

# Broad Mites in Field and High Tunnel Blackberries

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# Broad Mite

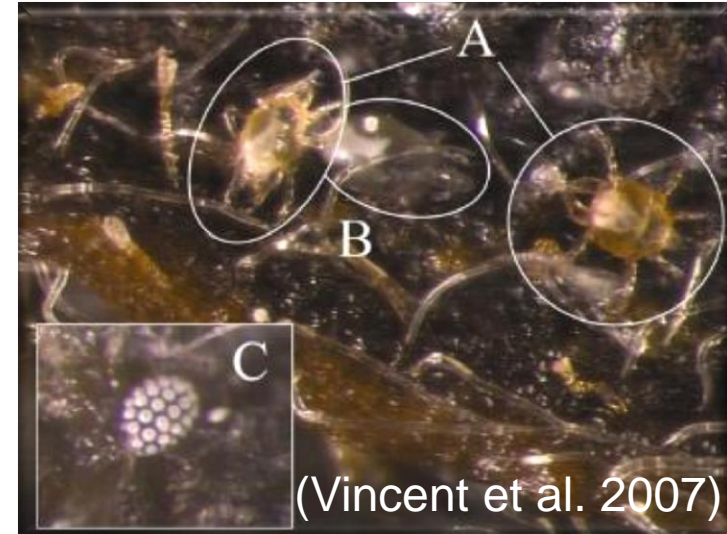
(white mite, yellow tea mite, yellow jute mite)

- *Polyphagotarsonemus latus* (Banks)
- Arachnida: Acari: Tarsonemidae

## Identification:

- A) Adult has white, dorsal stripe
- B) Male carries immature female
- C) Egg has many white, raised spots

Distribution: world-wide in tropical and subtropical areas and greenhouses – now on citrus



# Cultivar Susceptibility

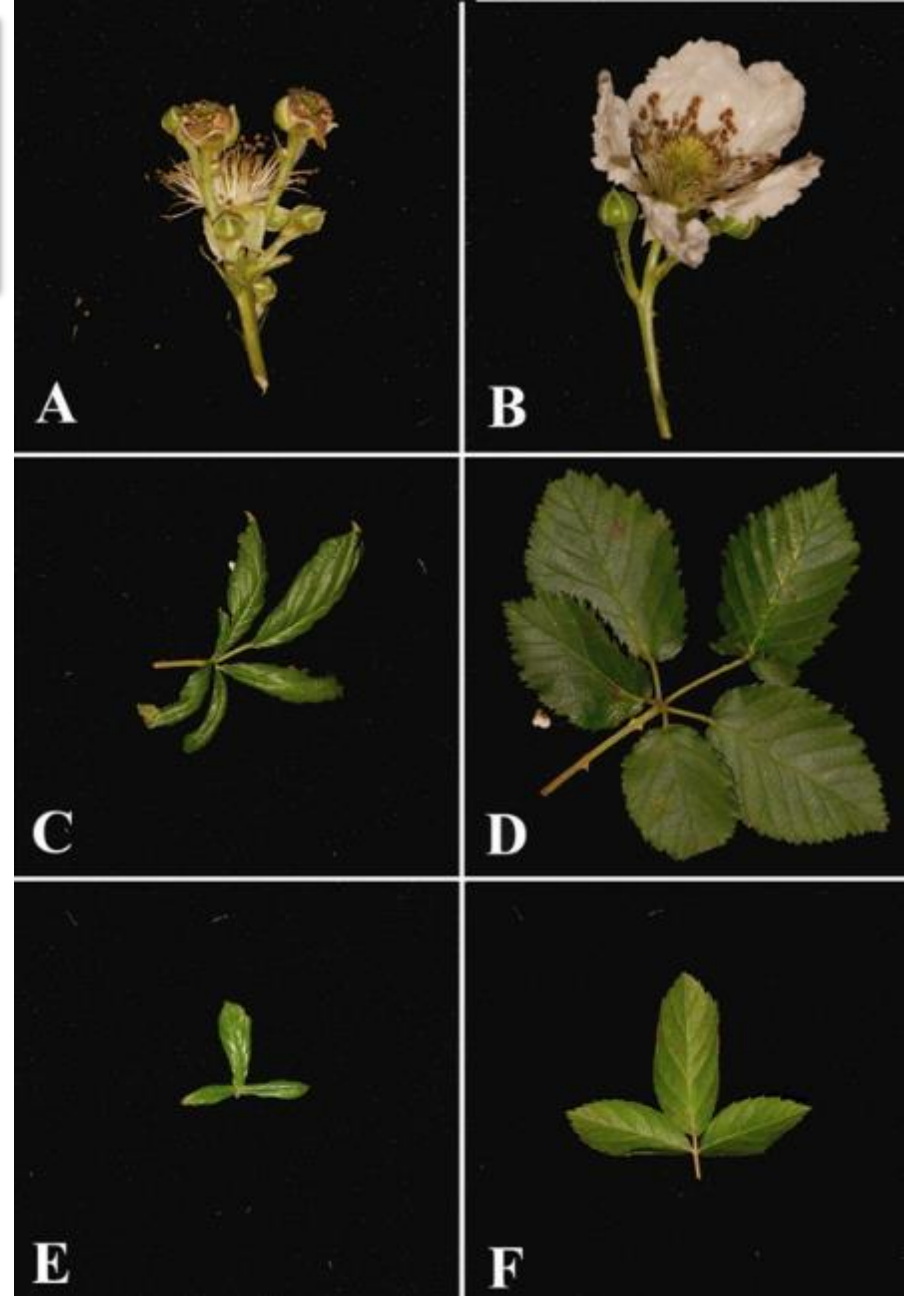
Dr. John Clark (bramble breeder at the University of Arkansas) reported,

