

## Brown Marmorated Stink Bug (BMSB) – *Halyomorpha halys* :Biology and IPM Strategies in Almonds

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### Introduction: BMSB

- **Origin:** Native to East Asia; invasive in North America and Europe. NOT established in Australia.
- **Host Range:** Over 300 plant species, including almonds, peaches, and other stone fruits.
- **Damage:** Piercing-sucking mouthparts. Feeding causes nut drop, fruit gumming, and unmarketable kernels.

### Identification:

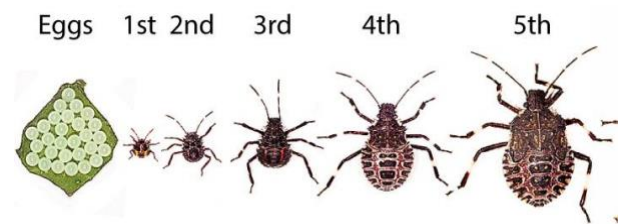
#### Adults

- **Size:** Approximately 15 mm long.
- **Coloration:** Marbled brown with alternating light and dark bands on the abdomen.
- **Distinctive Features:** Two white bands on the antennae and a smooth shoulder region.



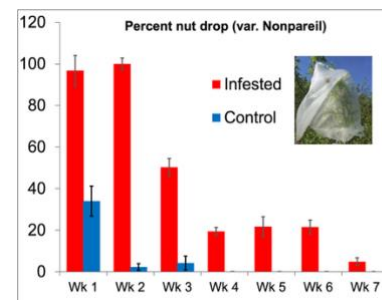
#### Nymphs (immatures)

- First instars: bright red-orange with black markings
- Other nymphs: marble-brown with some brighter colorations; distinct white bands on antennae



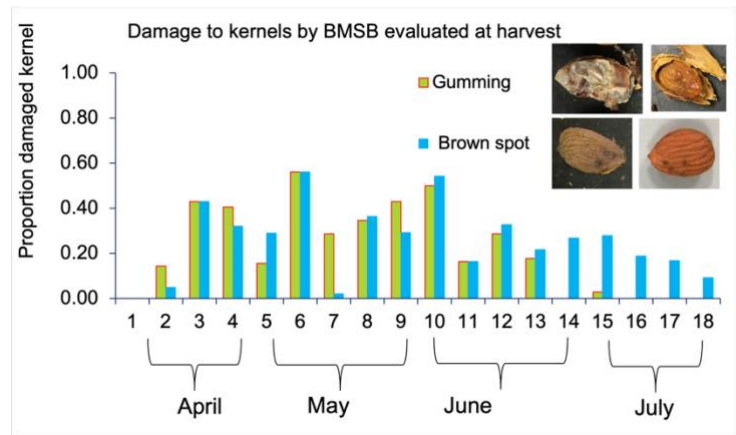
### Feeding Damage to Almonds:

- **Early Season** (before shell hardening): Nut abortion & drop; yield loss.



Wk1: One month after the bloom

- **Mid-to-Late Season:** Fruit gummosis, kernel damage from gumming kernel to necrotic kernel with “brown spot”



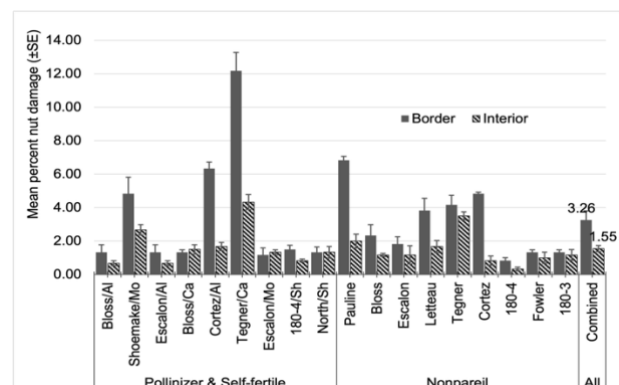
## Detection & Monitoring:

- **Trap Types:** Sticky panel or pyramid traps baited with aggregation pheromones, placed in the outside row. 1.2 m (= 4 ft.) high.
- **Monitoring Locations:** Orchard edges, near overwintering structures, and neighboring host plants.
- **Inspection:** Regular visual checks, especially during spring and early summer; beating tray sampling.



## Management Strategies:

- **Quarantine:** Report any suspected sightings to local biosecurity authorities (Australia)
- **Cultural Practices:** Remove wild hosts such as tree-of-heaven, *Ailanthus spp.*, and overwintering shelters near orchards.
- **Biological Control:** Research is ongoing into natural enemies like *Trissolcus japonicus*.
- **Chemical Control:** Use registered insecticides (pyrethroids) as per local guidelines.



## Resources:

BMSB monitoring video: <https://youtu.be/fc2qv7YtaWU?si=gegIEZBA-Y4skCrj> (or search on YouTube, BMSB monitoring in almonds)  
 Provisional guidelines: <https://ipm.ucanr.edu/PMG/r3303211.html> (or search in Google “provisional guidelines BMSB almonds”)