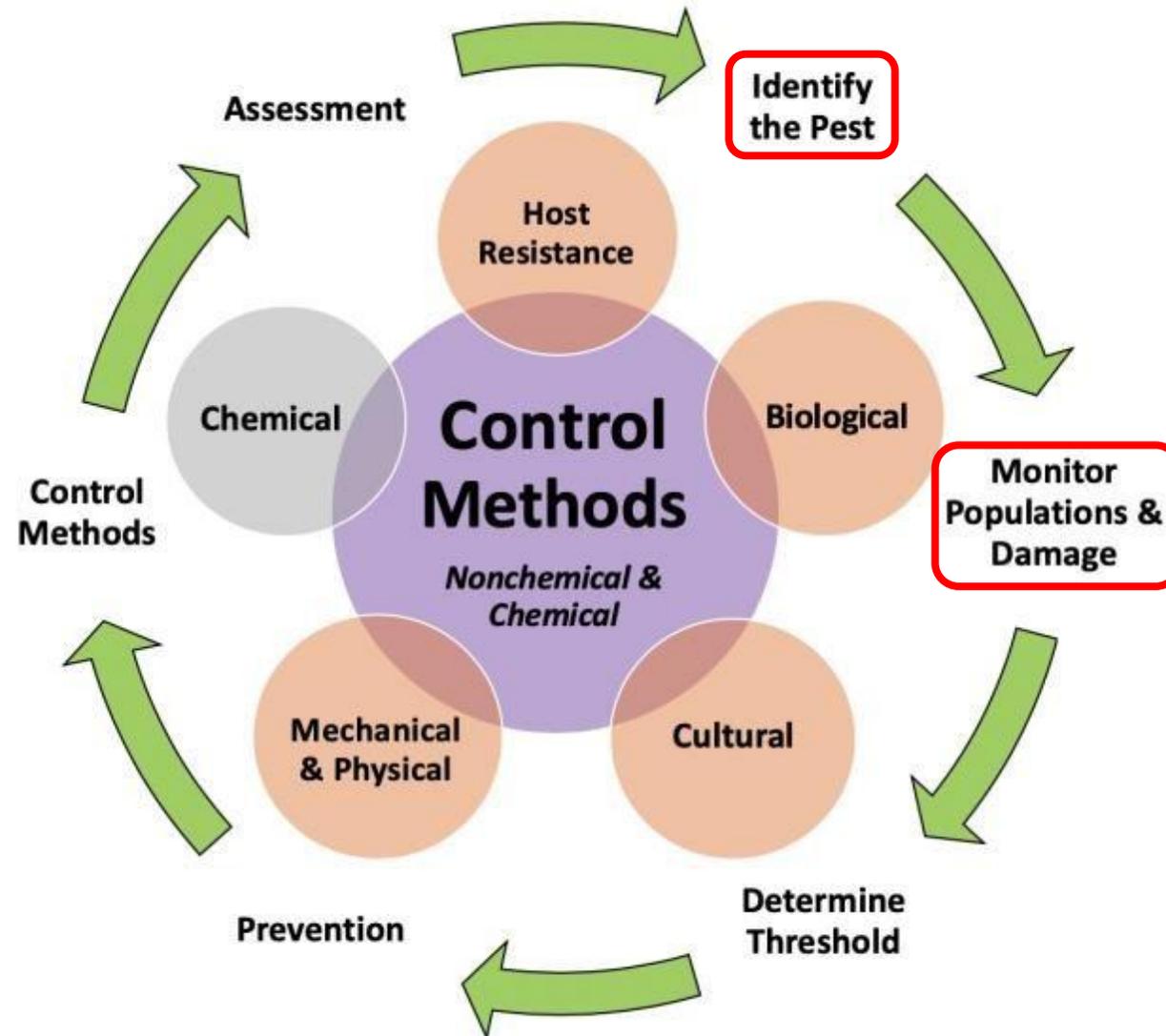


Hibiscus Bud Weevil Workshop

Monitoring the Hibiscus Bud Weevil (HBW)

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Integrated Pest Management (IPM)



Hibiscus Bud Weevil (HBW) in Florida

- Hibiscus bud weevil: *Anthonomus testaceosquamosus*



Monitoring the HBW



Pheromone-based programs for weevils



Boll weevil
A. grandis



Cranberry weevil
A. musculus



Pepper weevil
A. eugenii

- ❖ Pests of many important crops.
- ❖ Efficacy of chemical control is limited.
- ❖ **Pheromone-based programs** have been successful applied to IPM of several weevils.
- ❖ Efficacy of lures is dependent on **trap color**, **height** and **placement** in the field.

Pheromone-based programs for weevils



Boll weevil
A. grandis



Cranberry weevil
A. musculus



Pepper weevil
A. eugenii

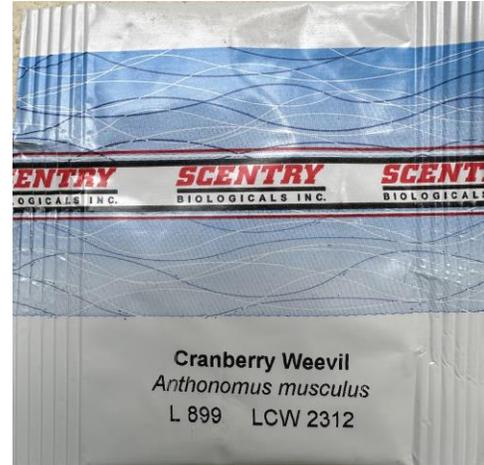


Hibiscus weevil
A. testaceosquamosus

Aggregation pheromones lures for weevils



Boll weevil
A. grandis



Cranberry weevil
A. musculus



Pepper weevil
A. eugenii



Hibiscus weevil
A. testaceosquamosus

- ❖ **Lures and traps** for the boll weevil, pepper weevil, cranberry weevil and other weevils are available in the market.
- ❖ **Lures for capturing HBW have never been tested.**

Traps used for capturing weevils



Boll weevil trap
A. grandis



Japanese beetle trap
Popillia japonica



Yellow sticky traps

❖ Traps for capturing HBW have never been tested.



Hibiscus weevil
A. testaceosquamosus

❖ Goal: to develop and implement a species-specific pheromone trap and lure for the HBW.

Exploring market-available lures and traps for HBW



Boll weevil trap
A. grandis



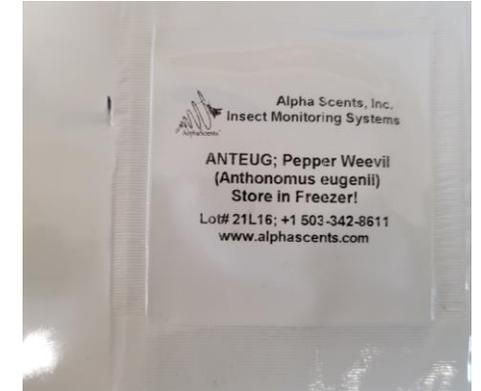
Japanese beetle trap
Popillia japonica



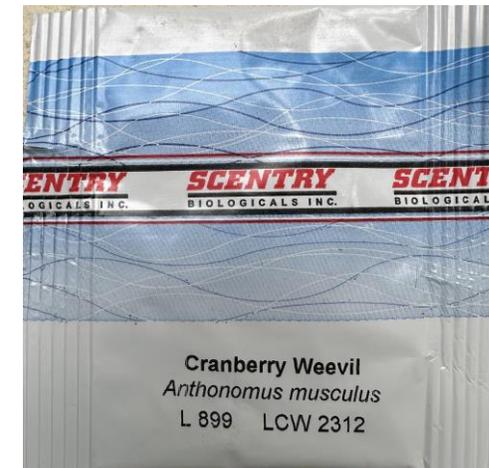
Yellow sticky traps



Boll weevil
A. grandis



Pepper weevil
A. eugenii



Cranberry weevil
A. musculus

Exploring market-available lures and traps

Which congeneric lure is most effective for capturing HBW adults?