- *“I went through all the advanced blackberry selections this afternoon Sunday Sept. 13 (2015). I saw broad mite damage across all selections and varieties, with no exceptions in some degree of infestation. I could see no genetic differences among the genotypes, they seemed to all have damage, or more importantly none were without damage.*
- *...I don't think there is a genetic difference in susceptibility or any resistance as best I can tell.*
- *...But that said, this is getting to be worse of a problem. The damage will impact performance of the plants next year, I have no doubt.”*

**Terminal leaves and flowers  
damaged: stunting,  
upward & downward cupping**



**Bronzed  
appearance**





# Kills Laterals and Terminals



Healthy lateral

A close-up photograph of a green rose stem with several sharp thorns. A healthy, green lateral branch is shown emerging from the main stem at an angle. The leaves on the lateral branch are vibrant green and appear to be in the early stages of development.



Dead lateral

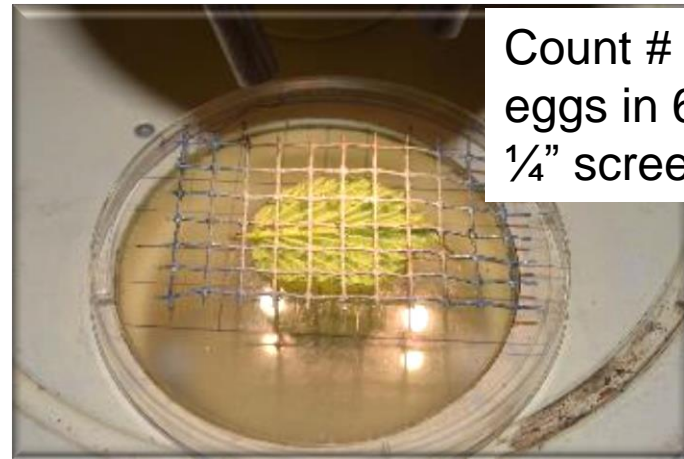
A close-up photograph of a green rose stem with several sharp thorns. A lateral branch is shown emerging from the main stem, but it is dead and brown. The branch is brittle and has a shriveled appearance, indicating it has died.



