NJDA Non-Diapause Laboratory Rearing and Colony Maintenance of the Brown Marmorated Stink Bug, *Halyomorpha halys*

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General Rearing & Maintenance

- Long day **photoperiod**: 16L:8D
- **Temperature** maintained @76-78 F
- Relative **humidity** maintained @60-70%
- Rearing containers, boxes and cages are misted twice daily
- Green bean pods are replaced 3x/week
- Supplemental diet packs are replaced 2x/week or as needed
“Home Grown” Green Beans

• Beans are grown year round in the greenhouse
• Fresh green bean pods are the primary BMSB food source
• Four large plants are potted per week for colony maintenance
• Smaller plants are used for egg deposition and collection
Supplemental Artificial Diet

• Brown Marmorated Stink Bugs (nymphs & adults) are regularly supplied with an egg based *artificial diet* originally formulated for the tarnished plant bug, by Dr. Allen C. Cohen


• The diet is freshly prepared in the lab and dispensed into porous parafilm pouches of multiple sizes
Adult Oviposition Cages

- New adults are set up, in metal screened cages (13 ½ “ W x 12 ½ “ H x 16 ½ “ D) bi-weekly
- 50 adults (mixed sexes)
- Bean plant (for oviposition)
- Euonymus plant (for resting)
- Cardboard crating (for hiding)
- Paper towels lining the bottom
- Beans and diet elevated on wire screening
- Three cages (50 adults) are maintained and replaced every two weeks for routine rearing
Egg Collection

• Eggs are collected daily

• Females prefer to oviposit on **underside** of green bean leaves

• The five largest egg masses are placed on paper toweling in a vented round plastic container (5 ½” H X 5 ¼” diameter)

• Surplus eggs are held at **55-60 F & 50%-60% RH**

• Bean plants for oviposition are replaced weekly
Maintenance of Early Instars

- Eggs generally hatch in 5 – 6 days
- Following the first molt (2nd instars) are provided with young tender beans and a small artificial diet pack 3 X per week
- All egg masses and early instar (1st and 2nd) nymphs are misted twice daily
Late Instars and New Adults

- In approx. **18-21 days (3rd instar nymphs)** from five smaller rearing containers are combined and transferred to a large Plexiglass box (14 “ W x 14 “ H x 16 “ D)

**Each box contains:**

- Euonymus plant (for resting & molting)
- Cardboard crating (for hiding)
- Paper towel lined bottom
- Beans and diet placed on screen for feeding
Laboratory Colony Details

- PABIL “non-diapausing” colony started in 2011 from overwintering BMSB adults collected from Atco (Camden Co.), New Jersey

- Colony is now in its’ 20th generation and counting

- Development from egg to adult approx. 38-40 days

- Pre-oviposition period: 10-14 days

- Adult recovery: 30%-35%
Factors Contributing to Rearing Success

• a. No introduction of new field material?
  • If it ain’t green... don’t fix it

• b. TPB supplemental diet?

• c. “Home grown” green beans?

• d. TLC?

• e. All of the above