

Population Distribution of Pest Thrips and Natural Enemies in Strawberry Fields

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Summary

Both, chilli thrips and western flower thrips were present in all the four strawberry fields at low numbers. Two population peaks (>20 thrips per five plants) of chilli thrips was observed at only one field in early January and mid-February 2021, and such a single peak in western flower thrips population was evident in December 2020 in two of the four fields. Since there was no general trend of thrips population aggregation within-field, scouting/monitoring and management efforts targeting the whole strawberry field, would be beneficial during January and February. The most effective insecticides such as Radiant and Exirel, should be reserved for use during these peak chilli thrips periods. Use of biological control agents and softer insecticides that would allow the naturally occurring predatory insects to build their within-field populations, is advisable during the earlier months.

Objectives

The objectives of this proposal were to determine: 1) chilli thrips and western flower thrips distribution and migration pattern into strawberry fields, and 2) natural enemy occurrence and distribution in strawberry fields.

Methods

Four local strawberry fields under conventional pest management program with a size range of 10-12 ha (25-30 acres) were selected in Plant City. These fields were sampled for thrips species

complex during the entire strawberry season 2020-2021.

Each field had sampling points at the field edge that were 100-m apart and interior sampling points that were 50-m away from the sampling points at the edge (**Fig. 1**). Fields were sampled on a biweekly basis. Thrips data collected from four fields in Plant City were plotted/analyzed in ArcGIS Pro 2.8.1.

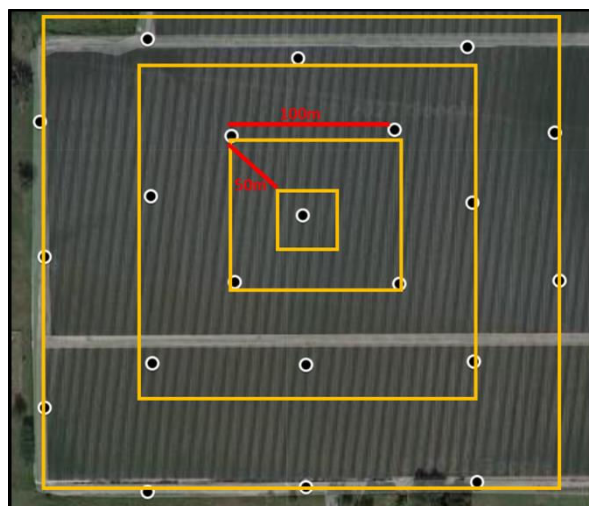


Figure 1: Sampling points in one of the fields.

Results

Thrips distribution in the field: Among four sampled fields, field G had higher chilli thrips populations throughout the season followed by field F, D, and C (**Fig. 2**). An average of more than 20 thrips per five plants was only observed at 2-3 within-field locations in Field G, once in December

and once in January, and only in December in Fields F and D, in case of western flower thrips (Figs. 2&3). Overall, the thrips distribution was random.

Natural enemy distribution in the field: Minute pirate bug, big-eyed bug, lacewings, and long-legged flies are commonly found natural enemies of thrips pests. Natural enemies were present but in negligible numbers in all four fields on all sampling dates.

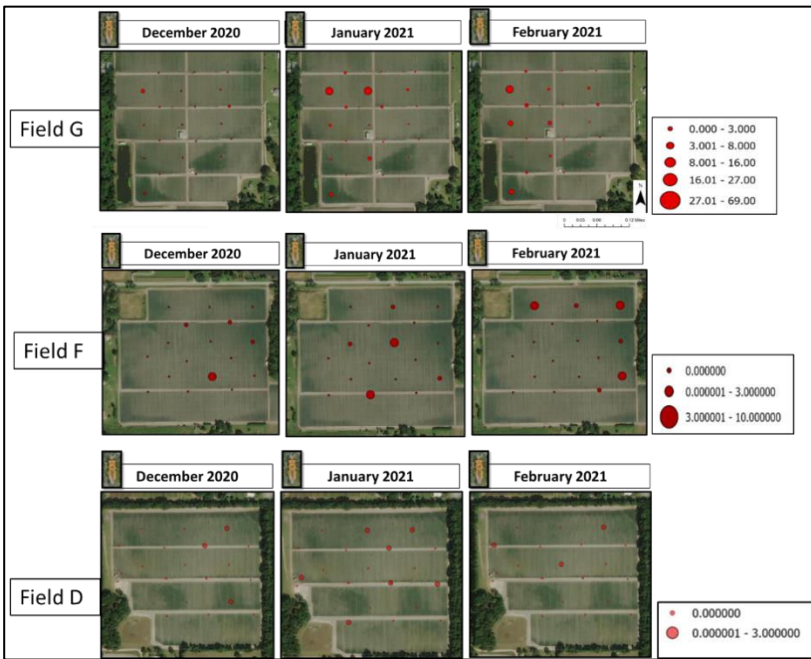


Figure 2: Maps of three fields representing average number of chili thrips populations in December 2020, January 2021, and February 2021. Field C (4th field) had negligible thrips, therefore, was not mapped.

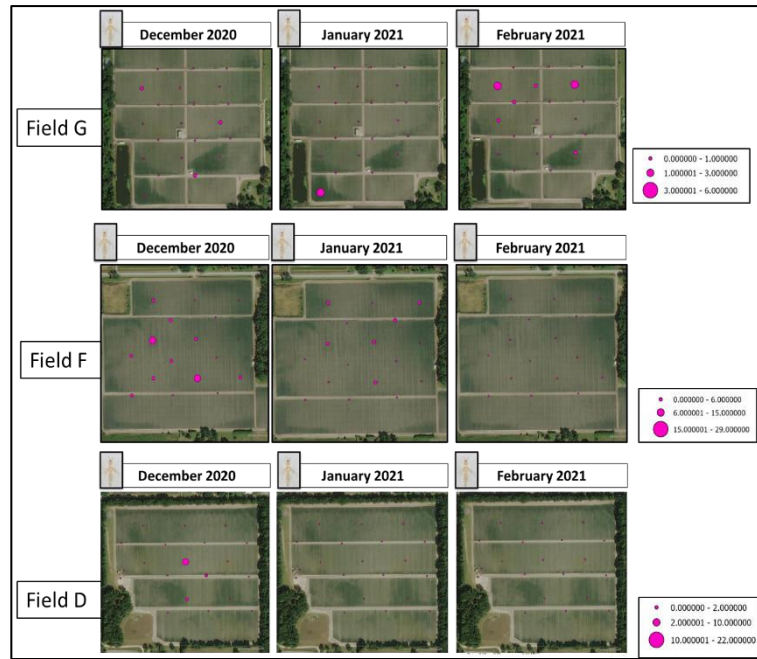


Figure 3: Maps of four fields representing average number of western flower thrips populations in December 2020, January 2021, and February 2021. Field C (4th field) had negligible thrips, therefore, was not mapped.

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