Dead leaves near tip

A photograph of a rose stem with several sharp thorns. The leaves near the tip of the stem are dead and brown, while the leaves further down the stem are green. This indicates that the terminal and lateral growth has been killed, leaving only the basal leaves alive.

# Monitoring Broad Mite Densities

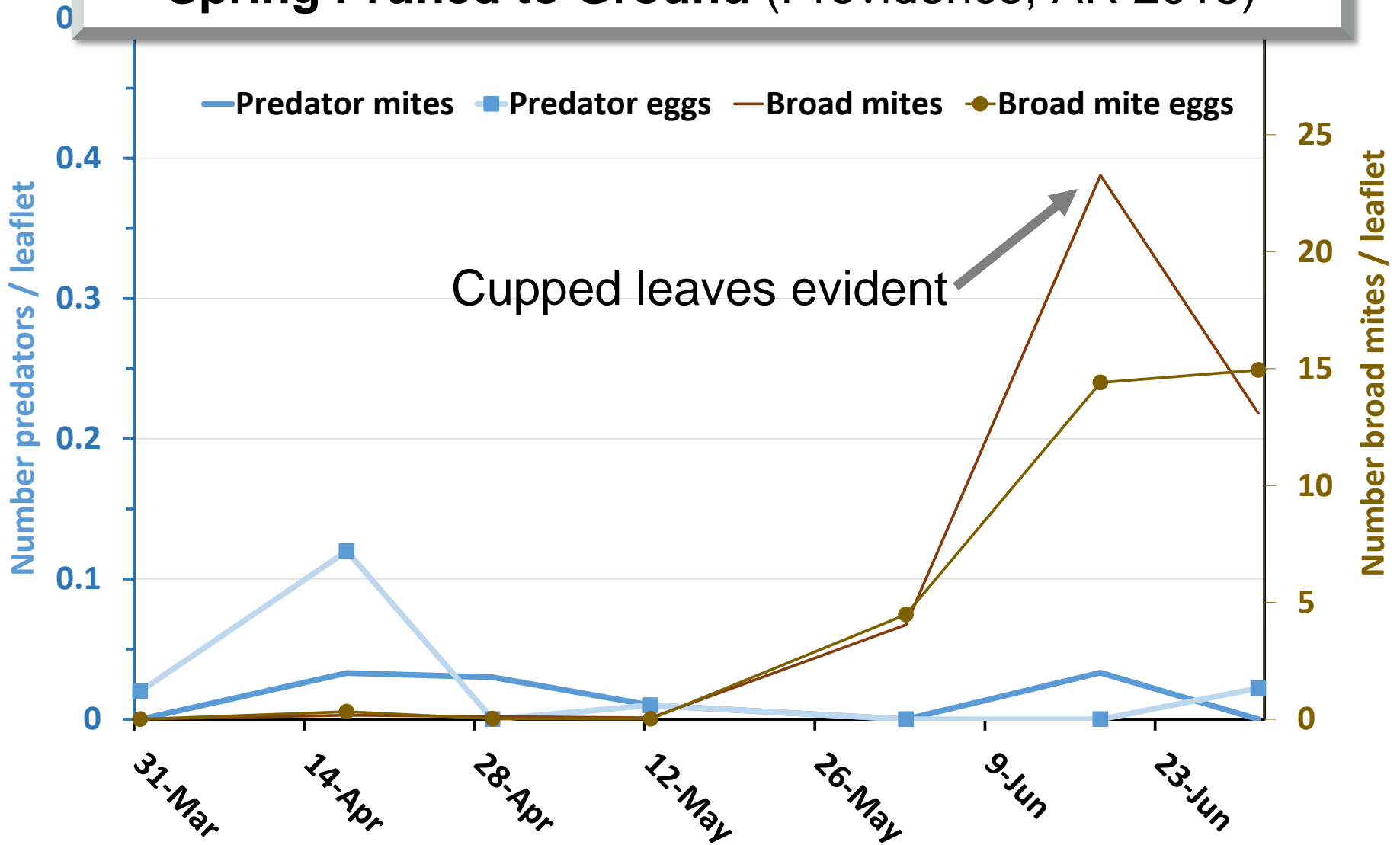


Count # mites and eggs in 6 squares of 1/4" screen per leaflet

