

The effect of variety, treatment threshold, and insecticides on flower thrips management in Florida's southern highbush blueberries

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Blueberries in Florida

- Rabbiteye
 - Mainly for U-pick
- Southern Highbush
 - fresh market blueberries
 - 2006 (USDA, 2007)
 - 7 million lbs
 - 2,600 acres
 - Average of \$4.70 per lb



Flower Thrips

- ~90% of thrips captured in FL blueberries are *Frankliniella bispinosa* (Morgan) (Arevalo, 2006)
- ~1mm in length
- Bristle-like wings and “punch and suck” mouthparts
- Wide host range



Thrips Injury

- Thrips injure flowers in two ways

- Feeding



- Oviposition



Thrips Control

- Conventional and Reduced-risk insecticides
 - Malathion[®]
 - SpinTor[®]
- Economic Threshold has not been determined
- Bee toxicity

Objectives

- To examine the effect of treatment threshold and variety on thrips populations in southern highbush blueberries
- To determine the potential of using several reduced-risk insecticides to manage flower thrips in southern highbush blueberries

Methods

- Sumter Co., Florida
- 3 treatments: T100, T200, and control
 - T100: When thrips per trap reached 100, SpinTor[®] was applied at the rate of 0.44 L/ha
 - T200: 200 thrips per trap threshold
 - Untreated control
- 4 varieties: Emerald, Jewel, Millennium, Windsor
- Completely randomized design with 3 replicates

