

Introduction:

Spotted Wing Drosophila (*Drosophila suzukii*), an invasive vinegar fly (Family Drosophilidae), can cause significant injury and yield loss in soft skinned-fruits, particularly berry crops. Fruits are at risk of infestation as they begin to ripen and through harvest. While males are easily identified by a single black dot on their forewings, identification of females is often labour intensive, time consuming, or near impossible when desiccated on sticky cards. Though various commercial treatments for this pest are available, there is contradiction surrounding which monitoring tools are most effective.

Objectives:

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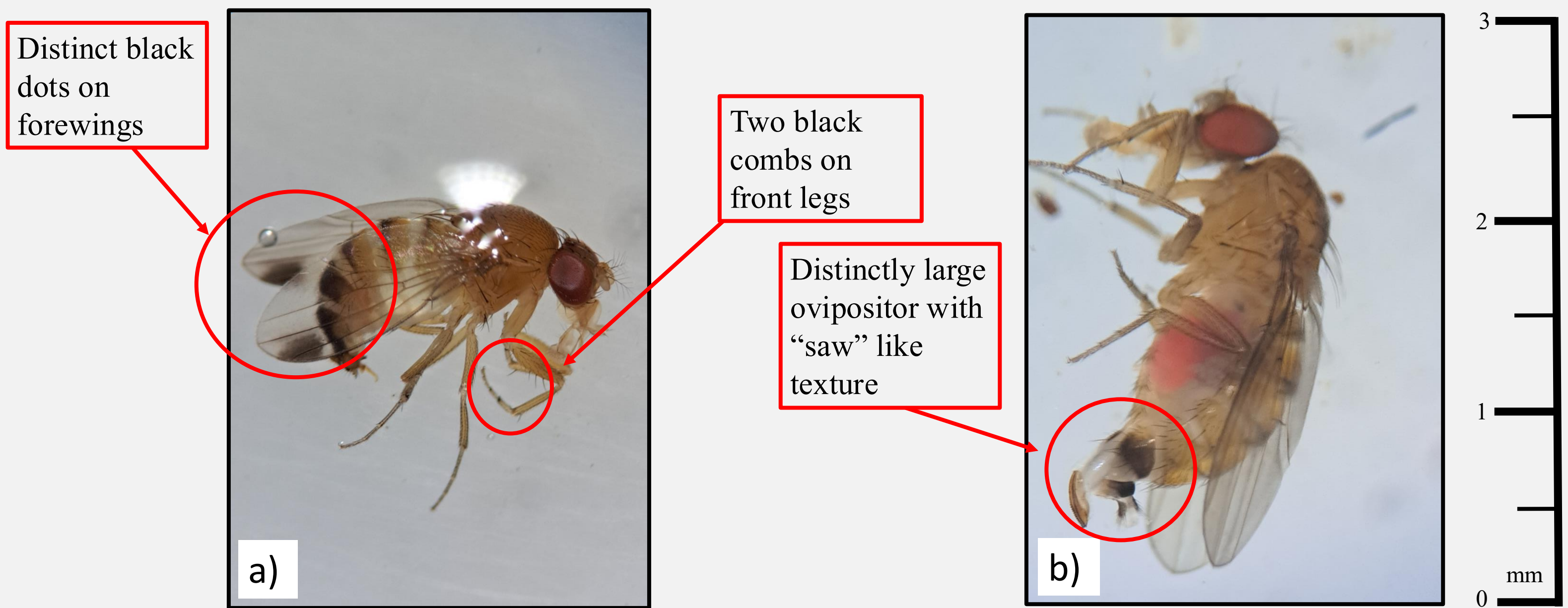


Figure 1. a) male spotted wing drosophila and b) female spotted wing drosophila (abdomen red because of recent raspberry consumption)

Materials and Methods:

Traps were placed at 4 farms growing raspberries, cv. ‘Nova’, ‘Prelude’, and ‘Algonquin’ (all early cv.), across southern Ontario (Milton, Puslinch, Delhi, and Straffordville). Each site had 4 replicates, and each replicate contained one of each of the three treatments; **red sticky card**, **yellow sticky card**, and **liquid trap**. Cages were placed around sticky cards to prevent large insect and small vertebrate bycatch, particularly birds. Previous work done by Hannah Fraser (pers. Comm.), Horticulture Entomologist for OMAFA, indicates cages do not affect catch numbers. Randomized treatments within a replicate were placed 10m apart and replicates were spaced 20m apart. Traps and lures were **placed at sites on May 27 (unopened buds)** and were collected ~ bi-weekly until **July 14 (harvest underway)**, with lures being replaced once on June 23. Males from each trap were counted following collection.