❖ Three lure types:

- Cranberry weevil lure
- Boll weevil lure
- Pepper weevil lure

❖ Three lure sizes (diameter):

- 0.15 inch (4 mm)
- 0.4 inch (10 mm)
- Full size



Boll weevil
A. grandis



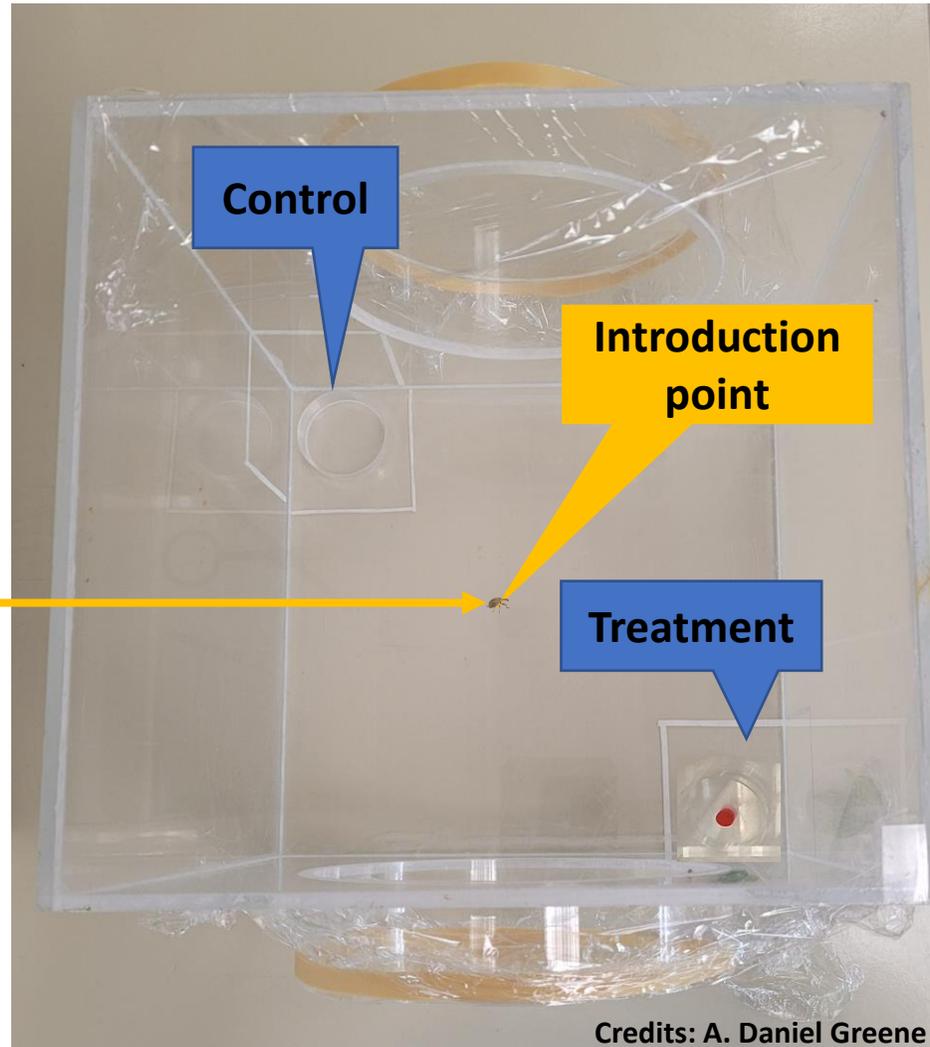
Pepper weevil
A. eugenii



Cranberry weevil
A. musculus

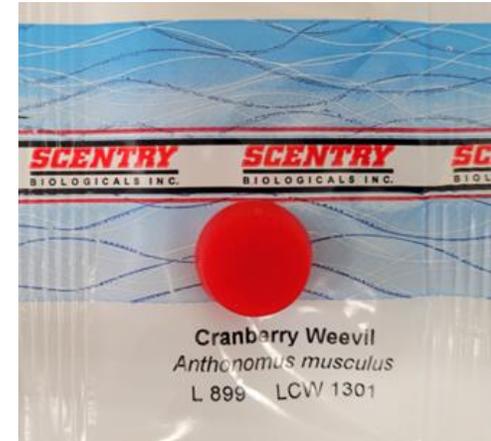
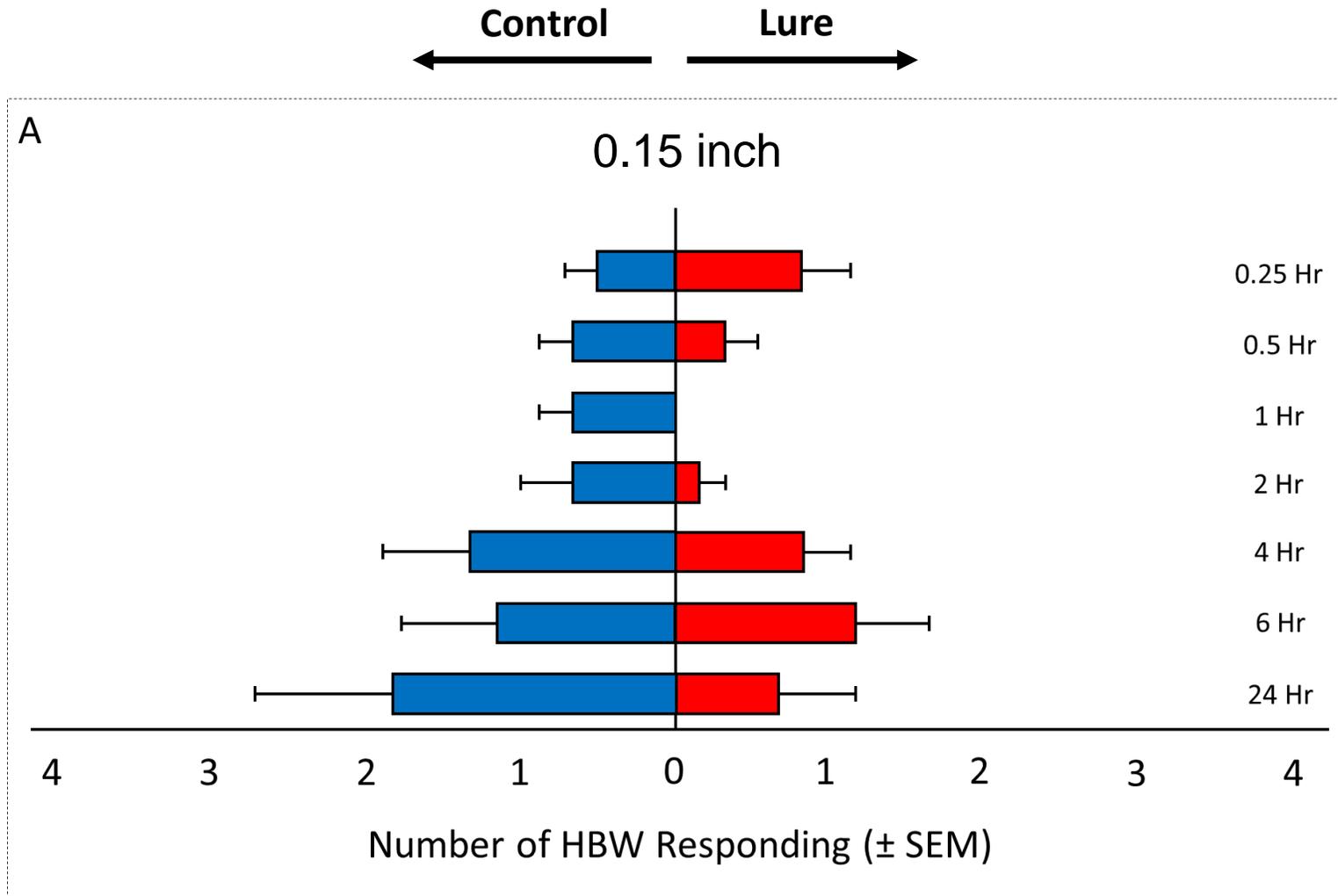
Exploring market-available lures and traps