Methods

- White sticky traps

- A total of 36 sticky traps were used
- They were changed out weekly



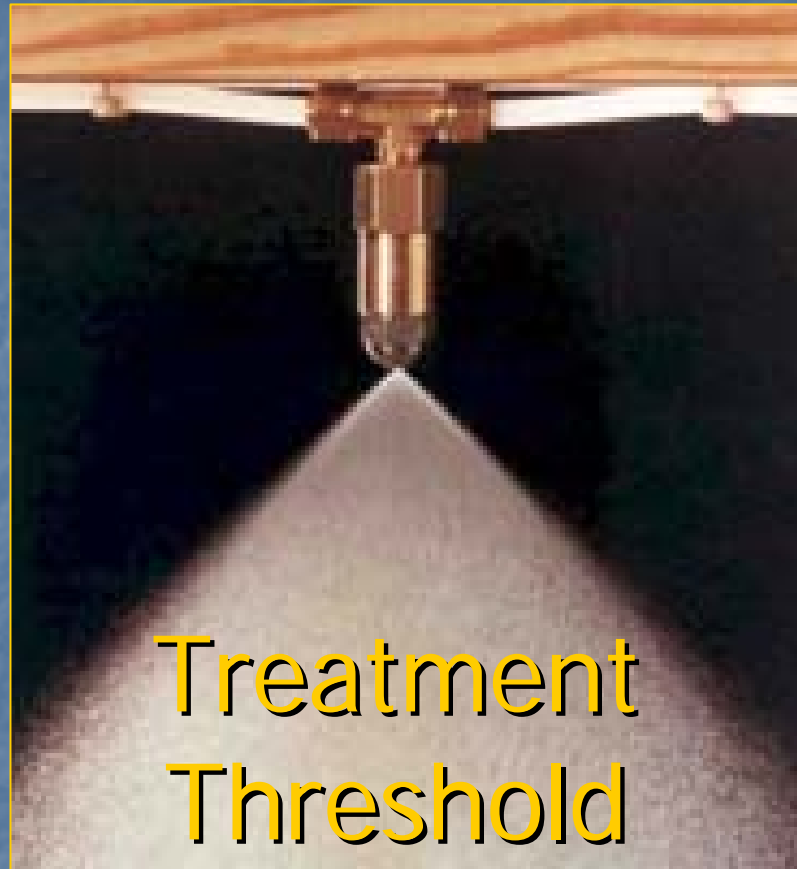
- Flower Samples

- Five flowers were collected weekly from the plant closest to each sticky trap



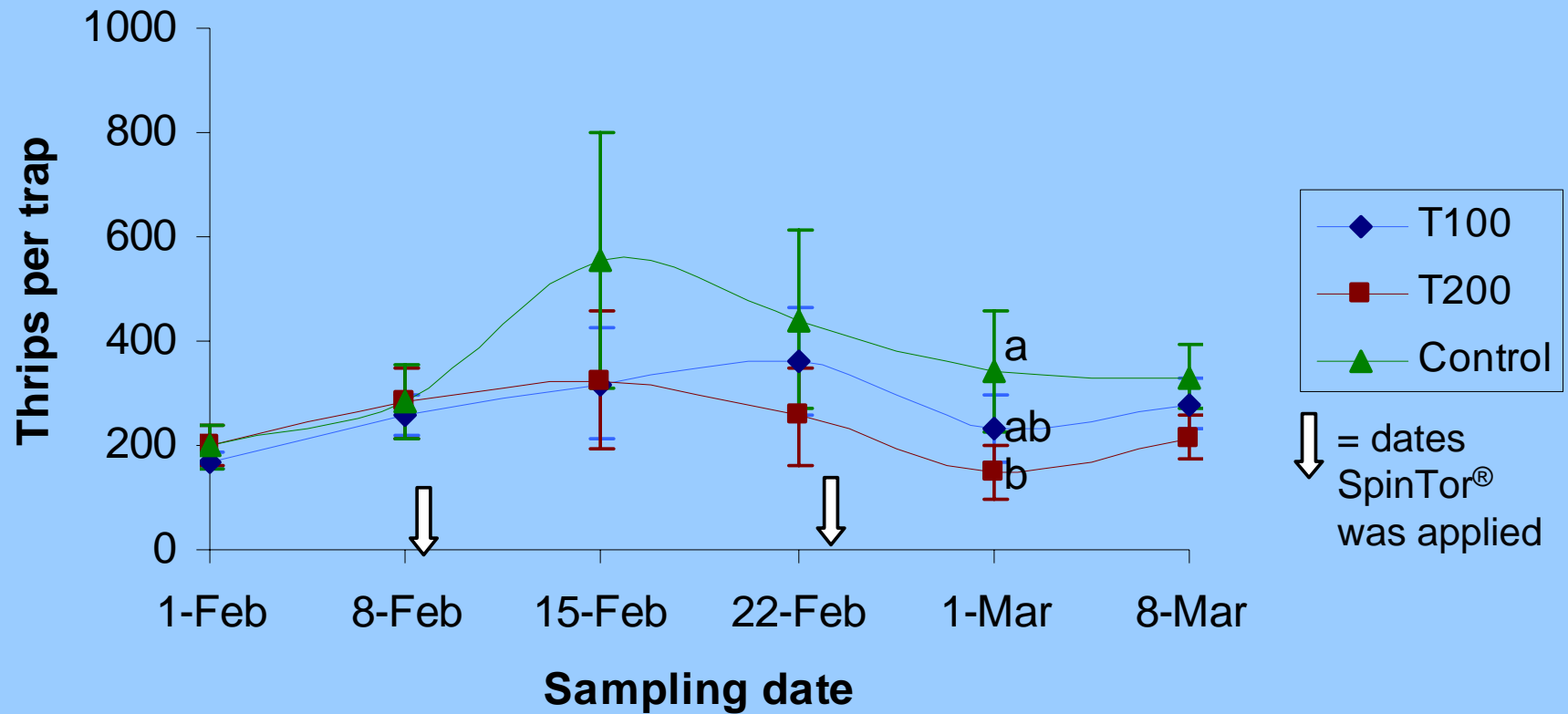
Methods

- Both treatments were at threshold on the first day of sampling
- SpinTor[®] was applied on Feb. 9 and Feb. 23

