Barrier screens reduce damage from brown marmorated stink bug

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The brown marmorated stink bug, first identified in the United States in Pennsylvania in the mid-1990s, has spread to at least 42 states and two Canadian provinces. The invasive pest has been able to rapidly extend its range because of its ability to overwinter in heated structures. "As the populations of the brown marmorated stink bug build within invaded territories, the stink bug progresses from a household nuisance into a major agricultural pest that can inflict massive crop yield losses during outbreak years," noted Rachelyn Dobson, lead author of a study in the April 2016 issue of *HortTechnology*.

According to the study, crop damage attributed to the brown marmorated stink bug can be significant: injury on sweet corn has reached 100% in some fields in the US, and injury to crops such as pepper, tomato, eggplant, and okra has exceeded 20% in research plots. The authors said that the economic damage inflicted by the invasive stink bug, coupled with a lack of effective control options, have created an urgent need for new controls to combat the pest.

Dobson and researchers Mary Rogers, Jennifer Moore, and Ricardo Bessin created experiments using plastic mesh barrier screens with different mesh sizes to determine their ability to exclude the brown marmorated stink bug, provide entry to beneficial species, and produce a high percentage of marketable yield in organically grown bell peppers. Field studies were conducted during two summer growing seasons at sites in Kentucky and Tennessee. Barrier screen treatments included 1/6-inch, 1/8-inch, and 1/25-inch white mesh, along with unscreened

controls. Black 1/25-inch mesh screens were tested in place of the white screens at the Kentucky site during one season.

Results showed that the fine-mesh plots in both locations excluded insects, including beneficial and pest species, and that the barrier screens were effective in reducing stink bug injury on the peppers.

The researchers recommended lighter colored, and/or wider meshes (1/8-inch or 1/6-inch) to allow the entry of sunlight and beneficial species for areas in which small populations of brown marmorated stink bug are found. "In areas with higher (brown marmorated stink bug) pressure, finer meshes (1/25-inch) may exclude larger populations of pests and protect the crop from sunscald," they noted.

"Selecting the appropriate type of screen potentially could provide greater protection than current organic control options against this pest," the authors said. "In some cases, the use of fine mesh screen houses could even potentially be more cost-effective than large amounts of pesticides used by conventional growers in areas with high brown marmorated stink bug densities."

More information: *HortTechnology*, horttech.ashspublications.org/ …nt/26/2/191.abstract

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