

# MONITORING ONION PESTS ACROSS THE TREASURE VALLEY–2020

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## Objective

Provide growers with regional assessments of pest abundance in commercial fields.

## Introduction

Growers continue to be challenged by how to manage thrips and iris yellow spot virus (IYSV), which is transmitted by thrips. The Idaho-Eastern Oregon region has a range of different subregions, and thrips and virus pressure varies across those subregions. A number of growers have asked for assistance in monitoring pest pressure within their particular growing areas so they can make better informed management decisions.

## Methods

Sixty-two commercial onion fields (7–12 fields in each of seven growing areas) were monitored for thrips, IYSV, and other pest problems on a weekly basis. Those areas were (1) Oregon Slope/Weiser, (2) Vale, (3) Ontario, (4) Nyssa, (5) Adrian, (6) Fruitland/New Plymouth, and (7) Parma. Forty-eight of the fields were in yellow onions, nine were in red onion fields, four were in white onions, and one was a shallot field. A minimum of 10 plants per field were sampled for adult and immature thrips; counts of the number of green leaves were taken on those plants as a measure of crop development. Up to 50 plants per field were inspected for thrips early in the season, when infestations are sporadic. A minimum of 200 plants per field were inspected for symptoms of IYSV.

Averages of adult and immature thrips and of IYSV incidence for each district were reported to growers, crop advisors, and others each week from May 5 to August 15, when plants began to senesce and fields were being prepared for harvest.

## Results and Conclusions

Overall thrips pressure in 2020 was similar to the past three years. Figure 1 shows mean total thrips per plant in untreated plots at the Malheur Experiment Station from 2013 to 2020 (Figures 1 and 2). In 2020, peak abundance occurred on June 22, July 2, and July 16, with approximately 35–37 thrips per plant. Populations were likely suppressed by rains in late June (Figures 3 and 4).

Thrips began colonizing commercial fields in early May (Figures 3–6). Adult thrips were first detected at low levels (<0.1 per plant) during the first survey the week of May 5 in all areas. Plants with thrips were at the 2- or 3-leaf stage; fields with younger plants (flag leaf, first leaf) had not yet been colonized by thrips. A few immature thrips were present on a few plants at the 3-leaf stage on the Oregon Slope and in Parma, indicating that adults had colonized plants at least within the past

week. Thrips populations built through June, and peaked between the last week of June and July 10 (Figures 3 and 4). From June 26 through July 10, approximately 90% of plants had thrips present in all subregions.

The first plants infected with IYSV were detected by July 3 in all areas except Vale (Figure 7). The first infected plants were found the following week in Vale. Iris yellow spot virus pressure built in some areas later in July and into August as insecticide programs ended. By August, 95% of the fields had infected plants although the percentage of infected plants per field remained relatively low for most fields. Although some fields had substantial amounts of IYSV, the virus overall was not as severe as in some past years.

Note that Figures 3–7 show averages for each growing area and that patterns among individual fields vary. Figure 8 shows patterns for three representative fields with varying degrees of thrips pressure.