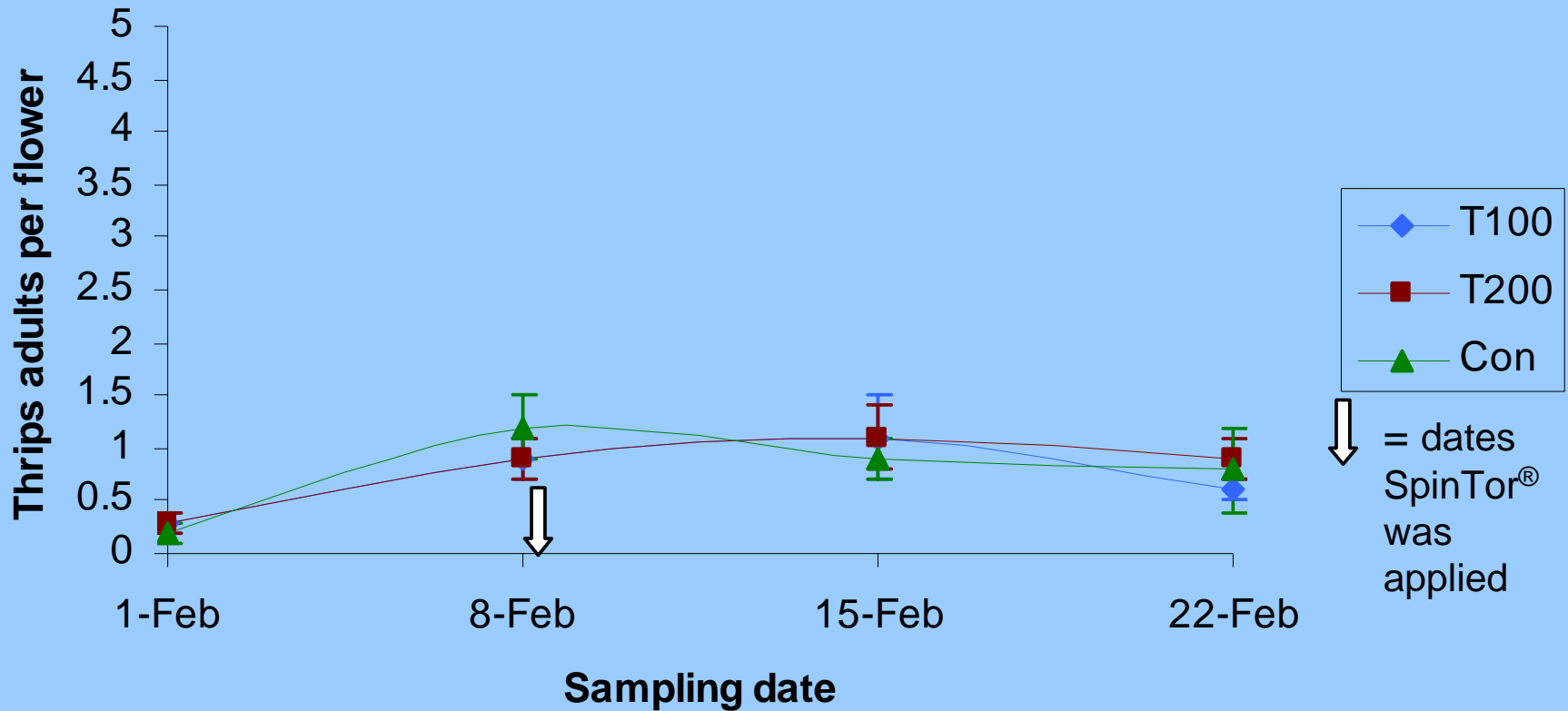


Treatment
Threshold

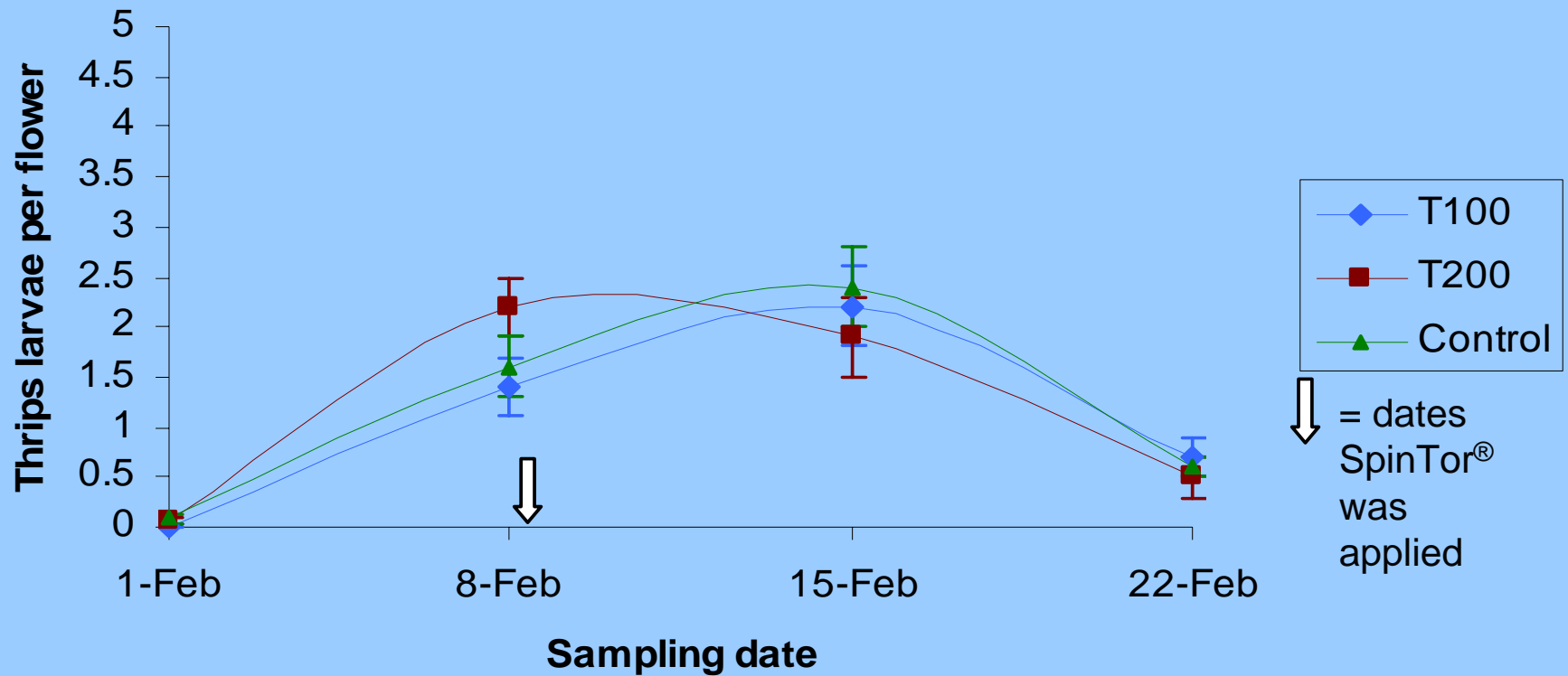
Sticky Traps



Adults per Flower



Larvae per Flower

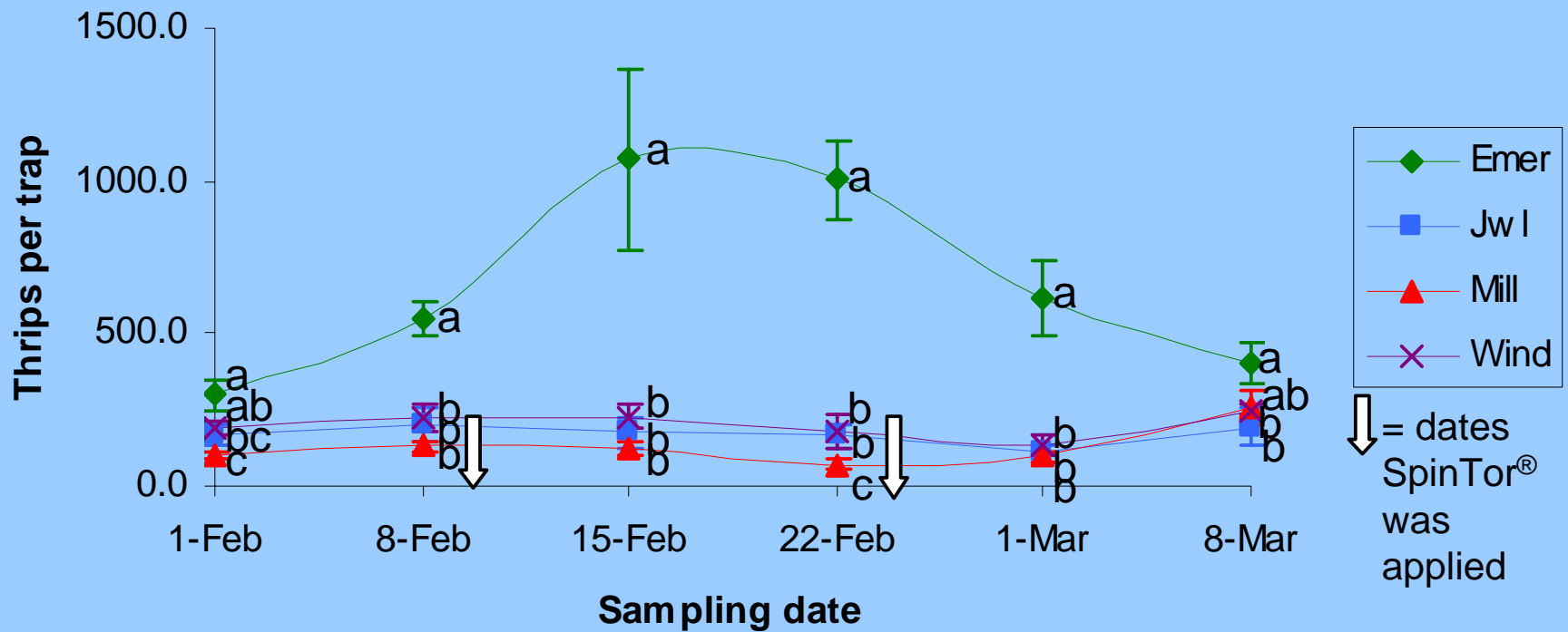