❖ Cage olfactometer:

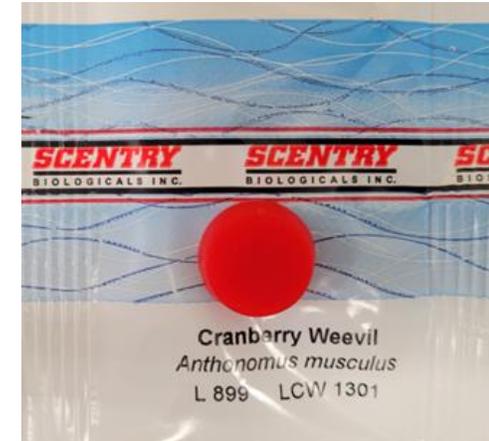
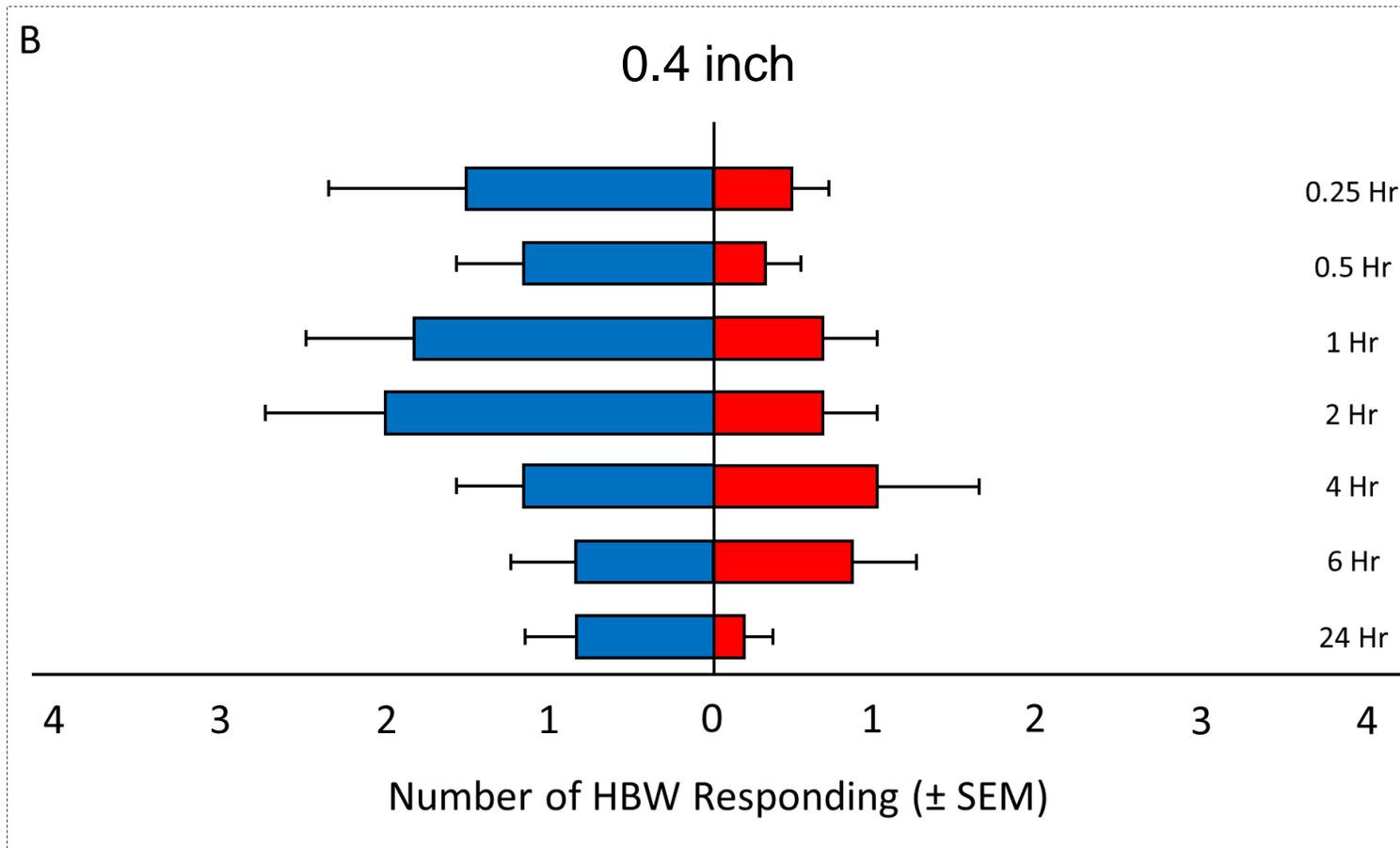