## **Acknowledgments**

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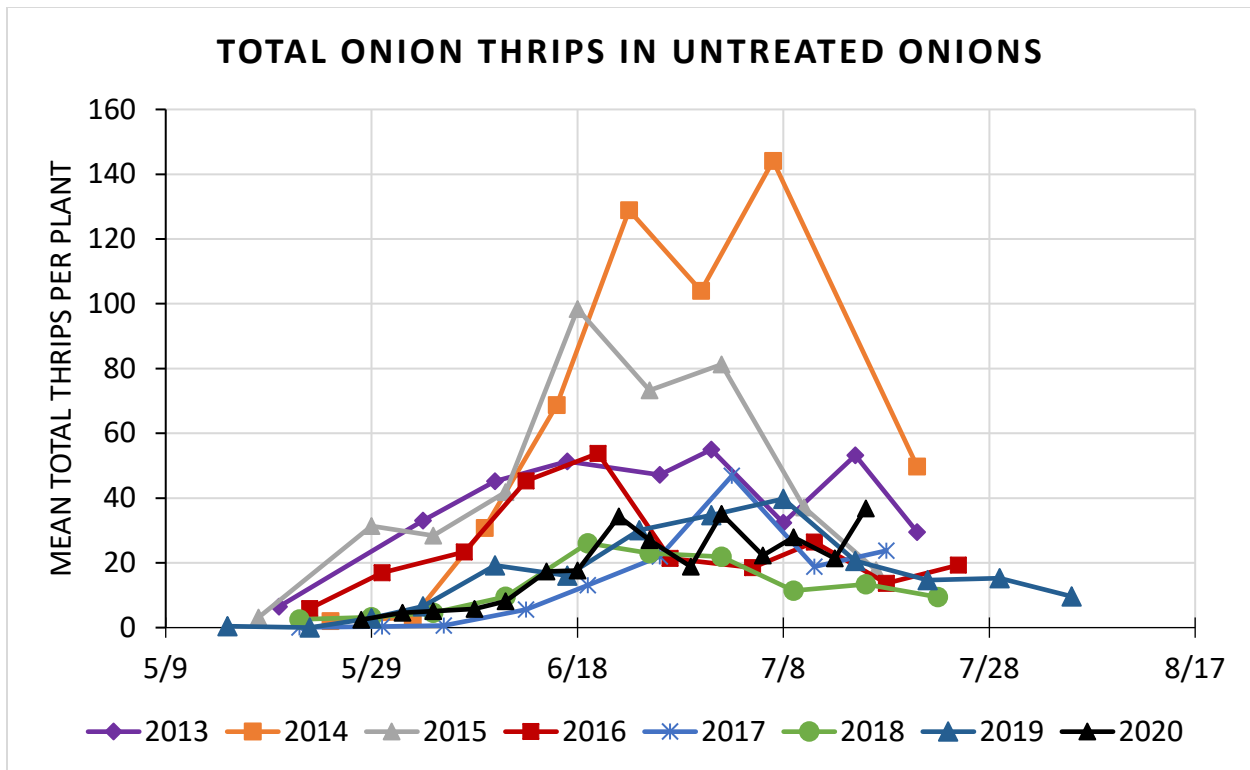


Figure 1. Mean total thrips per plant in untreated onion plots at the Malheur Experiment Station, Oregon State University from 2013 to 2020.