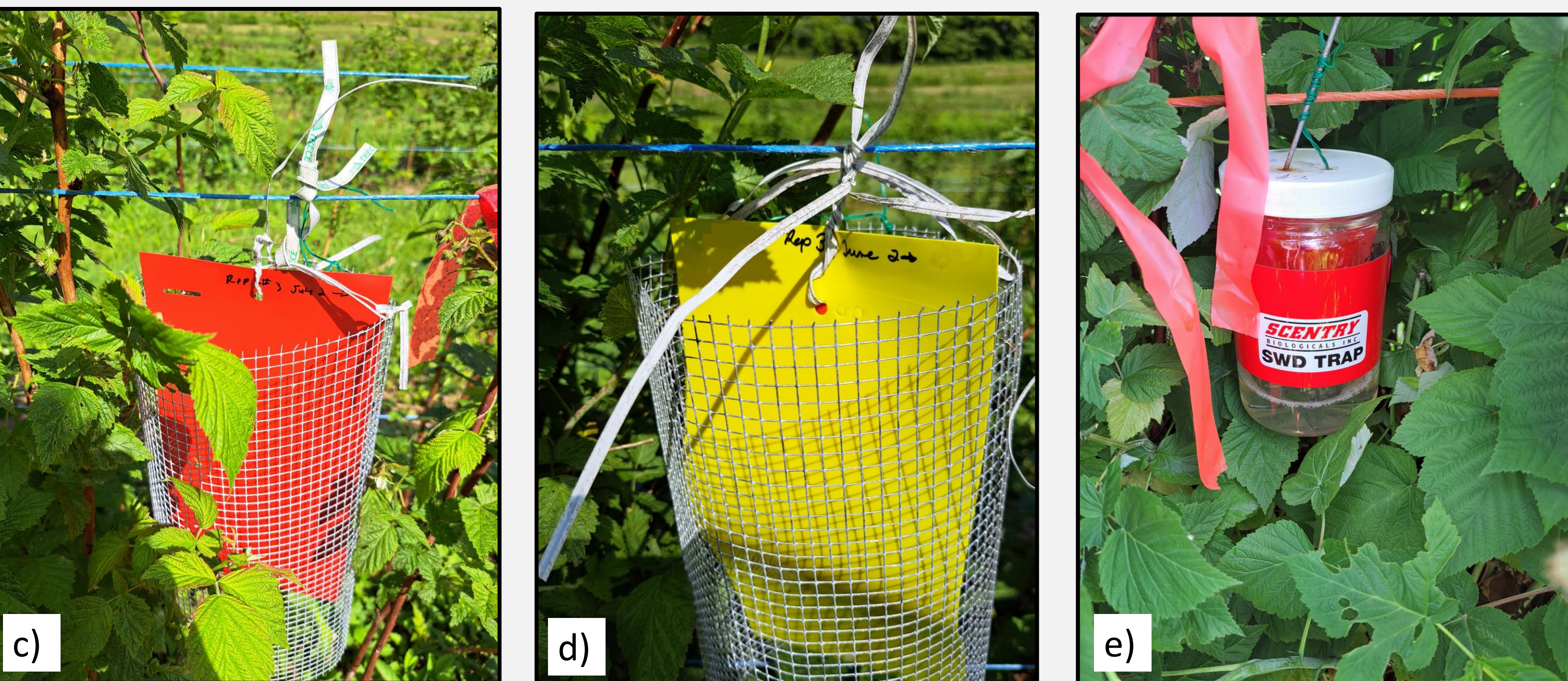


Figure 2. c) red sticky card (TRÉCÉ PHEROCON RED Dry Touch (30 x 15 cm) / Trap d) yellow sticky card (TRÉCÉ YELLOW Dry Touch (30 x 15 cm) / Trap), and e) liquid trap (TRÉCÉ PHEROCO SWD traps). Each treatment utilized a commercial grade volatile lure (TRÉCÉ PHEROCON SWD PEEL-PAK Broad Spectrum lure) that was tied to the interior of the cage or inside the lid (depending on treatment).