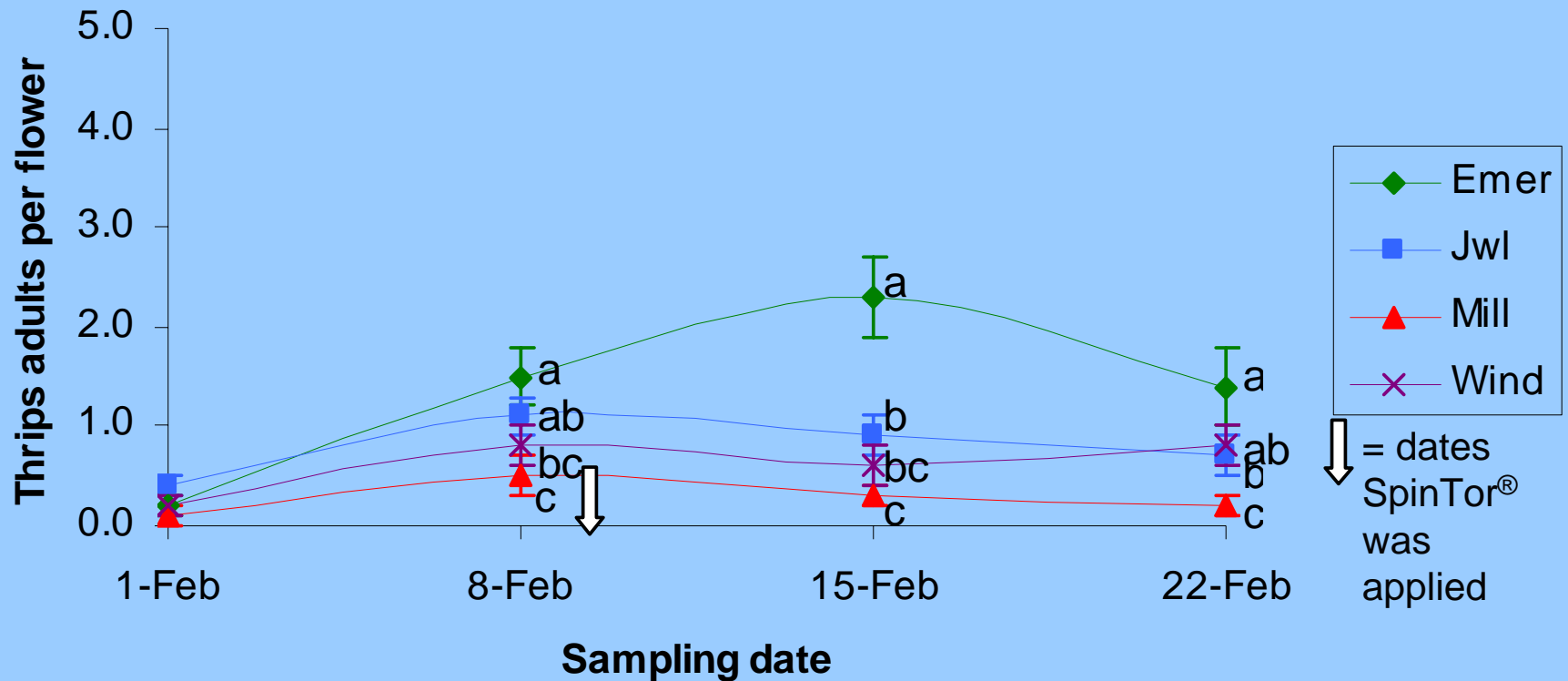
Variety

E. M. Rhodes, UF

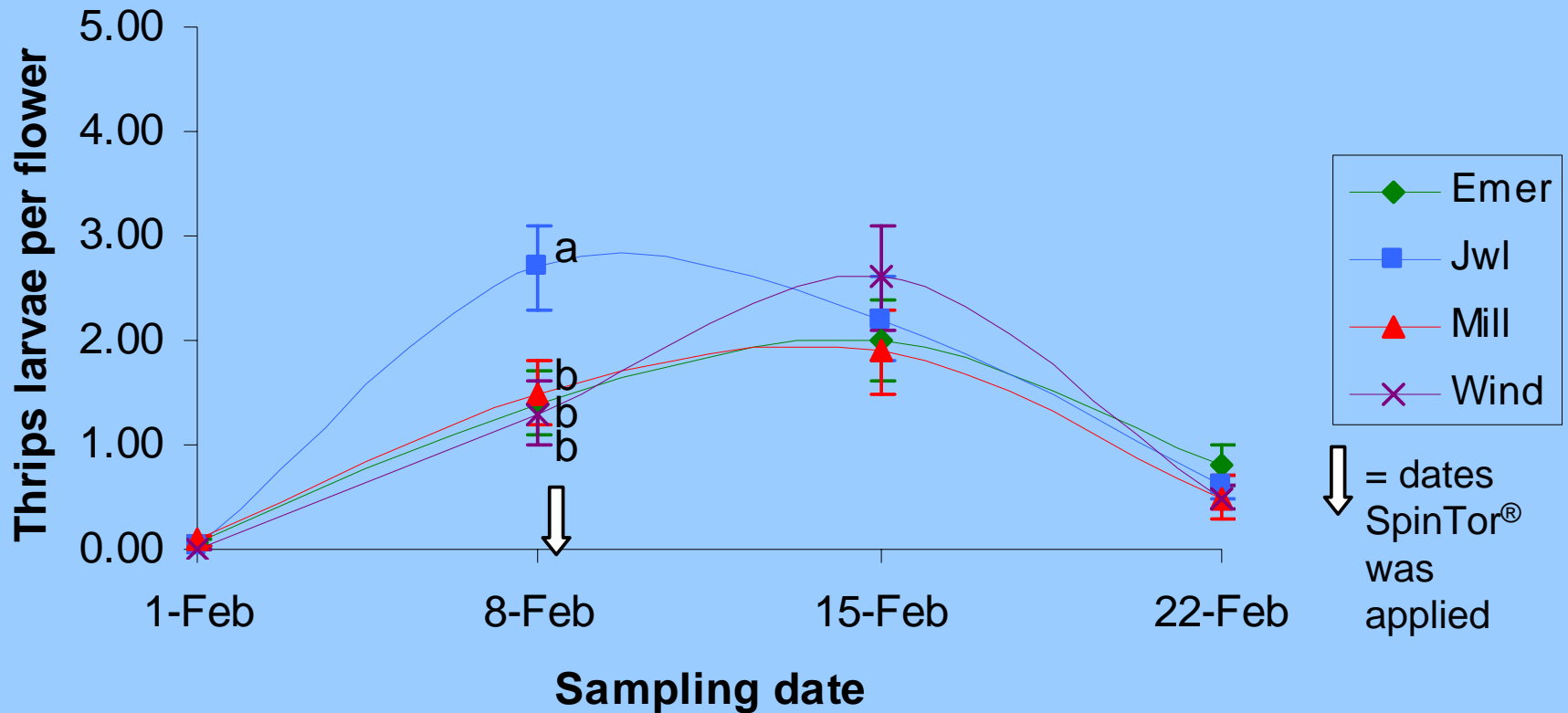
Sticky Traps



Adults per Flower



Larvae per Flower



Conclusions