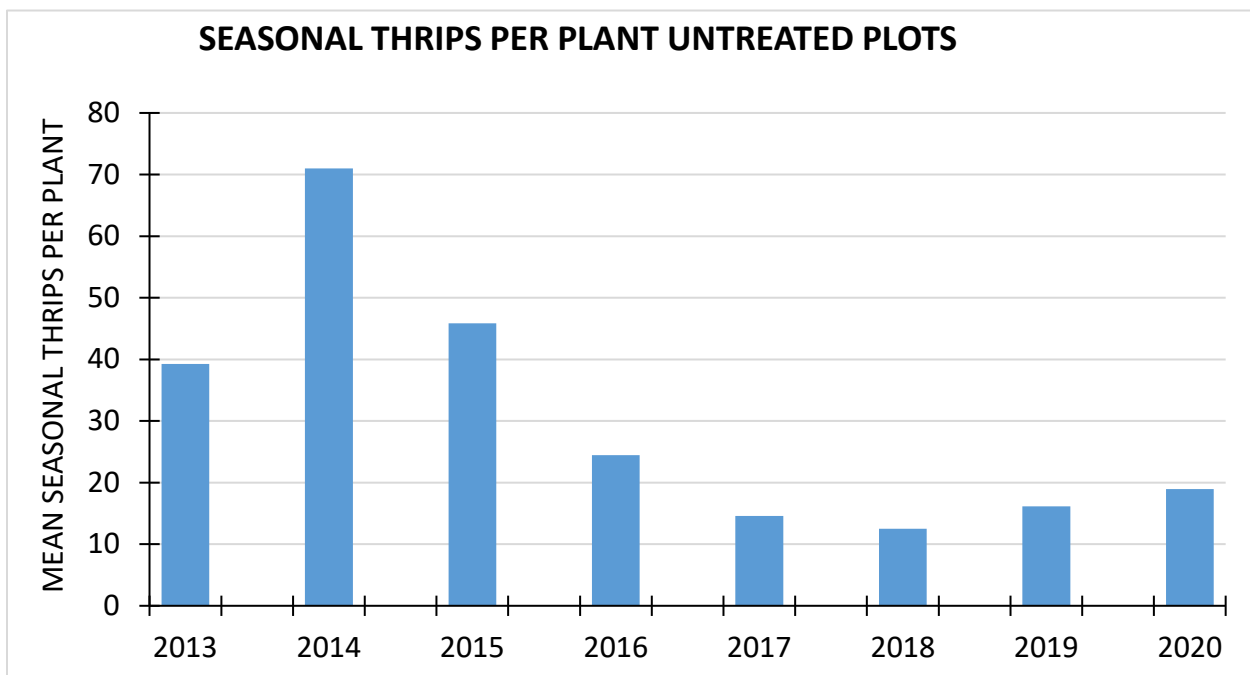


Figure 2. Mean total thrips per plant, averaged over the season, in untreated onion plots at the Malheur Experiment Station, Oregon State University, from 2013 to 2020.

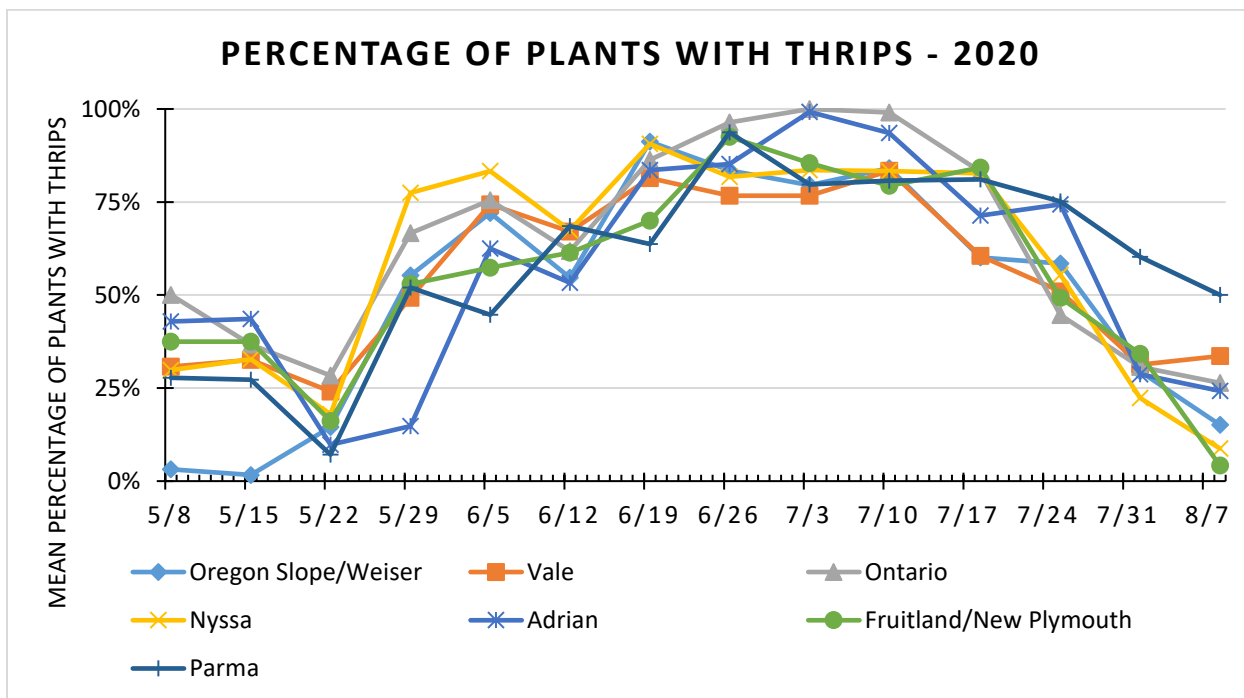


Figure 3. Average percentage of onion plants with thrips present during the 2020 season from different growing areas of the Treasure Valley.