Results:

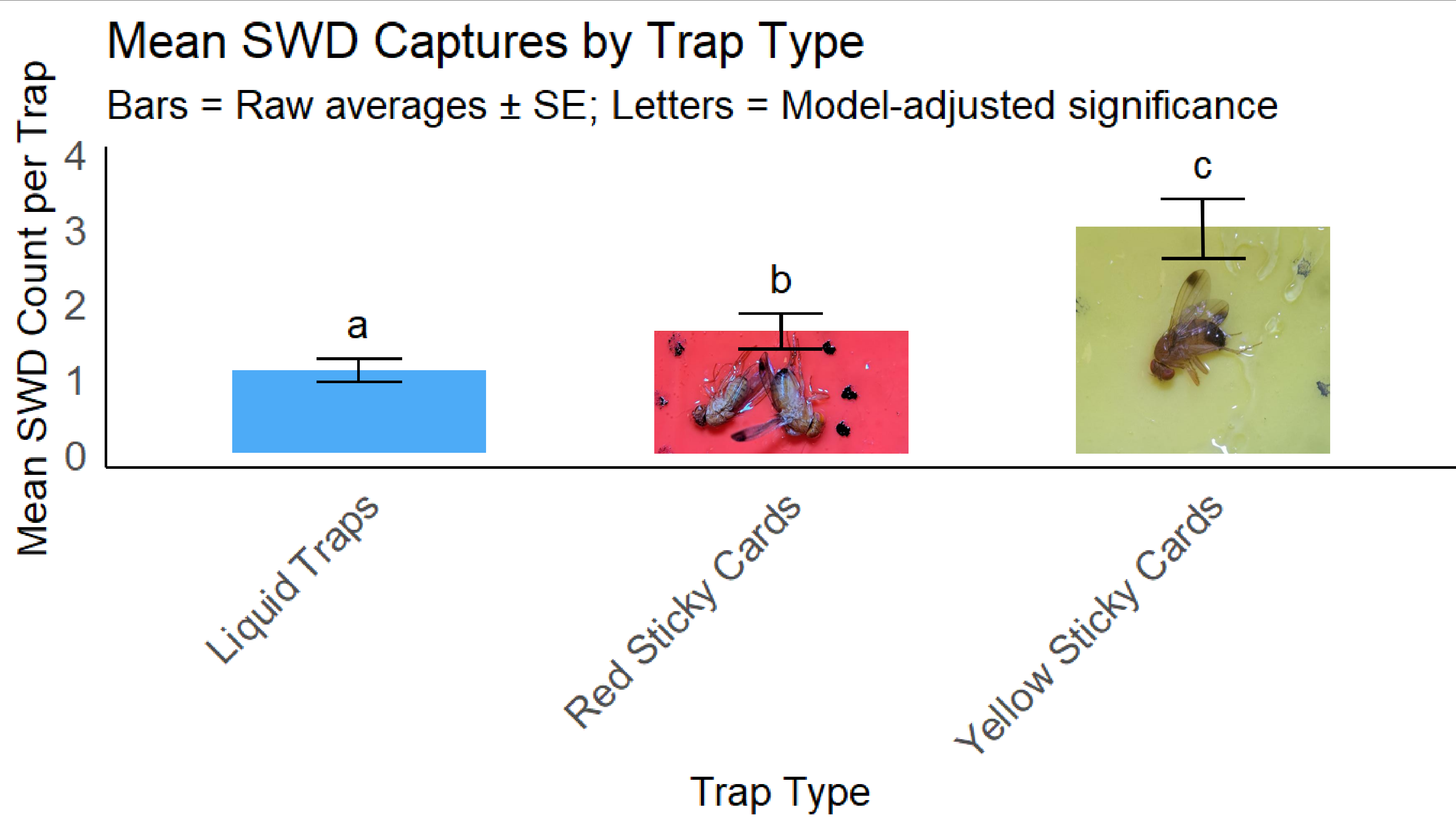


Figure 3. Mean adult male count per trap for each trap type. Different letters indicate a statistical difference (significance at $p < 0.05$). Images of adult males on the respective trap included in the bars to demonstrate how the males appear on the two sticky traps. With ones on the yellow sticky cards being much more noticeable.

