RECENT EXPERINCES WITH PEPPER WEEVIL IN SOUTHERN GEORGIA

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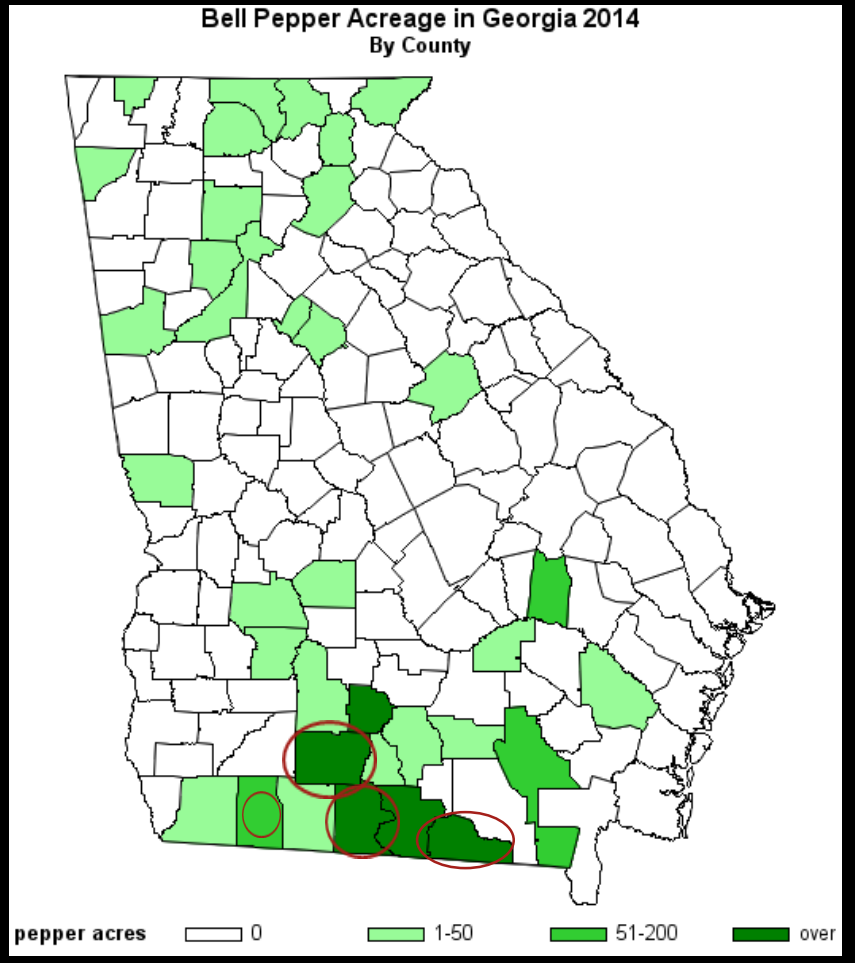
PEPPER CROP IN GEORGIA



HISTORY IN SOUTHERN GEORGIA

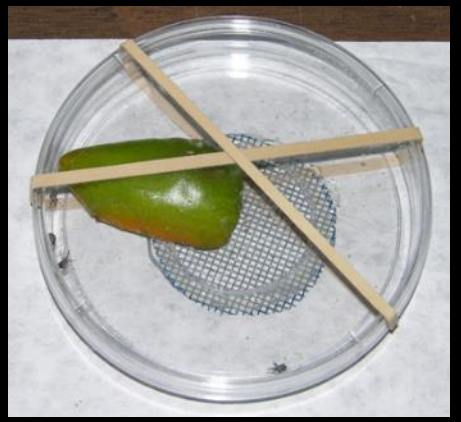
- Sporadic outbreaks in individual fields
- Generally attributed to localized introduction on transplants or fruit
- Little or no carry over to the following year
- Reports of more consistent problems started about 5 years ago
- 2017 – severe problems throughout southern Georgia in the fall crop (following 2 mild winters)

