

# Potential of Banker Plants for Supporting Biological Control Agents of Chilli Thrips in Strawberry Fields, Part 2

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## Summary

**Banker plants grown near strawberry plant have the capability of supporting natural enemies that can aid in chilli thrips suppression. Our results show that some of the banker plants tested have the potential to attract beneficial insects that can play a role in chilli thrips suppression in strawberries.**

## Introduction

As part of Integrated Pest Management (IPM) practices, strawberry growers in Florida rely on the use of synthetic insecticides and predatory mite augmentation releases to manage chilli thrips.

An additional approach that can be incorporated into the arsenal for managing chilli thrips is the utilization of banker plants. We suggest the incorporation of banker plants because they introduce two new IPM approaches: cultural control and biological control.

Banker plants are plants grown near agricultural crops, providing essential food resources, refugia, and substrate for the reproduction of naturally occurring predators. By doing so, banker crops effectively increase the population and longevity of these beneficial predators.

By facilitating the early buildup of natural predators, banker crops play a crucial role in suppressing early pest outbreaks. This not only benefits naturally occurring predators but also enhances the effectiveness of predatory insects and mites used as augmentative biological control agents. The use of banker crops can result in season-long suppression of thrips, eliminating the need for additional releases of biological control agents.

## Methods

For trapping and assessing natural enemies, yellow sticky cards were installed into strawberries rows and banker plants during 2021-2022. Sticky cards were replaced every two weeks. Sticky-cards collected from the field were individually placed in a sealed plastic Ziplock bag and stored in the freezer until processing.

Natural enemies trapped on the sticky cards were counted and identified using stereomicroscope in the laboratory (**Figure 1**). The collection and assessment of natural enemies was conducted during the entire strawberry field season.

This was then followed by estimation of the abundance of natural enemies found on the sticky cards. Insect abundance refers to the population density or number of insects present in a particular area. It is a measurement of the overall quantity of insects (in this case beneficial insects) within a given habitat (banker plant).

**Figure 1.** Some of the beneficial insects found in the banker plants.

Sixspotted thrips  
(*Scolothrips* spp.)



Photo: UC IPM

Minute pirate bugs  
(*Orius* spp.)



Photo: Planet natural

Big eyed bug  
(*Geocoris* spp.)

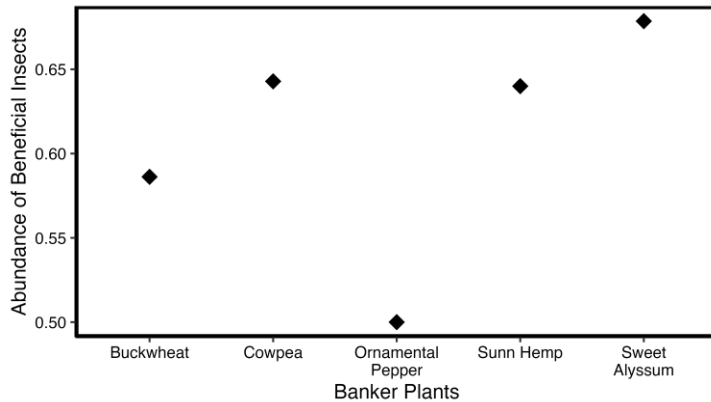


Photo: Lyle Buss, UF

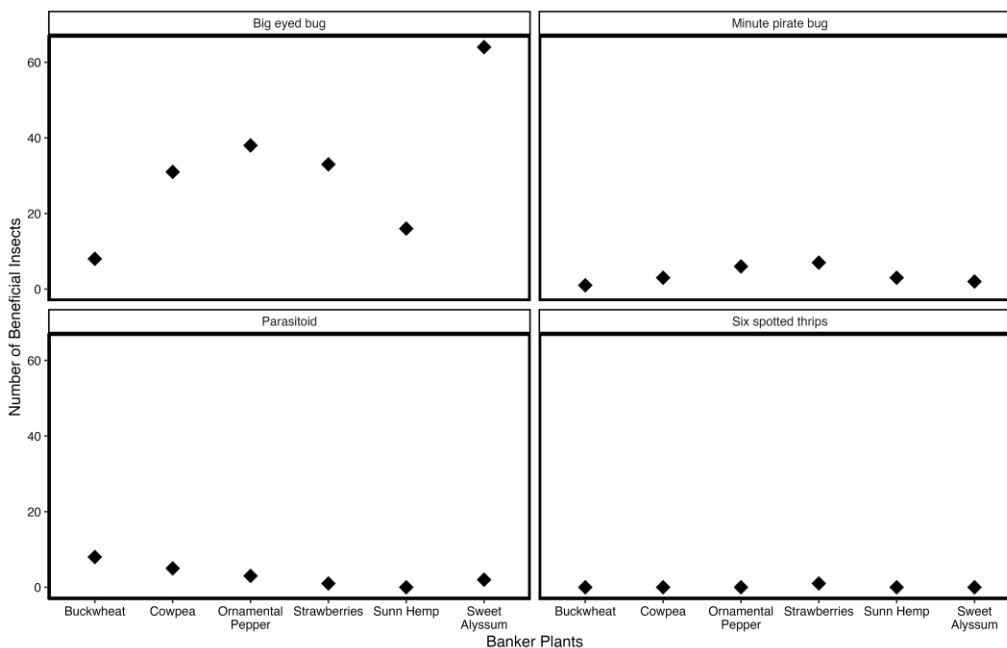
## Results

### Abundance of Beneficial Insects Found

We identified four groups of beneficial insects that included six-spotted thrips, minute pirate bugs, big eyed bugs, and parasitoids (both ichneumon and braconid wasps). Sweet alyssum had the highest abundance of these beneficial insects followed by cowpea and buckwheat, while ornamental pepper had the lowest abundance of beneficial insect (**Fig. 2**). In addition, big eyed bugs were the most abundant beneficials, with sweet alyssum having the highest number. The number of other beneficials observed was relatively low in all banker plants and strawberries (**Fig. 3**).



**Figure 2.** Relative abundance of beneficial insects collected throughout the season.



**Figure 2.** Number of beneficial insects captured per treatment.

## Takeaways

- Big-eyed bug and minute pirate bug occurred in banker crops, which is useful for thrips management.
- Sweet alyssum flowered throughout strawberry season and was most attractive for big-eyed bugs.

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