10 leaflets from 2<sup>nd</sup> expanded terminal leaf



# Broad Mites & Phytoseiid Mites in 'Prime-Ark® 45' Spring Pruned to Ground (Providence, AR 2015)



Cupped leaves evident





# Evaluating Miticides

- Location: Providence, AR
- Treated: 22 July 2015
- 10 plant plots Prime-Ark45
- RCB, 3 replicates
- Gas powered, air blast sprayer (Stihl Inc.)





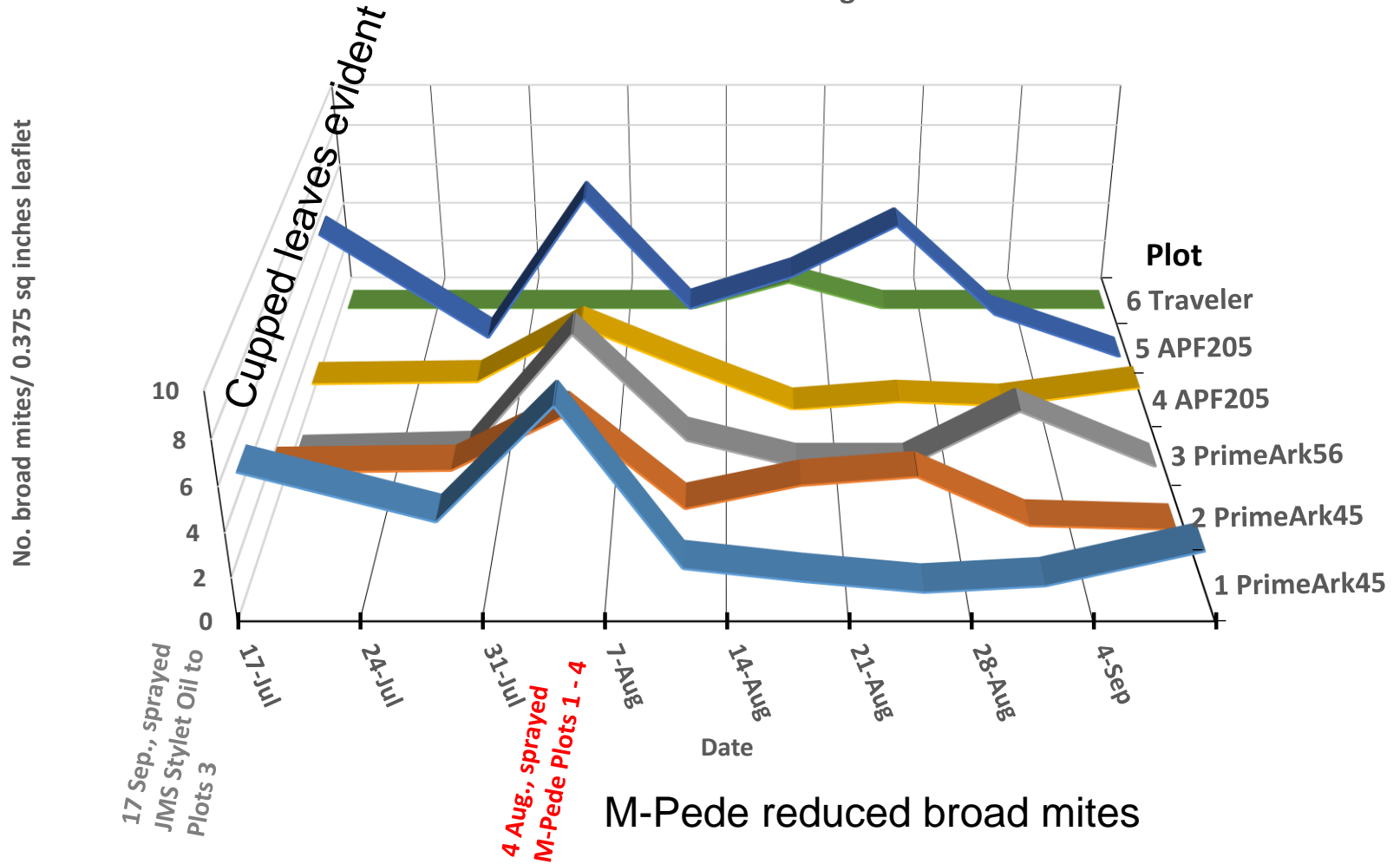
# Miticide Efficacy Against Broad Mite in Field

