

# Protocol for stink bug monitoring by pheromone traps in Ohio, 2020

Supplies provided to each cooperator for one site for 6 weeks of trapping:

Item	Number
redwood posts, 5-foot x 1" x 1"	3 (1 per trap)
2-inch binder clips	3 (1 per trap)
clear double-sided sticky panels	6 panels (2 envelopes each with 3 panels) = 1 panel per trap per 2-week period)
packet of dual lures	3 packets of dual lures (1 packet per trap)
twist ties	27 (9 per envelope [way more than needed!]; one to anchor sticky panel at bottom center, one to attach the two lures to top of trap)
Pair of plastic forceps (for scraping stink bugs off of sticky panels)	1
Disposable latex gloves (to wear when changing panels)	3 pairs
Small plastic petri dishes (if needed, to save specimens)	6
<b>Reference materials:</b> <ul style="list-style-type: none"> <li>• Picture of trap showing lures, twist-ties, binder clip.</li> <li>• Specimens of adult female and male brown marmorated stink bugs (BMSB) glued in plastic dish.</li> <li>• Close-up enlarged picture of underside of female vs male of BMSB.</li> <li>• Close-up actual-size laminated picture of 5 nymphal instars of BMSB.</li> </ul>	1 of each

**Type of site:** If there is a **woodlot or tree line** near the field or orchard, the traps should be along the edge of that area. If no treeline is in the area, then the traps should be along the **edge** of the crop field or orchard, not inside the crop field. Suitable crops include apple, peach, raspberry, grape, bell peppers, eggplant, sweet corn (late planting), swiss chard, green beans. We prefer these specialty crops if possible, but soybeans are also acceptable.

**Number of traps:** Each site should have 3 traps, **spaced 50 meters (= 164 feet) apart**.

**Type of trap:** We are using a **clear double-sided sticky plastic panel** that is attached to a **5-foot wooden post**. Each panel is 6 x 9 inches. This type of trap catches fewer stink bugs than the tall pyramid traps or the PVC pipe traps that we used previously, but it is less expensive and more easily replaced if damaged.

**Lure:** The lure is made by Trécé Inc. It is a 'dual' lure, which means that it comes in two pieces, one fat black square and one thin black rectangle, that both must be deployed on the same trap. **The two pieces should be deployed next to each other on a single twist-tie at the top of the middle of the trap.** A convenient place to put them is between the arms of the binder clip that holds the sticky panel to the wood post (see picture).

**Set-up date:** as close as possible to **August 17th**.

**Take-down date:** as close as possible to **September 28th**.

**Set-up tools:** A **hammer or mallet** will be needed if ground is not soft enough to poke in the wood stake. If any branches of shrubs or trees are within a foot of the trap, then it is good to use **pruners** to cut back these branches so that they will not get stuck to the trap under windy conditions. **Disposable latex gloves** are being provided to

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keep your hands from getting hopelessly sticky while getting the panels set up. Be sure to remove the plastic cover on each side of the panel during trap set-up, so that the sticky surfaces are fully exposed. A **large nail** or forceps or other sturdy thin object is handy for punching out the 2 small circles near the edge of the sticky panel to make 2 holes in which the twist-tie can be inserted. If your hands get sticky, you can bind up the goo by patting your hands in dry dust, or carry a small bottle of cornstarch to use instead of dust, or use a hand cleaner from an auto parts store (FastOrange, Goop, GoJo).

How to check traps: Checking traps involves a close look at both sides of each sticky panel, and counting and recording the number of BMSB, then scraping them off with the plastic forceps or a sturdy twig. A suitable approach is to pick a nearby leaf and use it as a substrate for receiving the sticky wiped-off bugs. It is recommended to NOT use the wood post as a place to deposit the scraped-off bugs!

Data to record: **the number of adult BMSB males, number of adult BMSB females, and number of BMSB nymphs.**

We are providing specimens of the adult male and female BMSB, and tips for how to distinguish these.

Finding the **nymphs** takes a closer look than finding the adults. We ask that nymphs be categorized as **small** (instars 2 and 3) or **large** (instars 4 and 5).

Species of stink bugs other than BMSB are sometimes found on traps, especially the harlequin bug, which is orangish-red and black. It is **optional** to record presence of stink bug species other than BMSB.

If you would like verification of species or gender, you can gently scrape the bug specimens off of the trap, place them in a small petri dish (provided), label it, and send it to Celeste or Jim.

Data posting: A chart is set up in Google Drive with a master summary sheet on the first tab, followed by a tab for each county. We will send you the link via e-mail. We request that you post your counts as soon as possible after your traps are checked. Please enter your numbers on both the summary tab and on your county tab. **If your numbers are ZERO, that is useful information! Please post any zeros!!** Be sure that you do not place your numbers in someone else's columns or rows; beware that **entries are saved instantly** on Google Drive.

Frequency of trap checking: Traps should be checked a minimum of **once every 2 weeks**. If possible, traps should be checked more frequently, **once per week** is ideal during the peak season of August and September.

Sticky panel replacement: A variety of insects, flower petals, dust, and other debris will build up on the sticky panels, making them less effective at catching the target pest and more difficult for you to see the target pest. Your supply of panels allows for panel replacement **every 2 weeks**. If a panel still looks fairly clean after 2 weeks, it is fine to leave it for additional time to save you the work of changing it. It is helpful to take along something to use as a **trash bag** for the used panels, can be the same envelope that fresh panels were in, or a shopping bag, generally paper shopping bags are more manageable with the sticky panels than plastic shopping bags. Helps to wear the disposable latex **gloves** while changing panels. A recommended routine on the day of panel change is to walk down the line of traps just recording data, then do the panel replacement on the way back.

Lure replacement: You will **not** need to replace the lures during our target 6-week trapping period. These lures are very long lasting; they need to be replaced every 12 weeks.

Lure storage: Lures should be stored in a freezer until ready to deploy in the field.

Travel cost reimbursement: Cooperators can submit the standard extension day trip form at the end of each month if travel reimbursement is needed. Please send forms to Celeste Welty.

### Questions?

Please contact Celeste Welty, [welty.1@osu.edu](mailto:welty.1@osu.edu), office phone 614-292-2803, cell phone 614-746-2429. or Jim Jasinski, [jasinski.4@osu.edu](mailto:jasinski.4@osu.edu), office phone 937-484-1537, cell phone 937-441-7454.