Credits: A. Daniel Greene

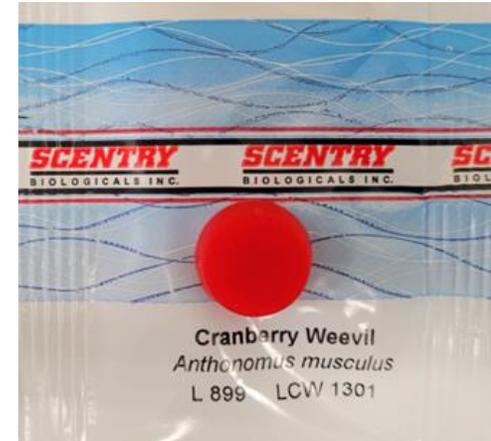
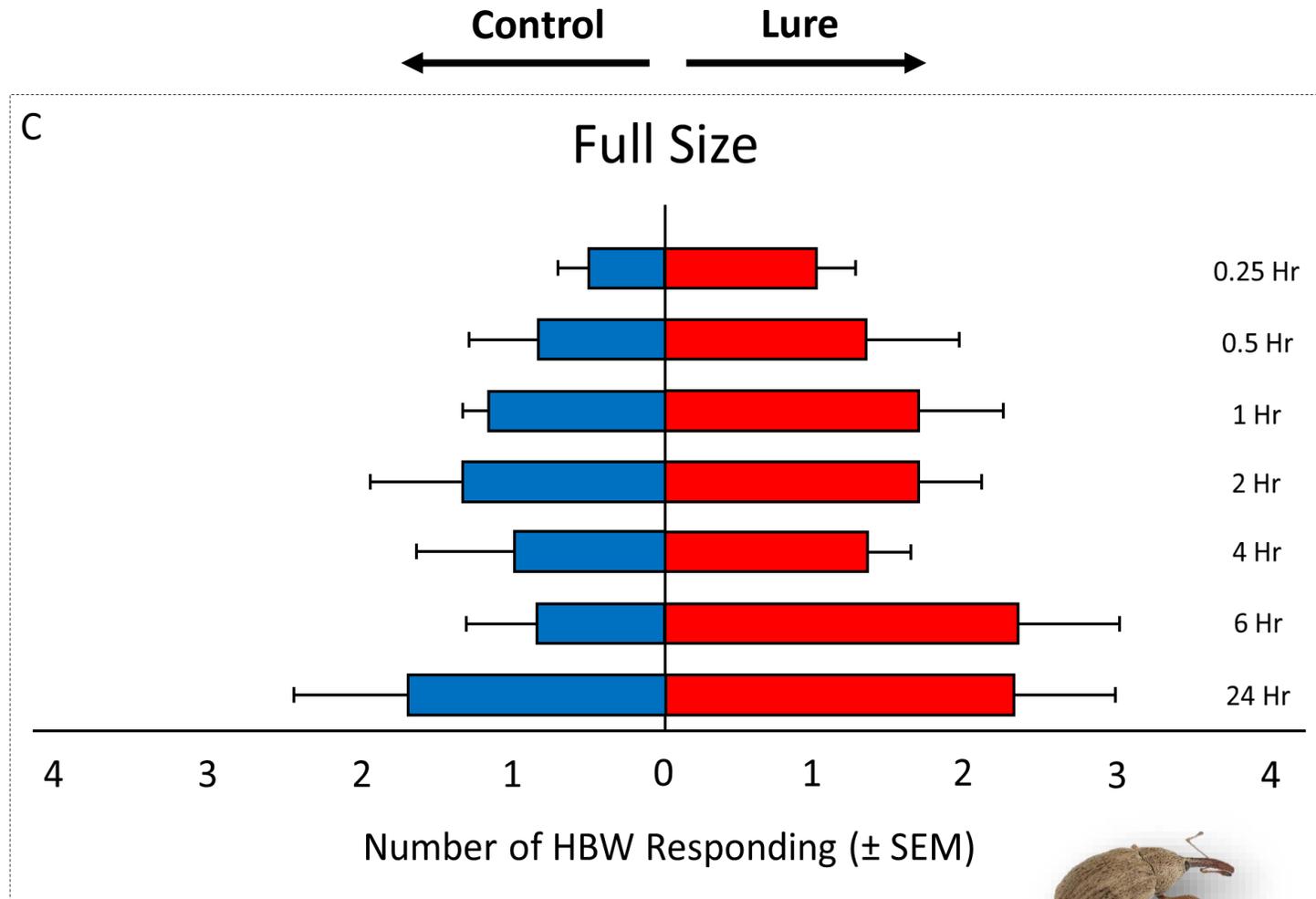
Cranberry weevil lure



