

## Background

- ❖ Thrips are challenging to manage with chemical controls, are at high risk for developing resistance, and are expected to increase in pest pressure with climate change.
- ❖ Mass trapping for thrips has been found effective in the UK in polytunnel strawberries<sup>1</sup>.
- ❖ Two different thrips trapping methods were trialed under local conditions in the Fraser Valley in strawberries and cabbage, to assess potential as non-chemical management tools.

<sup>1</sup>Sampson, C. and Kirk, W.D.J. 2013. Can mass trapping reduce thrips damage and is it economically viable? Management of the western flower thrips in strawberry. PLoS ONE 8:e80787.

## Methods

- ❖ 2 day-neutral strawberry fields (Abbotsford and Delta), 2 green cabbage fields (Delta)
- ❖ 3 trapping treatments:
  1. Untreated control
  2. Sticky traps only
  3. Sticky traps + aggregation pheromone lures
- ❖ 3 replicates per treatment
- ❖ Traps 10 cm x 25 cm in size, density ranging from one per 5.6 m<sup>2</sup> to one per 10 m<sup>2</sup>
- ❖ Blue traps in strawberries, yellow traps in cabbage



Figure 1: Left: Blue sticky card with pheromone lure set up in strawberry field. Right: Eight yellow sticky cards set up within one plot (8 m x 10 m) in cabbage field.

- ❖ Weekly assessments of: thrips on traps, thrips on plants, and feeding damage on fruit/heads

## Results – Strawberries

- ❖ There were no differences in thrips catches between the two trap types (traps only vs. traps plus pheromone lures).
- ❖ Although traps caught thousands of thrips per plot, no differences in thrips on flowers or damage on fruit were observed across treatments.
- ❖ Thrips pressure was higher overall in the Abbotsford field than the Delta field.
- ❖ The predominant thrips species found on flowers were *Frankliniella occidentalis* (western flower thrips).



Figure 2: Left: One thrips (circled) within a strawberry flower. Right: Thrips damage on white strawberry fruit.

## Results – Cabbage

- ❖ One cabbage field showed higher trap catches of thrips with the addition of aggregation pheromone lures compared to sticky traps alone.
- ❖ The other field did not show this difference between trapping methods.
- ❖ No other trap method effects were detected in thrips numbers on plants or thrips damage severity.
- ❖ The predominant thrips species found on cabbage heads were *Thrips fuscipennis* (rose thrips).



Figure 3: Examples of thrips damage on cabbage heads.

## Conclusions

- ❖ Trapping effects on thrips were not observed in either crop, likely due to insufficient trapping surface area.
- ❖ There is potential for the aggregation pheromone lure to enhance yellow sticky card trapping for thrips in field cabbage.
- ❖ The lack of observed trap effects on thrips in both crops indicates that the trapping methods used did not justify the costs of implementation (i.e. supplies and maintenance).
- ❖ Further investigation of mass trapping in field strawberries and cabbage depends on using a feasible method that increases sticky trap surface area.

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