- There were no significant differences in thrips numbers among thresholds
- Emerald had significantly higher numbers of thrips per trap and adult thrips per flower than at least 2 of the other varieties

Reduced-risk Efficacy Trial (Windsor farm)

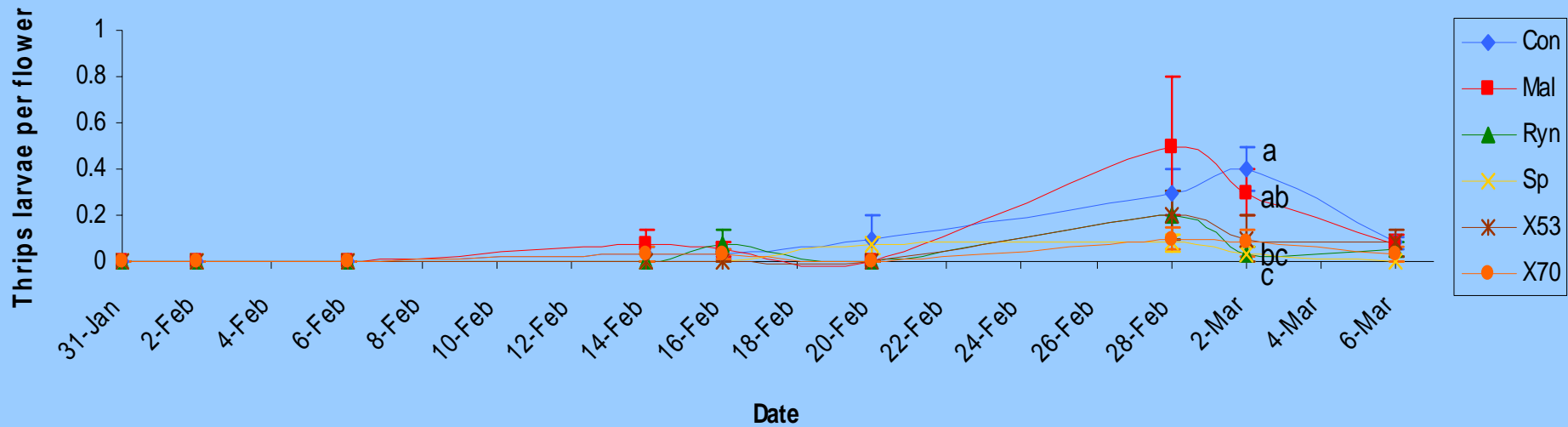
- RCBD with 4 replicates of 6 treatments
 - Malathion[®] 5 EC @ 1.8 L/ha
 - Rynaxypyr[®] @ 89.7 g a.i./ha
 - Spintor[®] 2 SC @ 0.44 L/ha
 - XDE-175 @ 131 g a.i./ha
 - XDE-175 @ 173 g a.i./ha
 - untreated control
- 3 applications every 14 days
 - Jan 31, Feb. 14, and Feb. 28
- Samples taken day of application and 2 and 6 days post application