INFESTATIONS IN 2017

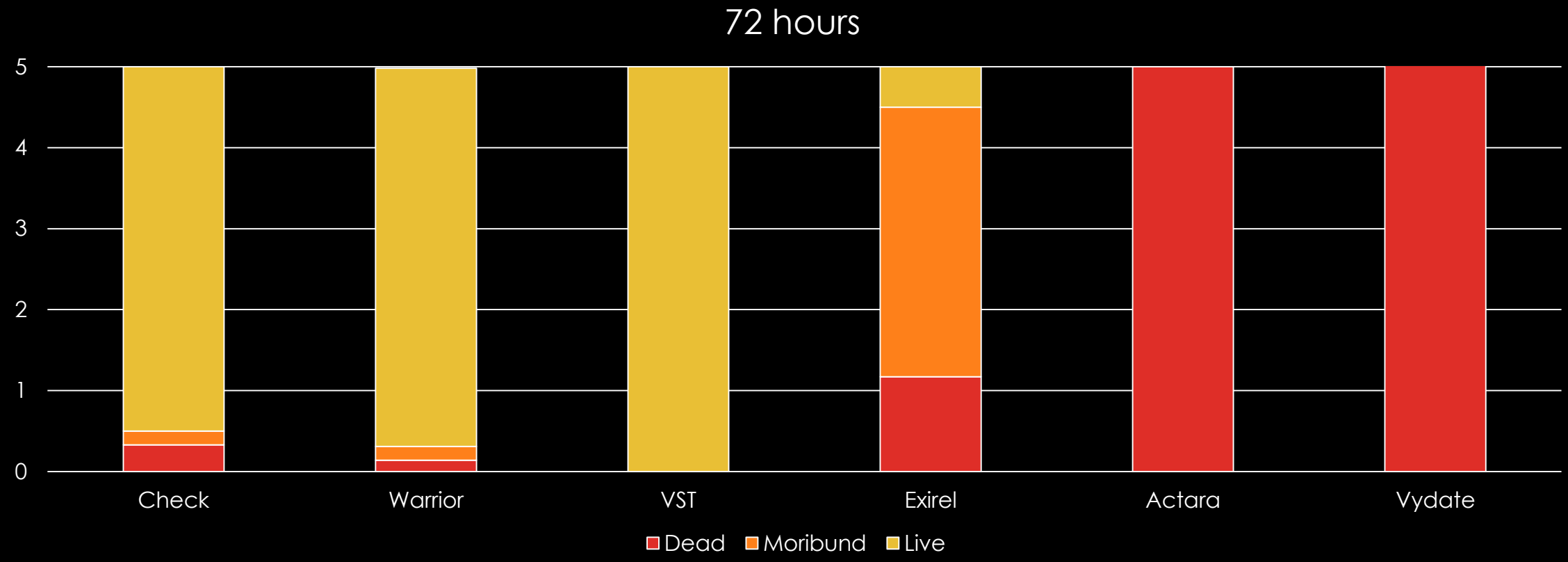
- Calls from County Agents and Consultants concerning control of pepper weevil in peppers in the fall
- Set up a grower meeting in Echols County (Sept. 25)
- After the meeting visited a pepper field to determine level of infestation
- Encountered the highest population infestation I had ever encountered (as high or higher in Brooks County)
- Collected pepper pods to conduct laboratory bioassay

BIOASSAY METHODOLOGY

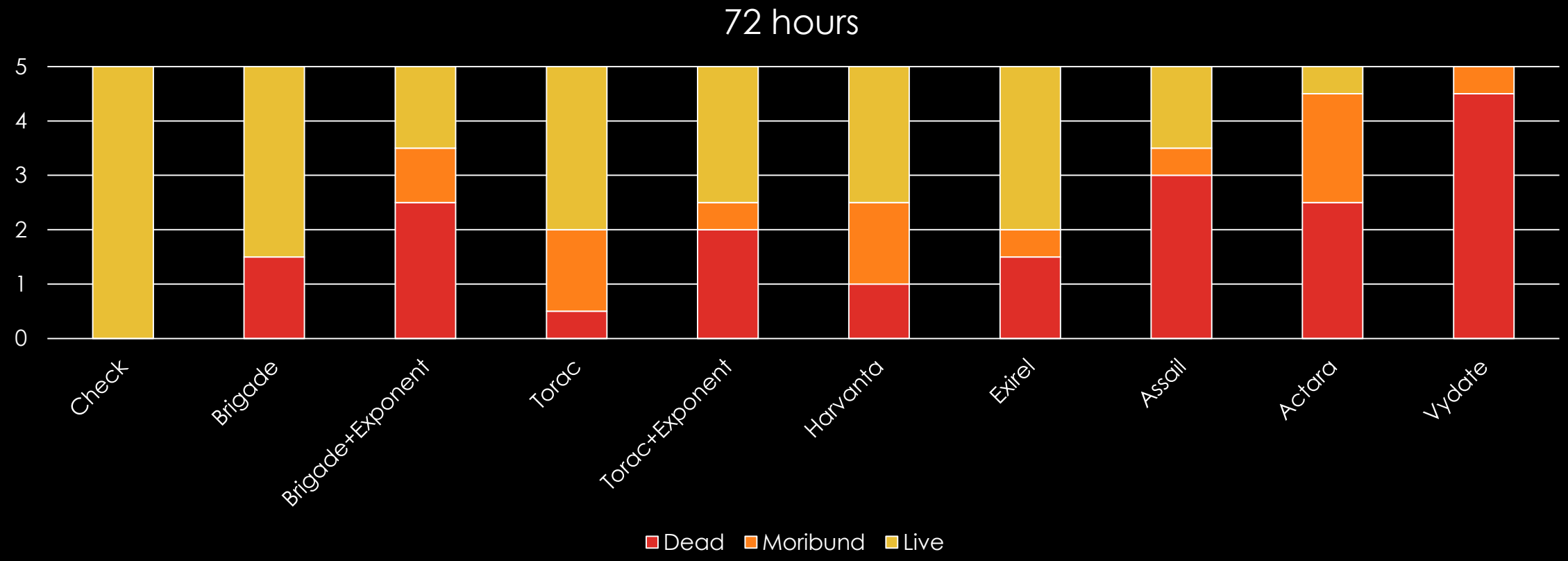
- Pods held for adult weevil emergence
- Insecticides at highest labeled rate
- Mixed for 100 GPA
- Dipped organic pepper slices, air dried
- Placed in petri dishes and introduced weevils
- Mortality observed at 48 and 72 hours



