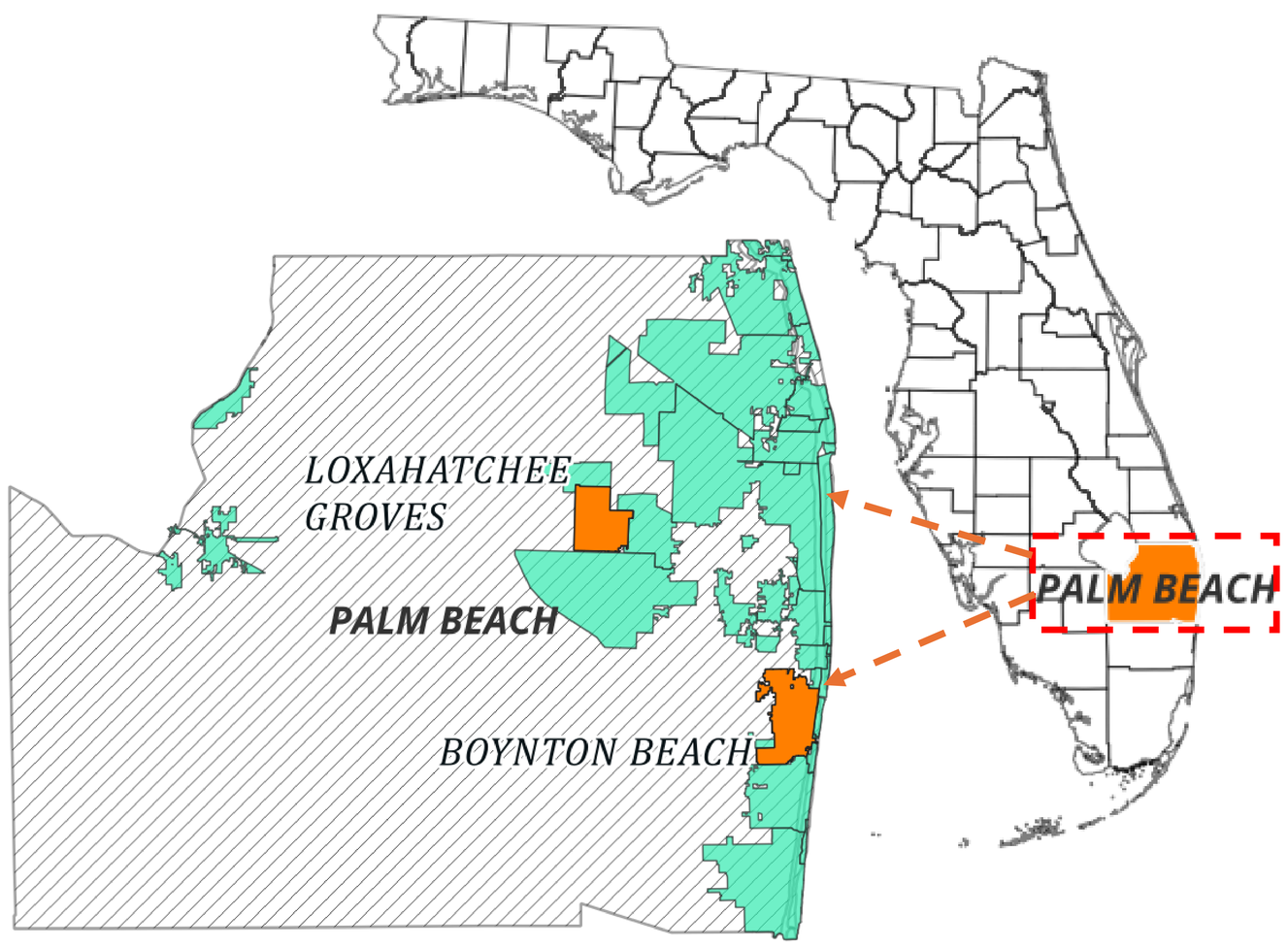

Figure 2. Location of pepper field sites in Palm Beach County, FL.

Methodology

1. Scouting fields every two weeks throughout the 2024, 2025, and 2026 seasons, using pan traps (Fig 3) and collecting pepper flowers and leaves samples.
2. Female *T. parvispinus* (N=10) will be added to a single plant of each of 10 different pepper varieties, and the number of adults and larvae will be counted after two weeks to evaluate resistance.
3. Resistance of *T. parvispinus* to different insecticides available on the market will be tested with mortality bioassays conducted in laboratory and greenhouse.

Figure 3. Pan traps. Solution: 80% water + 20% propylene glycol.

Expected Results

1. Understand how *T. parvispinus* abundance fluctuate throughout the year and host availability.
2. Identify pepper variety that shows resistance characteristics to the thrips and implement to the IPM program.
3. Provide effective insecticide options with different mode of actions for the thrips IPM.

Acknowledgement