

Assessing the Performance of Strawberry Cultivars against Chilli Thrips (*Scirtothrips dorsalis* Hood) through Host Plant Resistance

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Summary

In 2022-23 season, seven commercial strawberry cultivars were evaluated in the field for their resistance against chilli thrips. Among the seven cultivars, Sweet Sensation® ‘Florida 127’ had the lowest chilli thrips count from the trifoliolate. ‘Florida Radiance’ produced highest marketable yield than the rest of the cultivars throughout the season.

Objectives

The objective of this proposal was to evaluate strawberry cultivars for their resistant traits against chilli thrips.

Methods

Evaluate strawberry cultivars for their resistant traits against chilli thrips:

The study was conducted at Gulf Coast Research and Education Center (27.712490°, -82.302322°) during the strawberry season 2022-2023. Seven commercial strawberry cultivars, ‘Florida Brilliance’ (Brill), Sweet Sensation® ‘Florida127’ (Sens), ‘Florida Medallion’™ (Med), ‘Florida Pearl’™, ‘Strawberry Festival’ (Fest), ‘Florida Beauty’, ‘Florida Radiance’ (Rad) were assessed for their host plant resistance characteristics. Twenty bare root transplants of each cultivar were planted on each plot. The plots were 30 ft long and had a 15 ft buffer in between. The experimental design was a randomized complete block, replicated eight times (Fig. 1). No insecticides were applied other than DiPel for worms. Samples were taken biweekly, throughout the season. Eight randomly selected young leaves from each plot were collected and washed in 70% ethanol. Thrips species

were identified using taxonomic keys (Cluever and Smith 2017).

Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
Brilliance		Pearl		Beauty		Festival	
	Sensation		Medallion		Sensation		Radiance
Radiance		Medallion		Brilliance		Sensation	
	Festival		Pearl		Festival		Pearl
Medallion		Beauty		Medallion		Brilliance	
	Brilliance		Radiance		Radiance		Festival
Pearl		Festival		Sensation		Medallion	
	Beauty		Beauty		Pearl		Sensation
Sensation		Radiance		Pearl		Beauty	
	Medallion		Festival		Medallion		Medallion
Festival		Sensation		Radiance		Pearl	
	Pearl		Brilliance		Brilliance		Beauty
Beauty		Brilliance		Festival		Radiance	
	Radiance		Sensation		Beauty		Brilliance

Figure 1: Plot design in the field with seven cultivars.

Marketable fruit yield: Fruits were harvested every week. Marketable fruits from each cultivar were weighed in grams. The damaged fruits were discarded before weighing.

All the data were analyzed on SAS® on Demand for Academics web platform (SAS Institute Inc, Cary, NC, USA).

Current Project Status:

The field study will be repeated with these seven cultivars of strawberry during season 2023-2024.

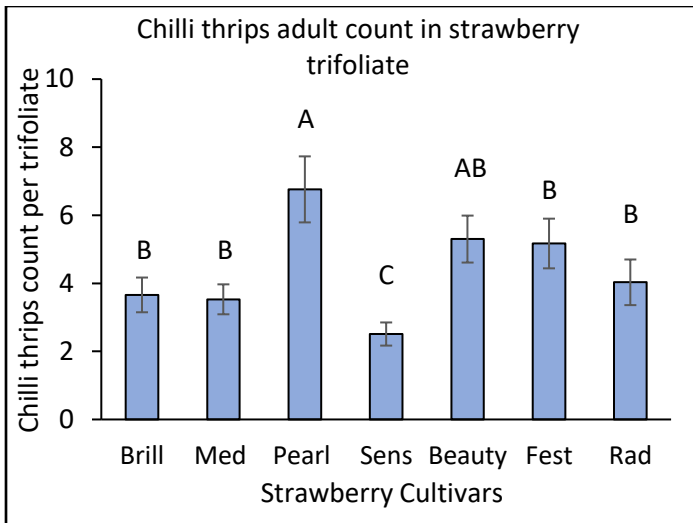


Figure 2: Adult chilli thrips count from the trifoliolate.

Sweet Sensation ‘Florida 127’ had significantly lower number of chilli thrips adults compared to the rest. (p -value<0.0001). ‘Florida Pearl’ had the highest number of chilli thrips from the trifoliolates.

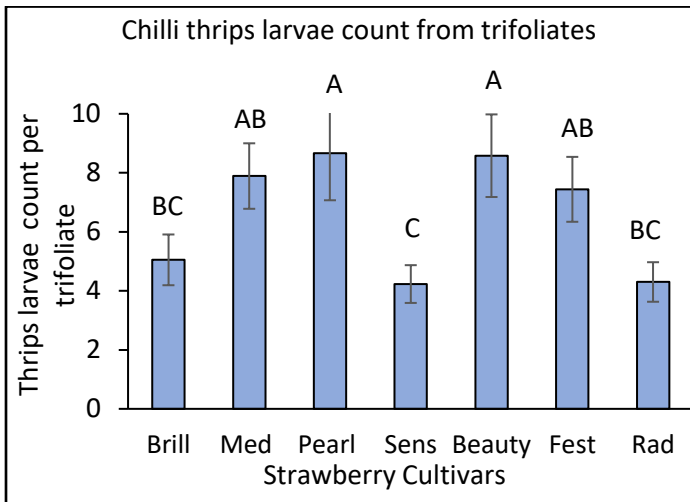


Figure 3: Chilli thrips larval count from trifoliolates.

Sweet Sensation ‘Florida 127’ had a significantly lower number of larvae in trifoliolates compared to ‘Florida Pearl’, ‘Florida Beauty’, ‘Florida Medallion’, and ‘Florida Festival’ (p -value< 0.0001). ‘Florida Brilliance’ and ‘Florida Radiance’ also had significantly lower larval count compared to ‘Florida Pearl’ and ‘Florida Beauty’.

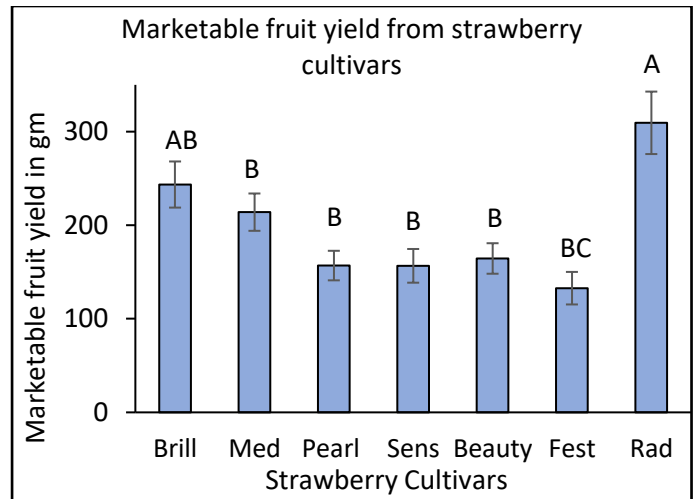


Figure 4: Marketable fruit yield (gm).

In case of marketable fruit yield, ‘Florida Radiance’ produced significantly high yield compared to all other cultivars except for ‘Florida Brilliance’ (p -value< 0.0001).

Takeaways

Sweet Sensation ‘Florida 127’, ‘Florida Brilliance’, and ‘Florida Radiance’ showed higher resistance to chilli thrips.

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