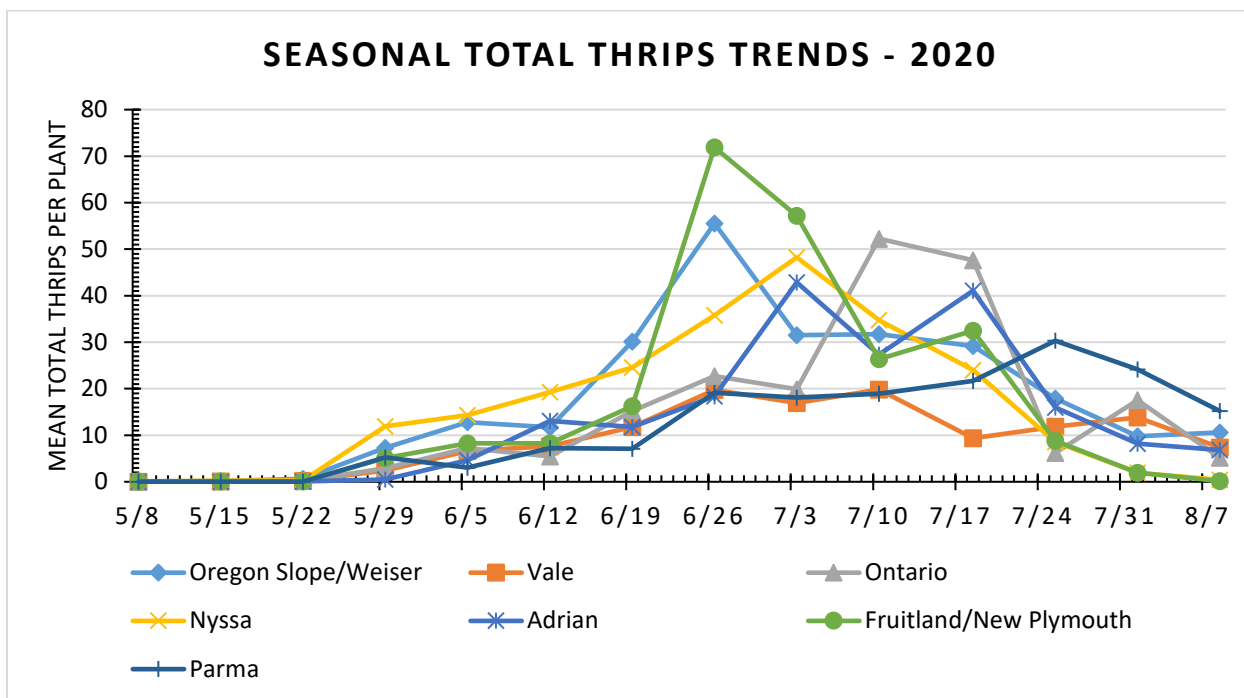


Figure 4. Seasonal trends of total thrips in onion growing areas of the Treasure Valley during 2020.