PEPPER WEEVIL BIOASSAY, 2017



PEPPER WEEVIL BIOASSAY, 2018



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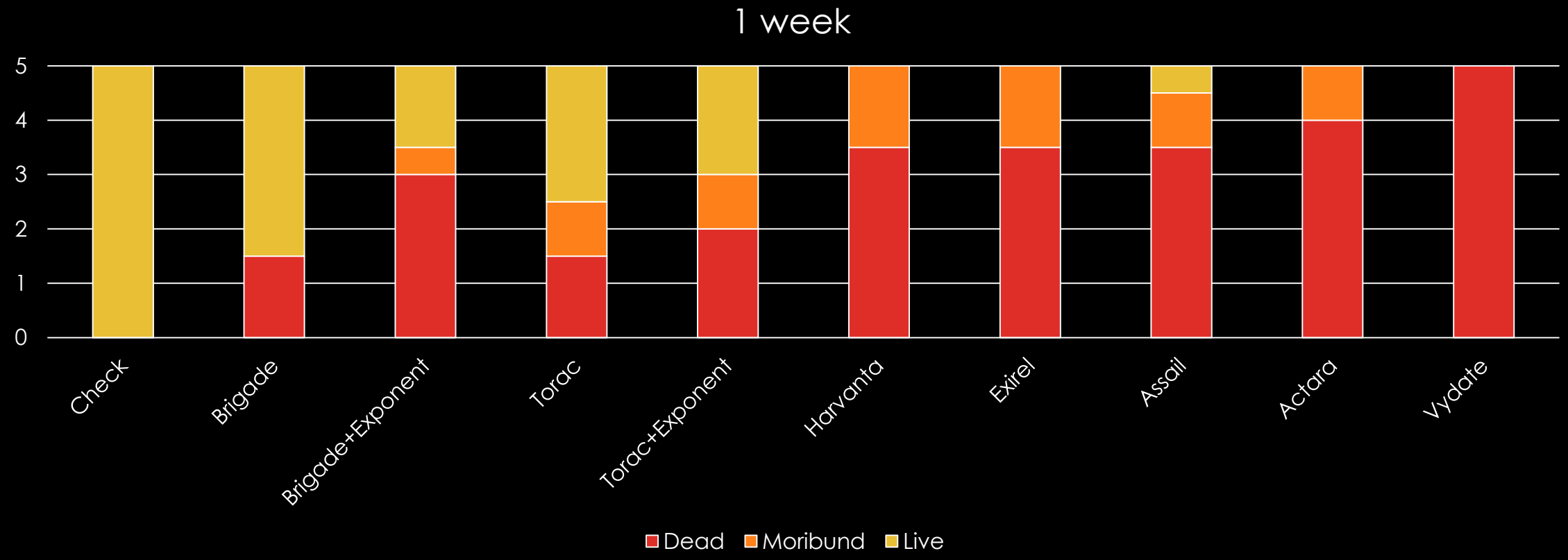


ADDITIONAL FIELD VISITS, 2017

- Colquitt County and Brooks County
  - High infestation levels (particularly Brooks County)
  - Eggplant fields infested (Colquitt County)
    - Damaged fruit (feeding in the bloom)
    - Lack of blooms
    - Half of blooms with adult weevil