(Providence, AR – applied on 15 July and  
JMS Stylet Oil applied 22 July, 2015)

Treatment/ Formulation	All Actives/leaflet			
	15-Jul	22-Jul	29-Jul	8-Aug
<u>Agri-Mek</u>	11.5a	0.5d	8.5a	13.5a
<u>Apta</u>	15.4a	1.5cd	11.8a	20.2a
JMS 1% (applied 7/22)	17.8a	18.3ab	12.7a	12.1a
Magister	13.6a	0.9d	6.7a	20.7a
<u>M-Pede</u>	10.7a	15.6b	17.8a	18.5a
Zeal	11.9a	12.2bc	21.1a	20.3a
Check	15.6a	27.0a	26.2a	21.7a
	NS	$P < 0.05$	NS	NS

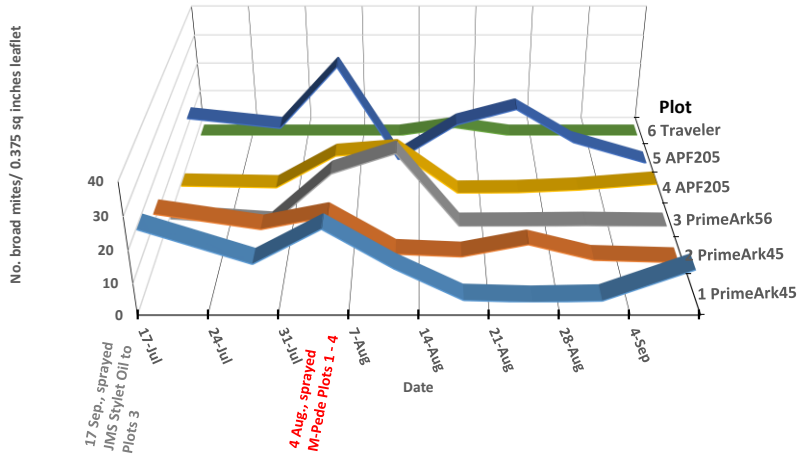