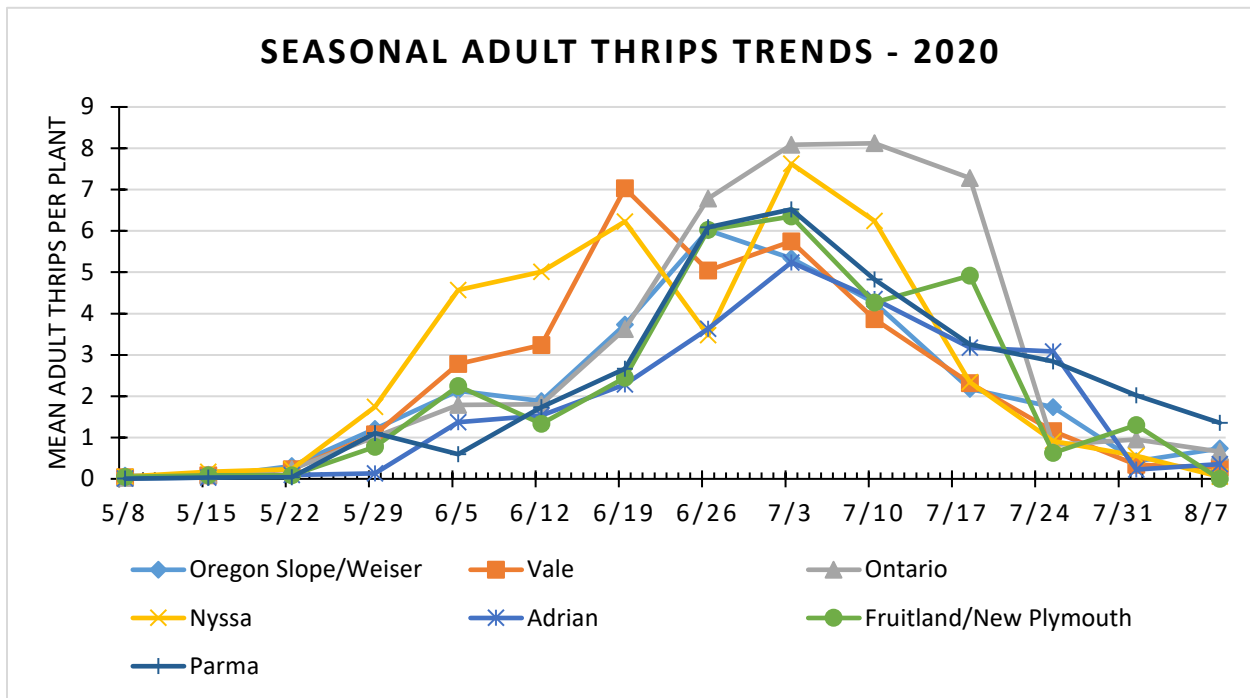


Figure 5. Seasonal trends of adult thrips in onion growing areas of the