EGGPLANT AS A HOST

- Damage to fruit noted several years ago, relatively minor but impacted marketability
- 2017 – visited field in Colquitt County
  - Much of the fruit damaged
  - Noticeable lack of blooms
  - Adult weevil in 50% of blooms
- Laboratory study (Riley)

Host	Weevils per fruit	Weevils per bloom	Weevils per acre
Pepper	3.30	0.36	19,481
Eggplant	0.02	0.06	1,089

OVERWINTERING IN GEORGIA

- Emphasized crop destruction with growers
- Experienced relatively harsh winter in 2017-18
- Collected peppers from the ground in late winter
- Established pheromone traps in late winter-spring

PEPPER CROP DESTRUCTION

EVIDENCE OF OVERWINTERING

- Pod collections from old fields
- Grady County, Feb. 15; Echols County, Feb. 16
- Bell pepper fields - pods nonexistent
- Jalapeno peppers – whole pods on the ground
- Collected pods
- Held for potential adult emergence

EVIDENCE OF OVERWINTERING

- Grady County
  - Estimated 200+ “healthy” pods per acre
  - Collected 170 “healthy” pods
    - Collected 15 adults while re-bagging
  - Dissection of pods
    - 40 “healthy” pods, 50 “less favorable” pods
    - 2 and 3 dead adults, no live adults, no grubs
  - 150 pods held for adult emergence
    - 4 adults at 1 day, 2 at 7 days, none thereafter

EVIDENCE OF OVERWINTERING

- Echols County
  - Collected 150 pods
  - Collected 3 live adults on these pods
  - No adult emergence through 11 days

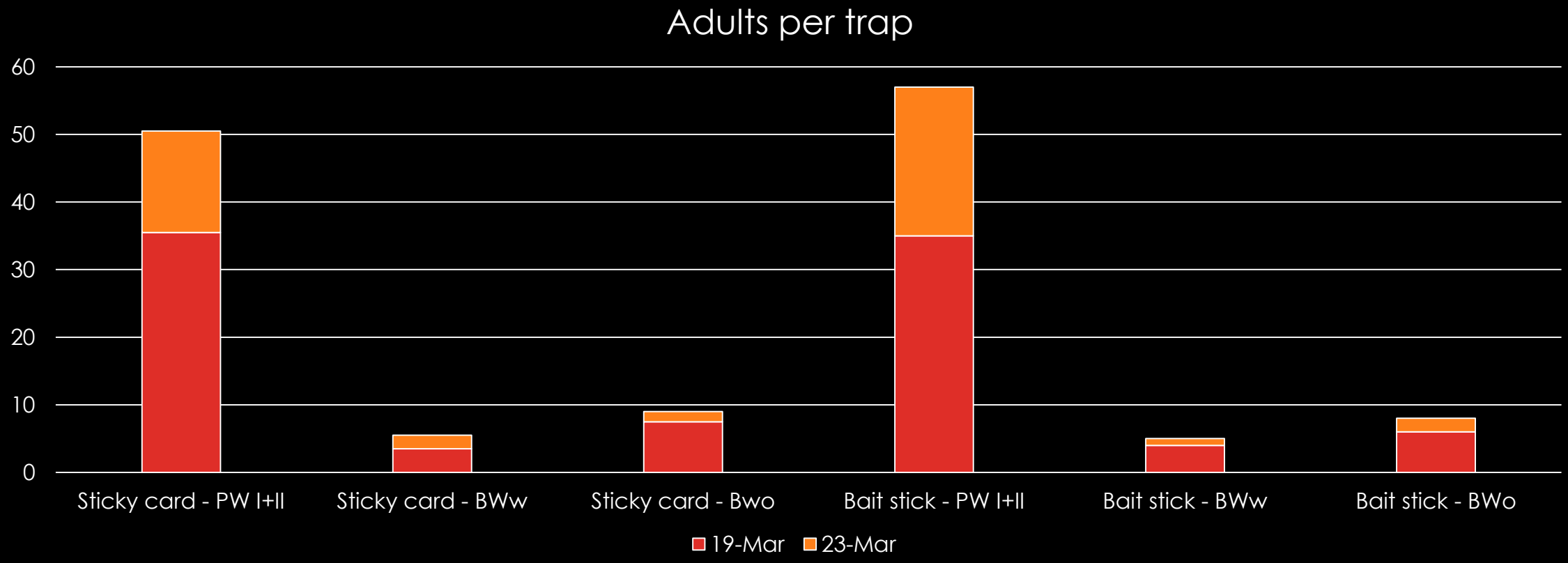
PEPPER WEEVIL

- No diapause
- Adult longevity
  - 1 to 3 weeks without food
  - 3 months with food
- Jalapeno pods are likely serving as a food source and may allow overwintering in southern Georgia