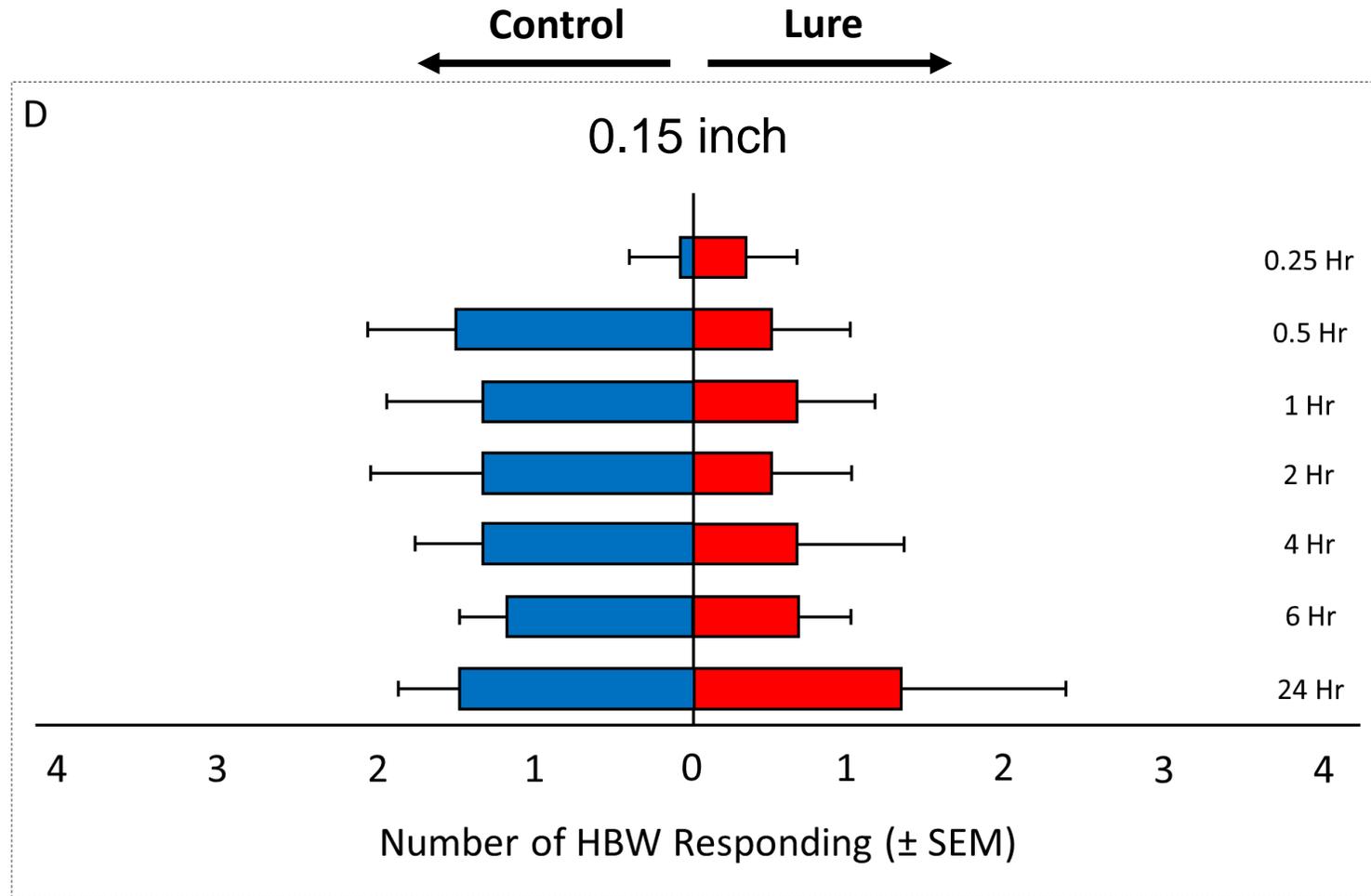
Cranberry weevil lure



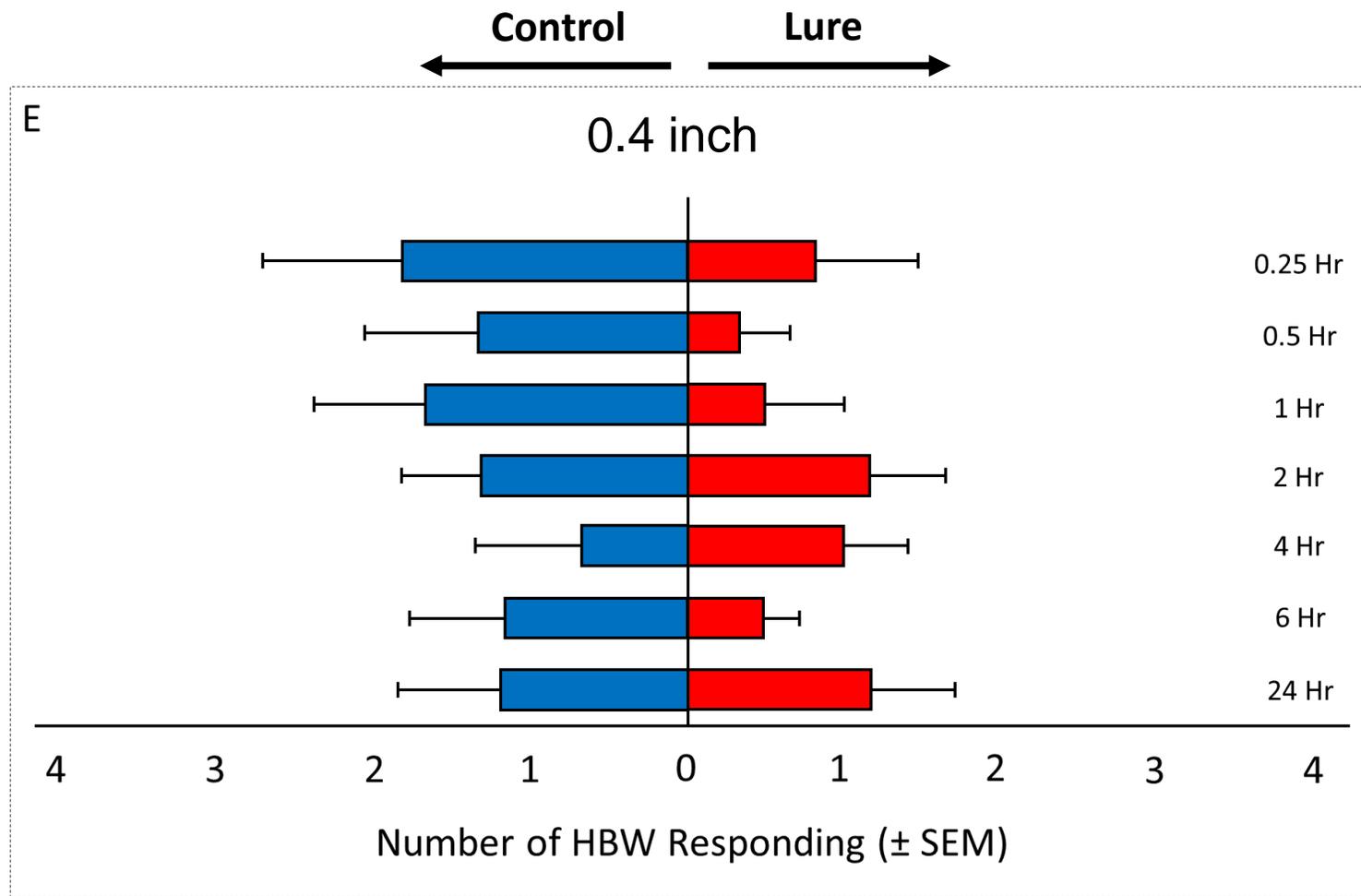
Cranberry weevil lure



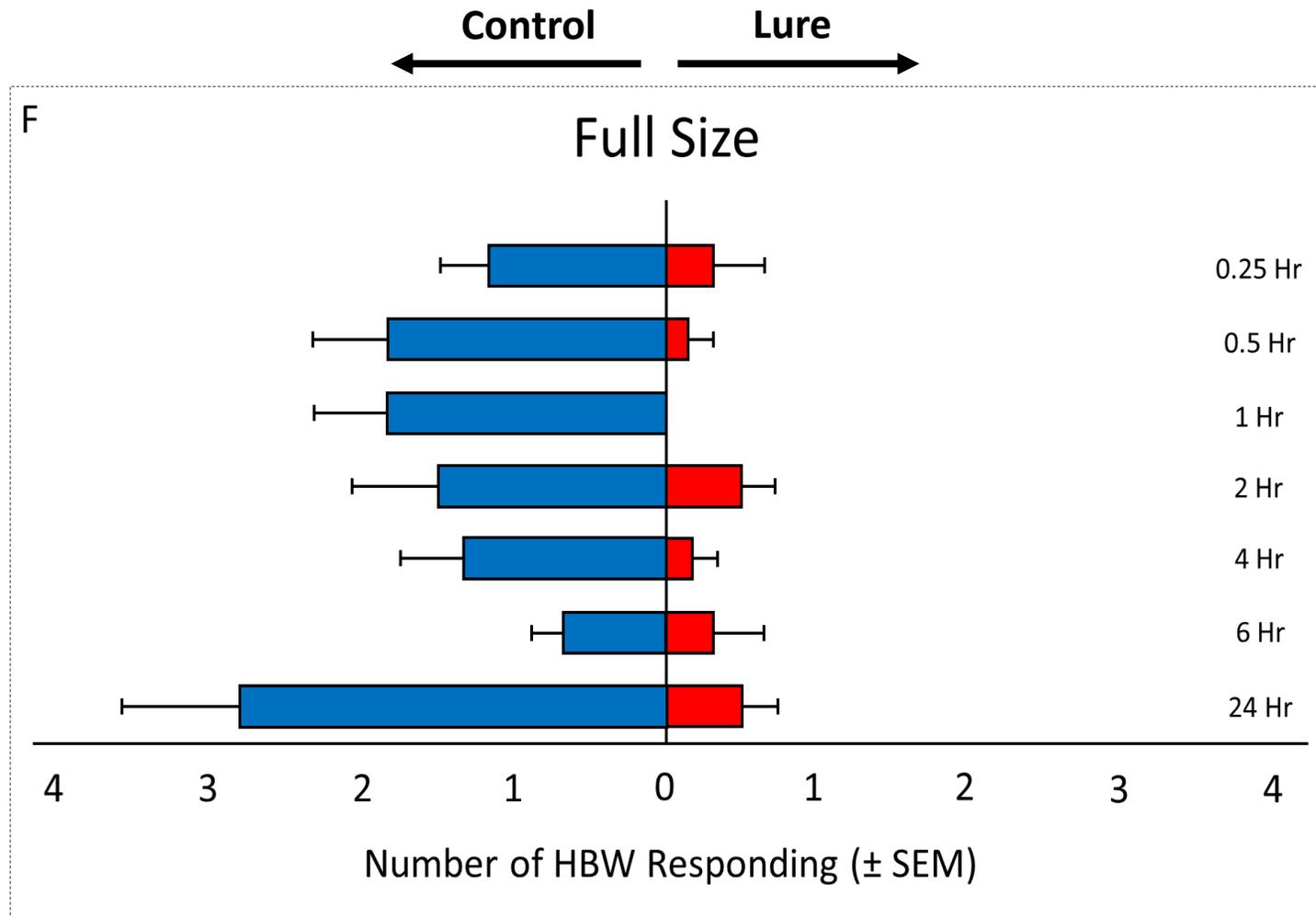