Treasure Valley during 2020.

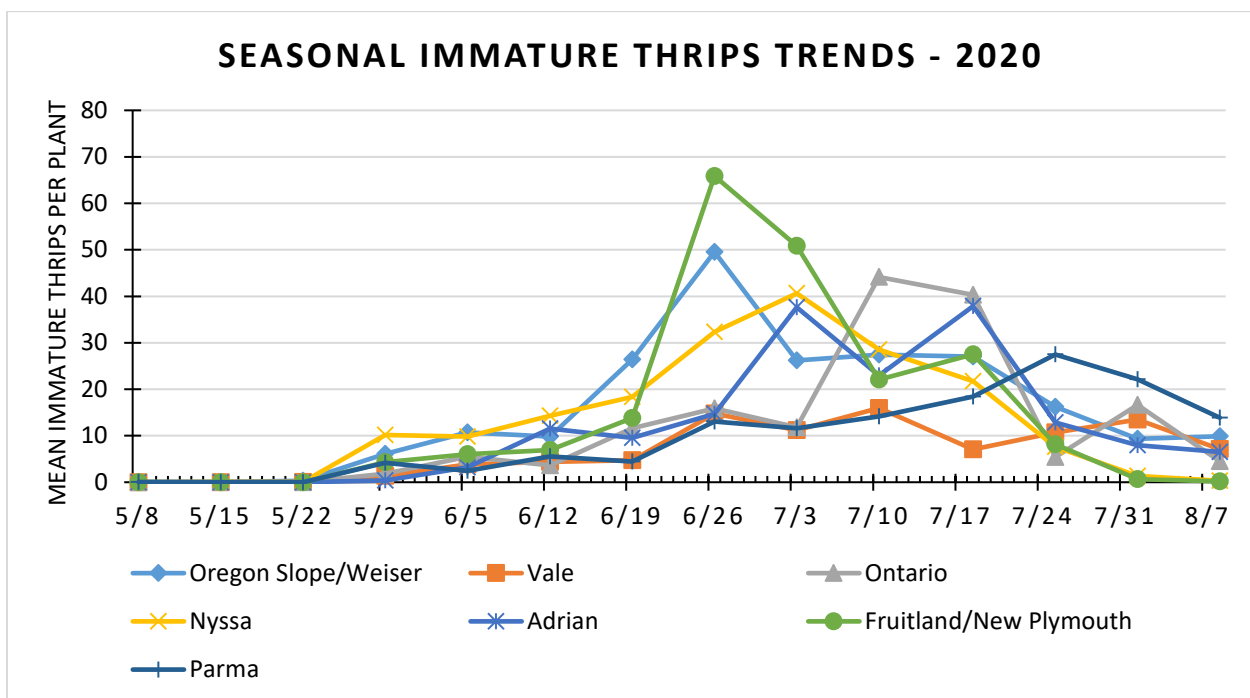
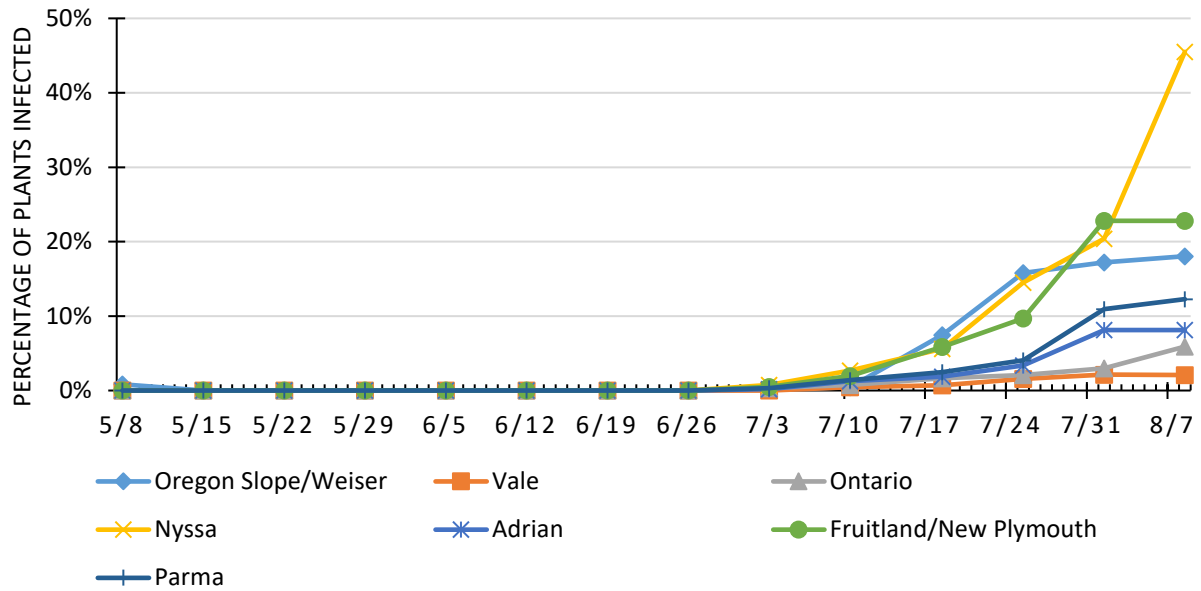