EVIDENCE OF OVERWINTERING

- Pheromone trap data (Tim Flanders)
- Comparison of trap type and bait
  - Sticky cards vs Bait stick (boll weevil)
  - PWI+II vs Grandlure vs Grandlure+Eugenol
- Comparison of Bait
  - PWI vs PWII vs combined vs none
  - All with pvc pole trap

ADULT CAPTURES



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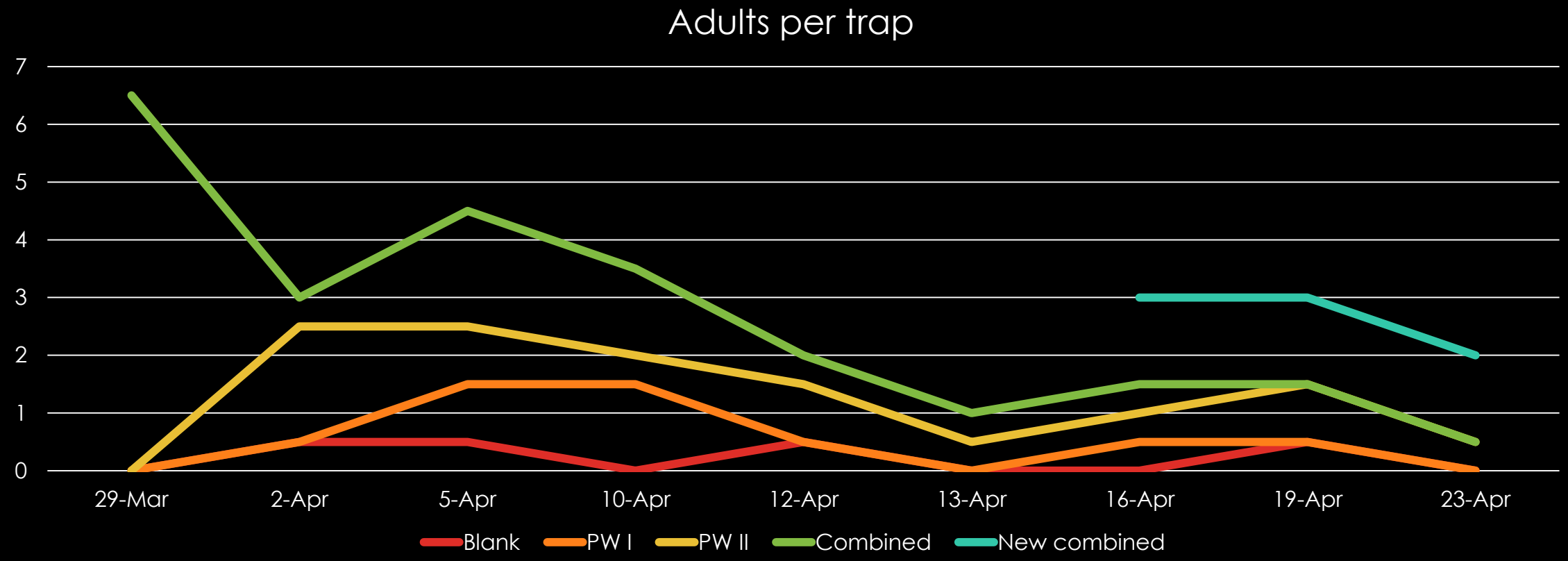

TRAPPING OF COMMERCIAL FIELDS

- Trapped commercial fields in 4 counties
  - Grady, Brooks, Echols, Colquitt
- Trapped 3+ fields in each county
- PVC pole trap, PWI+II pheromone
- Caught 2 weevils in over one month of trapping
- Pheromone traps do not compete with the crop

PEPPER WEEVIL IN 2018

- Fields treated fairly aggressively throughout 2018
  - Vydate primary product
  - Assail, Actara in the rotation
  - Rimon used in combination
  - Exirel, Harvanta, Torac – questions still exist
  - Riley's field test - inconclusive
- Spring – very minor problems
- Fall – mostly minor problems but weevils present in many fields, a few fields with more severe problems, questionable spray programs in some of these fields

FUTURE PLANS AND CONCERNS

- Monitor overwintering in southern Georgia
- Role of eggplant in maintaining populations
- Insecticide efficacy/resistance
- Proposed reduction in number of applications of oxamyl
  - EPA proposed reduction from 8 to 4 in pepper
  - EPA proposed elimination in eggplant
  - Comment period closed October 9, 2018
  - 10 comments received (2 not related, 8 positive)

QUESTIONS