Boll weevil lure



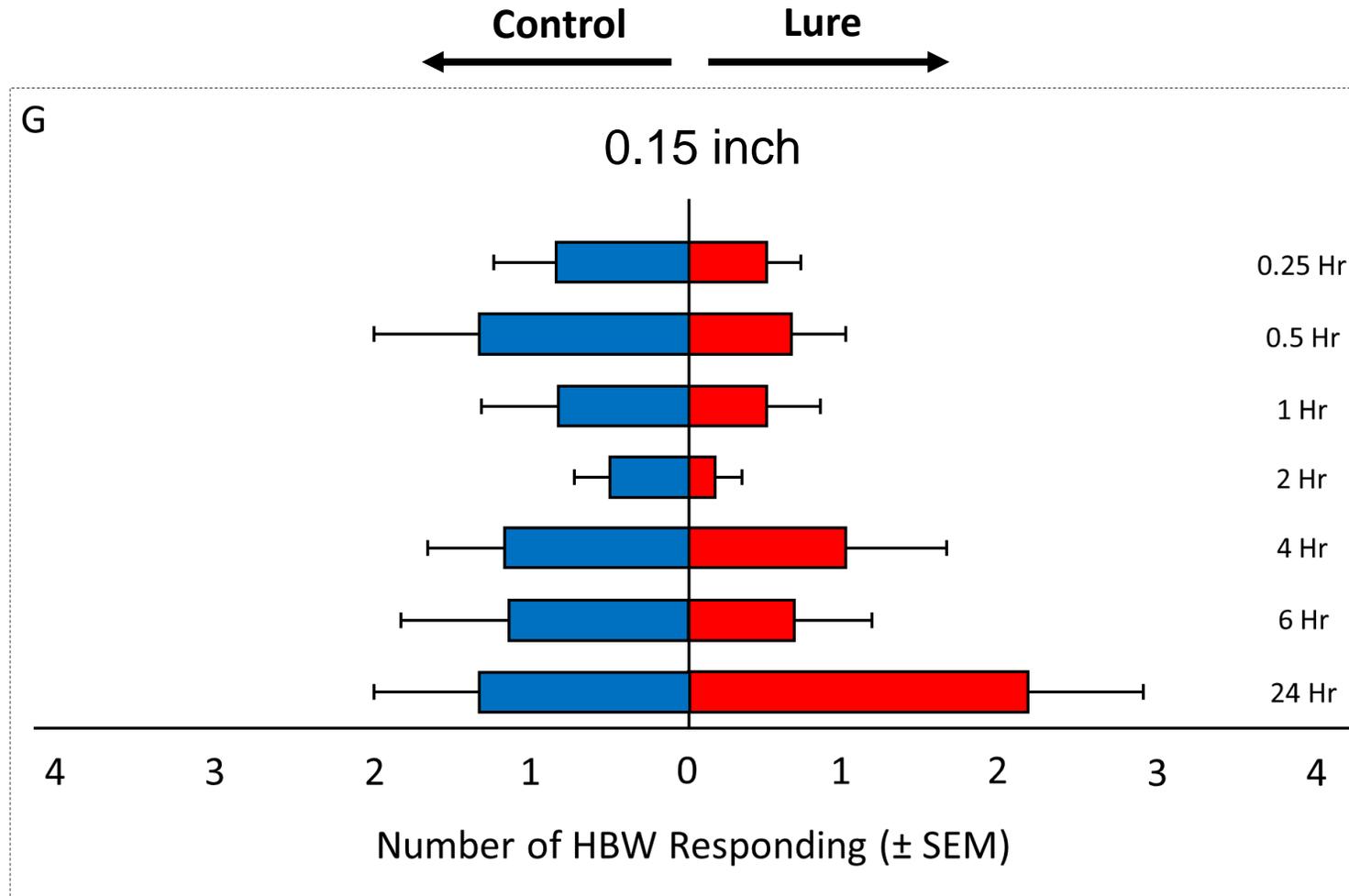
Boll weevil lure



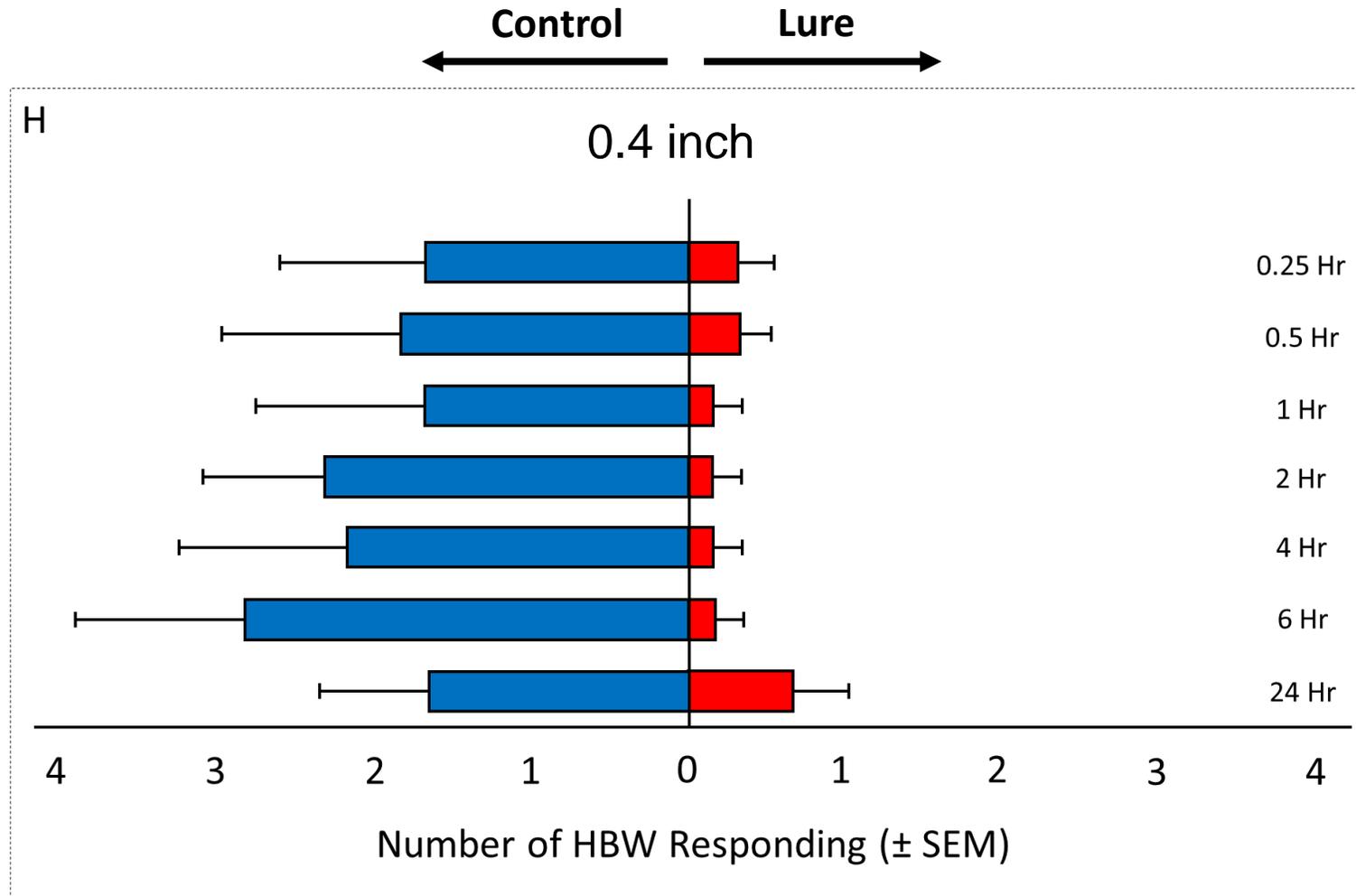
Boll weevil lure



