Adult Flatheaded Borer Attraction to Traps in the Vicinity of Vegetation Damaged by Mowing or Herbicides and Implications for Nursery Tree Attacks

Flatheaded borers (Coleoptera: Buprestidae) are common wood-boring pests in nursery production systems. Some adult flatheaded borers have increased attraction to plant-related volatiles. The objective of this study was to determine whether common vegetation management used by nursery producers and their timings may increase the risk of tree crop damage from buprestids. Vegetational damage treatments included glyphosate (Gly-Star herbicide), pelargonic acid (Scythe herbicide), or mowing applied during May, June, or July and an extension recommended February timing of Gly-Star. Plant stress treatments were applied to ground foliage in 3 by 3 m plots near a forested border and were replicated four times in a randomized complete block design with 5-m between treatment plots and 10-m between replications. Each treatment plot had three corrugated purple traps, 1-m tall folded into a prism-shape with 7.6 cm wide sides, sheathed over metal stakes and covered with Pestick insect glue, which were checked weekly for adult buprestids. Buprestids captures were compared among treatments using a Generalized Linear Interactive Model (GLIM) with a negative binomial distribution and means separated by Lsmeans. Four flatheaded borer genera were captured, including *Chrysobothris* (59.8%), *Agrilus* (33.9%), *Acmaeodera* (5.4%), and *Dicerca* (0.8%). To date, 16 species have been identified with six belonging to the *C. femorata* species complex. The percentage of adult buprestids caught in the Gly-Star May treatment was significantly higher (χ^2=7.42, df=3, *P*=0.05) than the extension recommended February Gly-Star timing or other herbicide and mowing treatments. In conclusion, May applications of Gly-Star increased adult buprestid traps captures, indicating greater localized wood borer activity near early summer herbicide-damaged foliage and potentially a higher risk of borer attack to nursery tree crops. We thank USDA-NIFA Evans Allen and Specialty Crop Research Initiative (award no. 2020-51181-32199) for partial funding of the research.