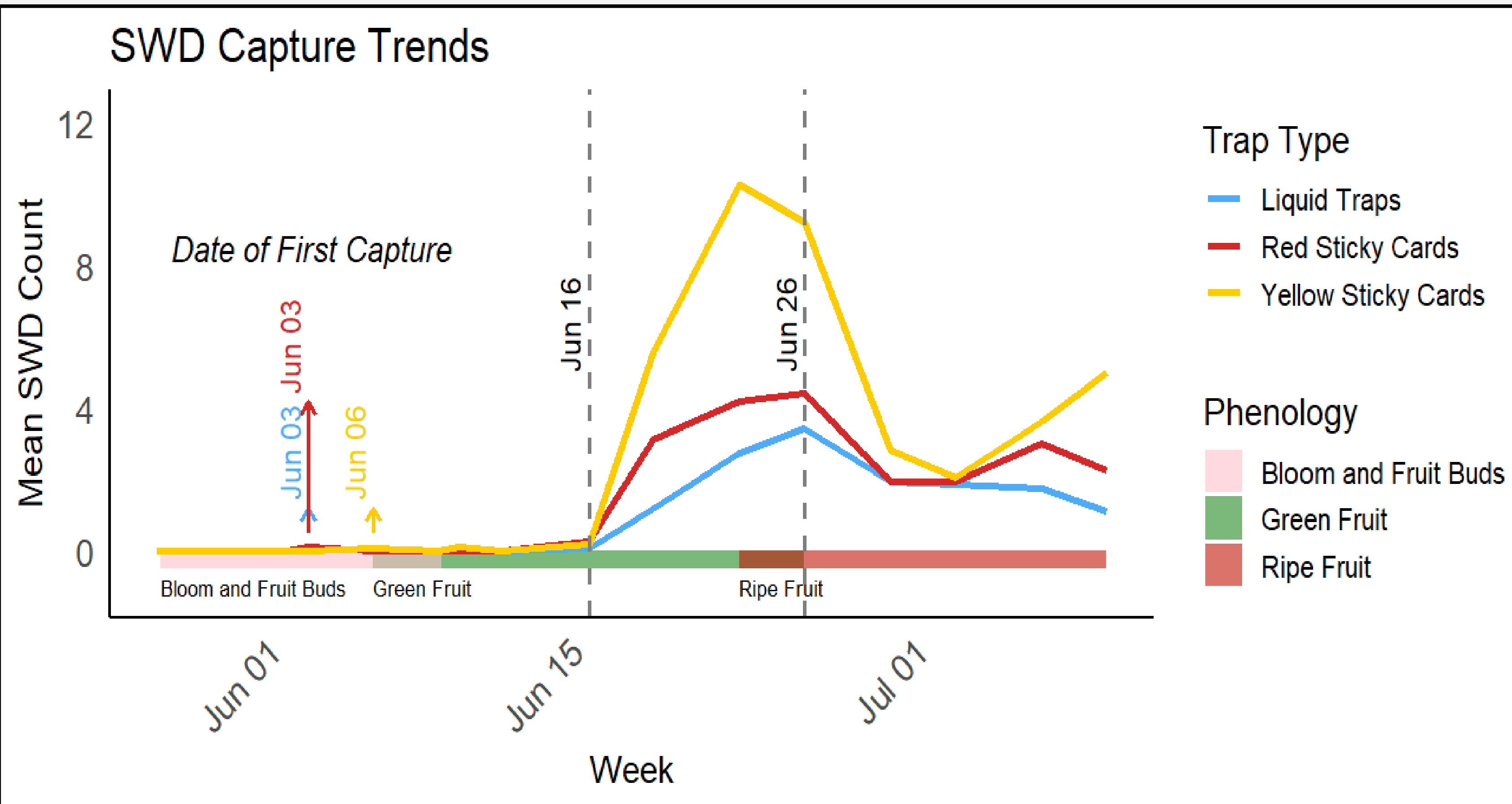


Figure 4. Mean adult male count for each trap type over the course of the trials overlayed with the observed respective crop phenology for that time. Date of first capture for each trap type across all the sites is noted in addition to the major abundance influx and efflux dates occurring June 16 and June 26. The efflux event on June 26 is theorized to be a result of the unfavorable hot and dry conditions that had persisted that week followed by an influx upon the arrival or wetter and cooler conditions.

Discussion:

- 1) Is there a significant difference in first capture dates?**
NO! After running a statistical analysis, there was no significant difference in any of the three traps’ first capture dates.
 - 2) Is there a difference in sustained captures?**
YES! Compared to the other two treatments, the yellow sticky cards consistently caught statistically more adults
 - 3) Is there a statistical difference in captures during adult population upswing?**
YES! Yellow sticky cards showed increased sensitivity to the adult population upswing in mid-June compared to both other treatments!
- The use of these trapping tools are critical for growers implementing IPM practices that include the use of insecticide sprays. There is a particular importance for tracking the upswing in adult abundance, the optimal time to begin spraying, best indicated through the use of yellow sticky cards

Acknowledgments:

This assessment was funded by OMAFA. Thank you to Leah Ritcey-Thorpe who assisted with the data visualization as well as the grower participants who graciously let us use their sites to conduct treatments.