# Broad Mites in High Tunnel

Broad Mite Females High Tunnel 2015

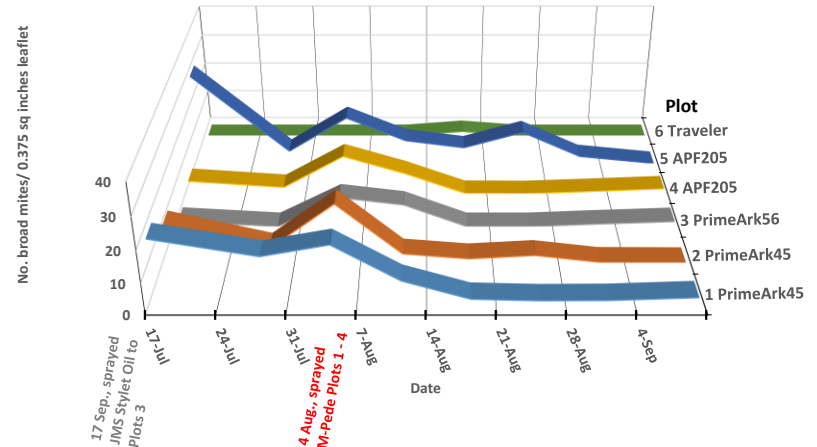


# Broad Mites in High Tunnel

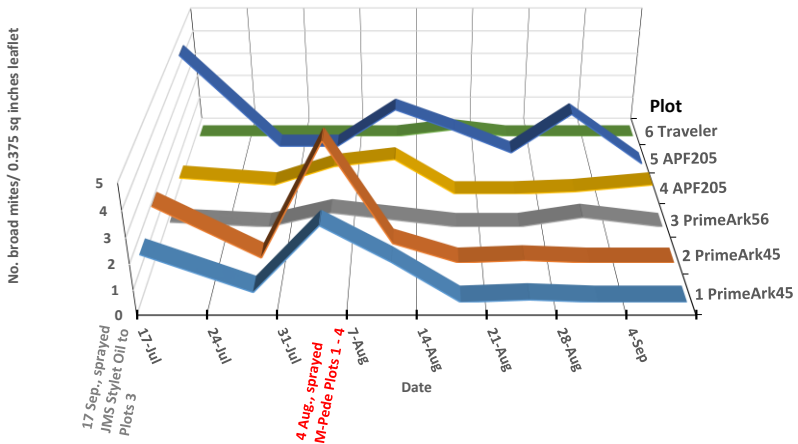
Broad Mite Eggs High Tunnel 2015



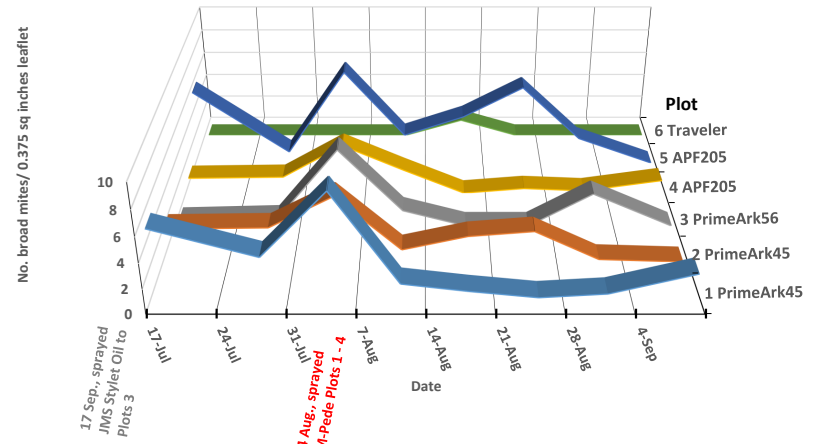
Broad Mite Nymphs High Tunnel 2015



Broad Mite Males High Tunnel 2015



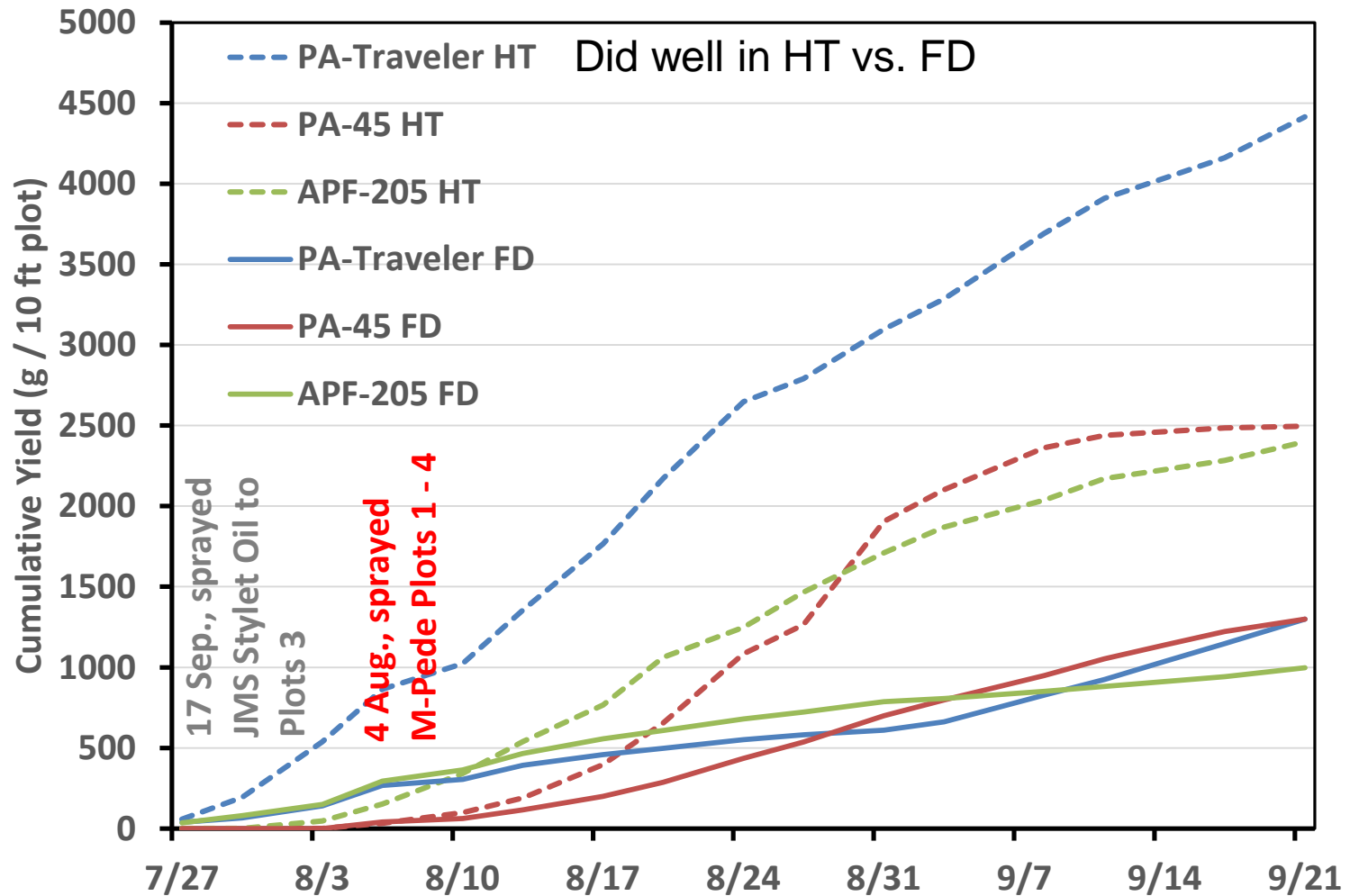
Broad Mite Females High Tunnel 2015



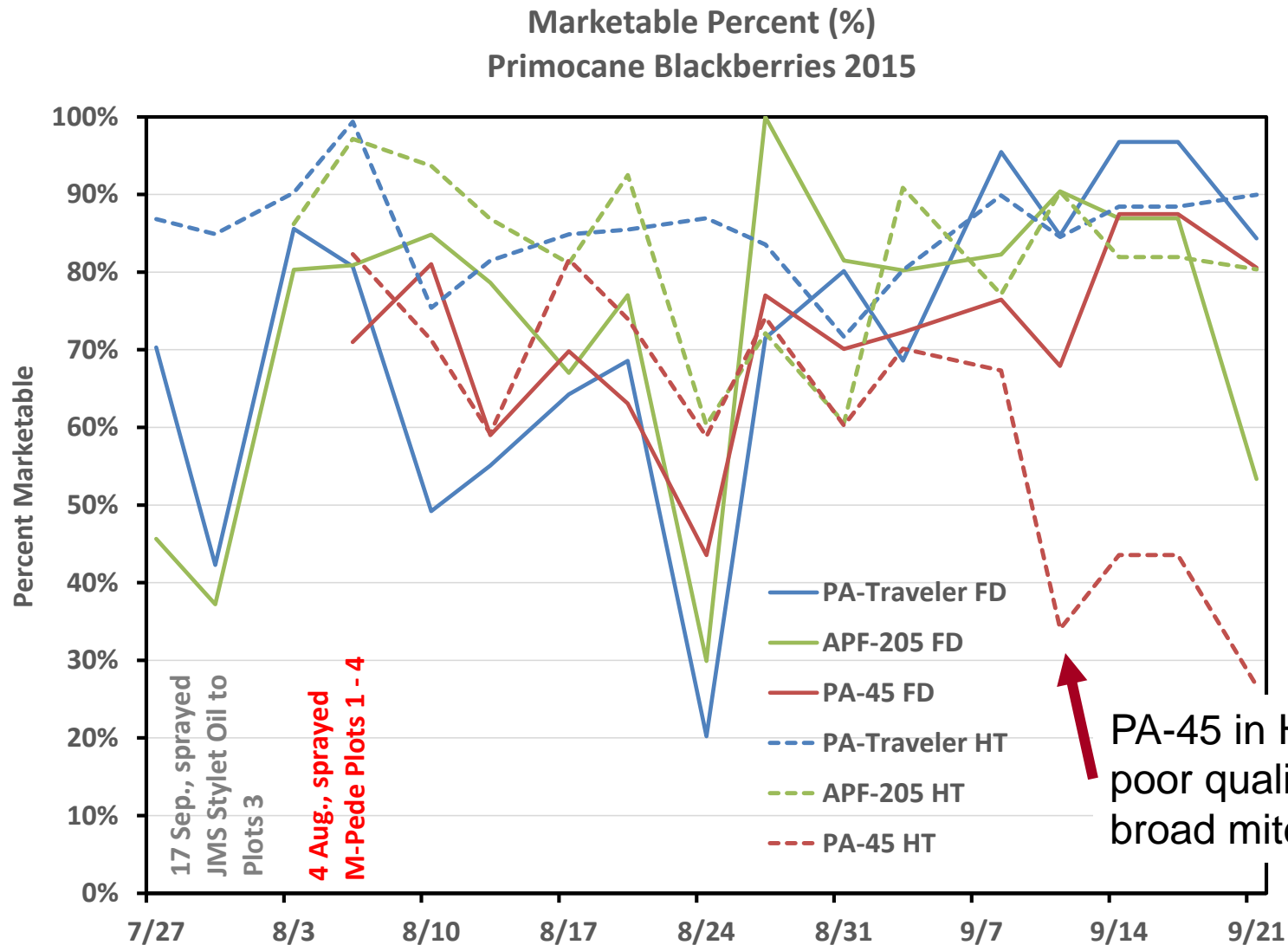


# Yield in High Tunnel (HT) vs. Field (FD)

Primocane Blackberry Cumulative Yield 2015

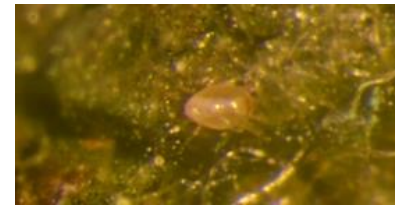


# High Tunnel vs. Field





## Summary On Broad Mites



- Broad mite attack all blackberry selections/cultivars
- Densities begin increasing in blackberries in late-May and early-June and can reduce yield
- Scout for broad mites & damage: terminal leaf cupping (downward or upward), leaf death (fire blight-like) and deformed flowers
- Agri-Mek, Apta, Magister and M-Pede significantly reduced broad mite densities for less than 2 weeks – probably need to reapply 10 days later
- **Apply miticide by late-May to early-June before signs of leaf damage and between 1-5 mites/terminal leaflet**



# FUTURE STUDIES OF BROAD MITES

1. Further evaluate efficacy of miticides
2. Evaluate *Neoseiulus* predatory mites on broad mites

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## Berry Growers