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SPOTTED LANTERNFLY (*LYCORMA DELICATULA*) HONEYDEW VOLATILES ATTRACT CONSPECIFICS

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ABSTRACT

The Spotted Lanternfly (SLF) (*Lycorma delicatula* (White)) is a phloem-feeding planthopper native to China that is now invasive to the U.S. SLF attacks and inflicts serious damage on several plant species, including grapes, hops and a host of native deciduous hardwood trees. SLF are known to aggregate in large numbers, but the precise mechanism behind this behavior is not yet known. Research into chemical attractants that may mediate aggregation and mate-finding in SLF is underway, with the goal of developing potent and specific lures for monitoring and managing this pest. SLF excrete copious amounts of honeydew while feeding. Honeydew is a source of semiochemicals in some other insect species. We described the volatile profile of adult SLF honeydew and tested compounds for antennal and behavioral activity using gas chromatography coupled with electroantennographic detection (GC-EAD), and dual choice olfactometer bioassays. Three ketones – 2-heptanone, 2-octanone, and 2-nonanone – were identified as attractants in the y-tube olfactometer, with 2-heptanone being attractive to males while the other two ketones attracted females. A fourth compound, benzyl acetate, elicited strong antennal responses and significant attraction in the y-tube for both sexes. Lures containing benzyl acetate and the ketones have been field tested and results are currently being analyzed. Additional lure development and field testing is planned for the future.