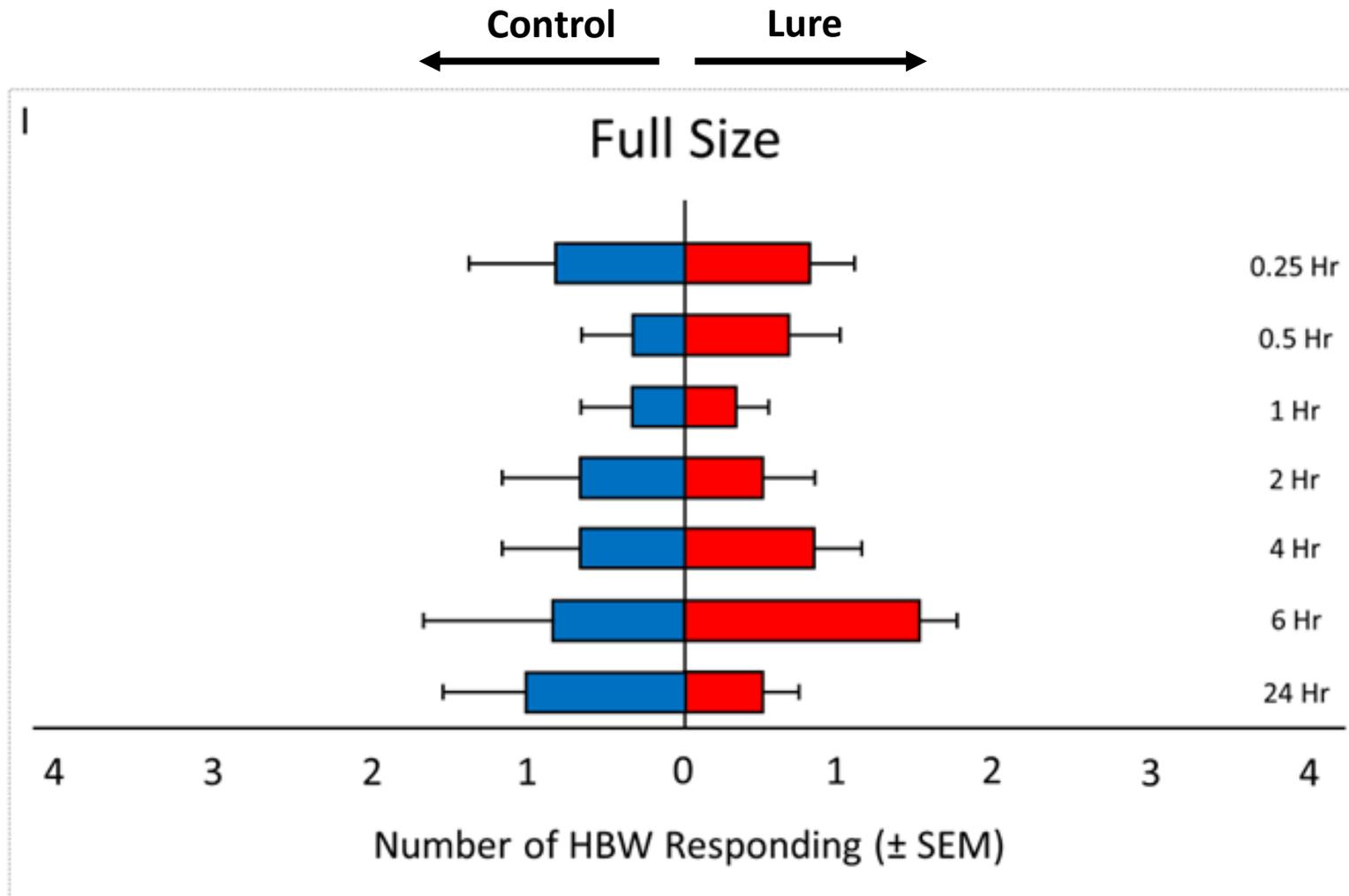
Pepper weevil lure



Pepper weevil lure

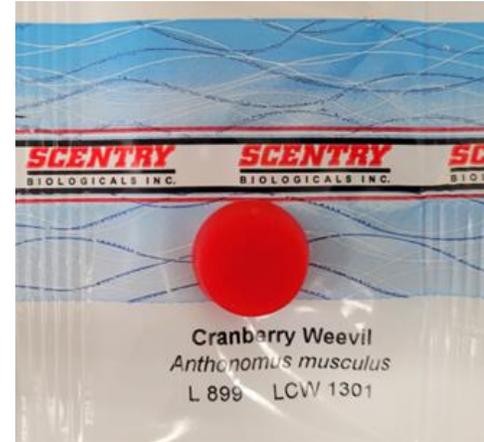
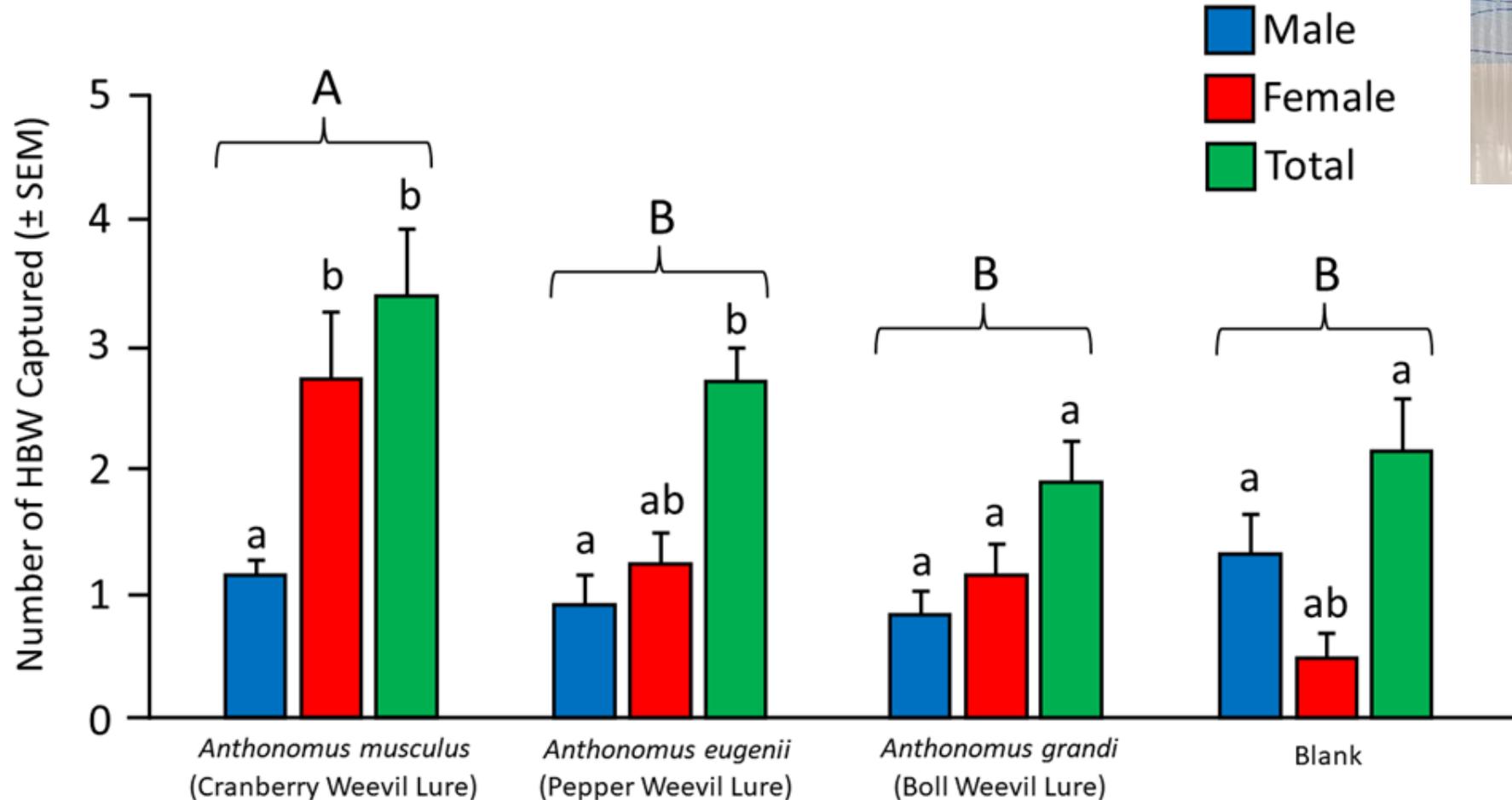