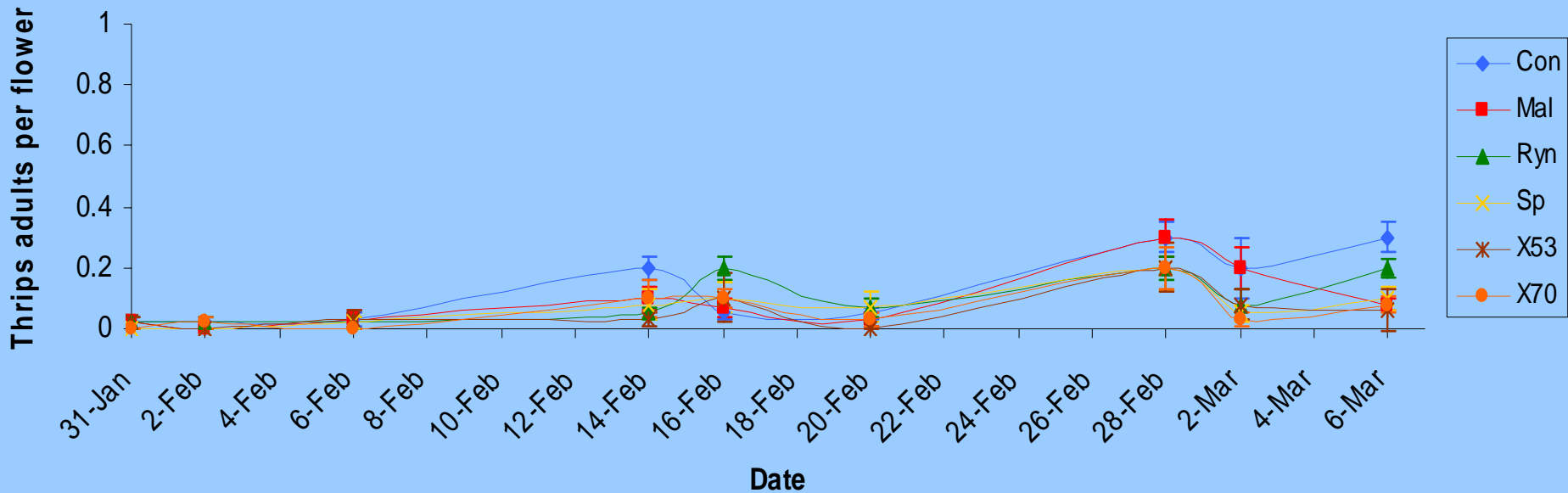
Windsor Plot Map



Thrips Larvae per Flower



Thrips Adults per Flower



Conclusions

- Rynaxypyr[®] and XDE-175 provided control equal to SpinTor[®]
- The two rates of XDE-175 were not significantly different from each other
- The experiment needs to be repeated when thrips are more abundant

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