Figure 6. Seasonal trends of immature thrips in onion growing areas of the Treasure Valley during 2020.

## INCIDENCE OF IRIS YELLOW SPOT VIRUS - 2020



*Figure 7. Seasonal incidence of iris yellow spot virus in commercial onion fields from different growing areas of the Treasure Valley during 2020. Values are the mean percentage of infected plants per field for each area.*

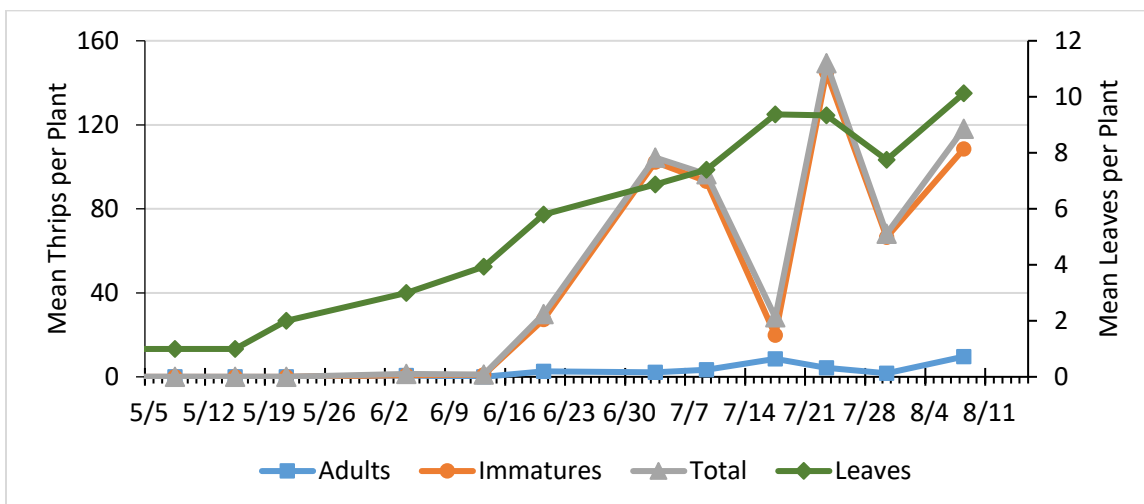
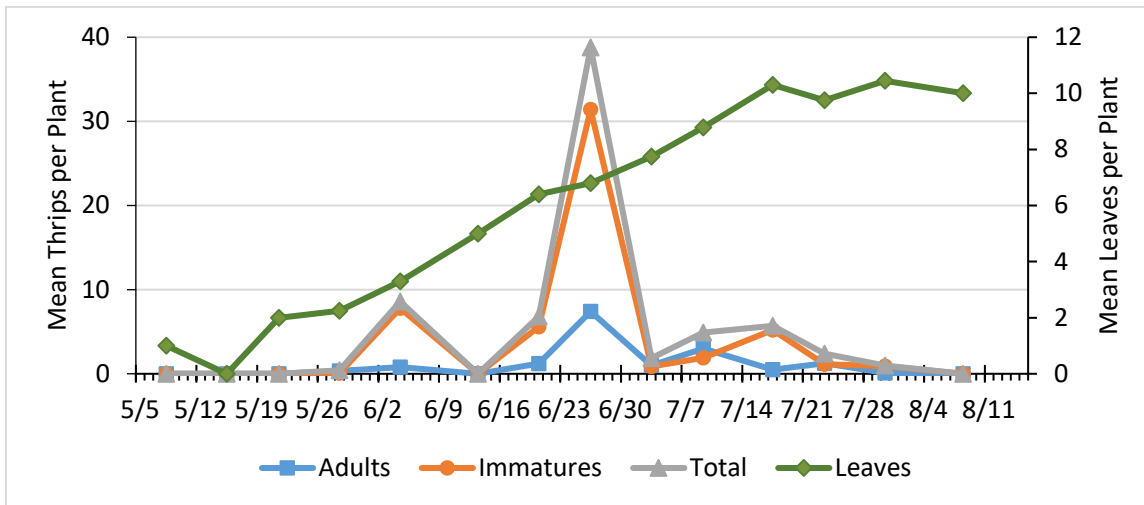
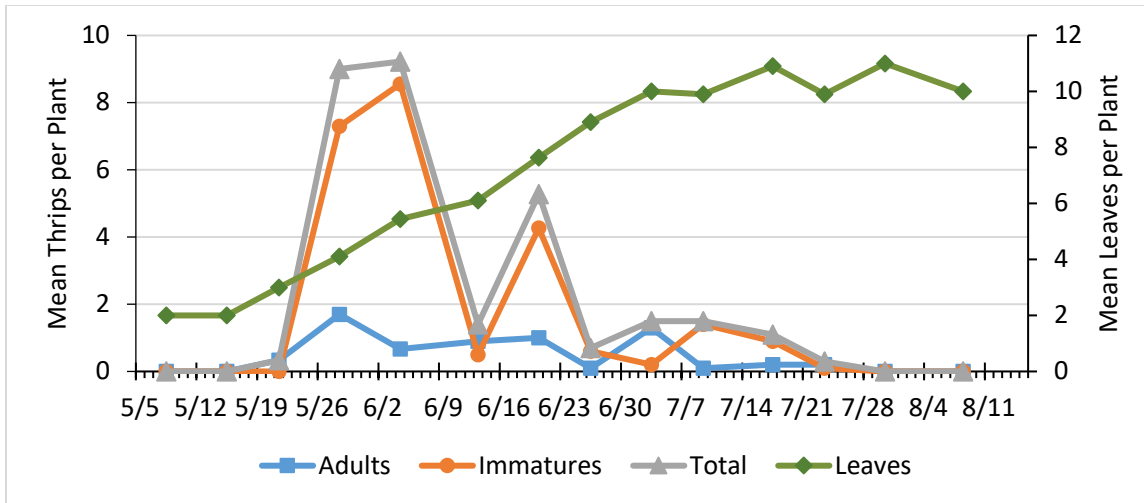


Figure 8. Representative trends for individual fields in the Treasure Valley during the 2020 growing season. Note the different scales for numbers of thrips on each graph.