Pepper weevil lure



HBW choice among the three lures

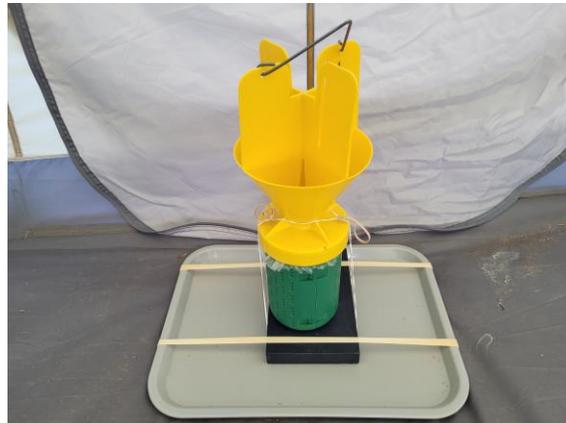
❖ The **cranberry weevil lure** is more efficient in capturing HBW



Exploring market-available traps



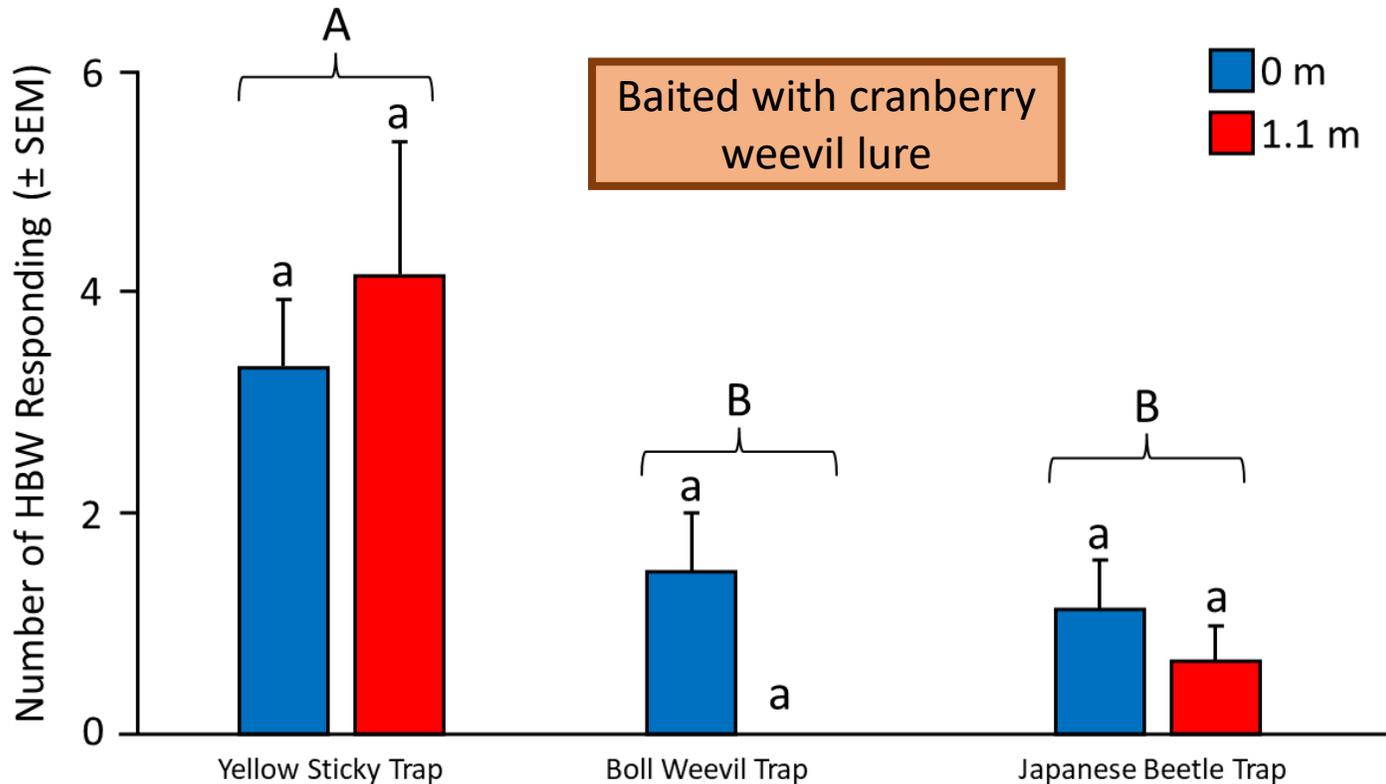
30 weevils
(15 F : 15 M)



Exploring market-available traps

Which trap type and trap height is most effective for capturing HBW adults?

- ❖ Three trap types: Japanese beetle, Boll weevil, Sticky trap
- ❖ Two heights: 0 feet and 3.6 feet (or 1.1 m)



0 feet



3.6 feet



Take-home messages

- ❖ Pheromones lures are cost-reliable, contributing for monitoring and control of weevils in agriculture.
- ❖ HBW males and females responded better to **cranberry weevil lures** placed on **yellow stick traps**.
- ❖ Essential attractant components for HBW are still absent in the formulation of congeneric lures (pheromones or plant volatiles?).
- ❖ HBW adults are likely to fly at heights between 0 and 3.6 feet to locate their host plants.
- ❖ Sticky yellow traps are recommended as an effective and economical alternative for to monitor for HBW within nurseries, greenhouses, and landscape settings.

Thank you!!!



FAIN: AP21PPQFO000C365

