



Disruption of reproductive behavior of grapevine cicada, *Cicadatra alhageos*, by acoustic signals playback

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Abstract

The grapevine cicada, *Cicadatra alhageos* (Kolenati) (Hemiptera: Cicadidae), is a key pest of grapevine (*Vitis* spp., Vitaceae) in the Middle East. The main damage is caused by nymphs that feed on root sap, and adults that oviposit on branches. As males produce sound to attract females, one of the control methods can be disruption of sexual communication. Disruptive effects of acoustic playbacks on singing males were studied. Signals (0.5–10 kHz) were broadcast to disrupt male calling behavior. Playback of acoustic signals interrupted male sexual signalling. To reduce female oviposition behavior in the field, an experiment was conducted based on a completely randomized design with two treatments (control vs. acoustic broadcasting) and four replications over a period of 3 years. Playback of disruption signals in the field reduced female oviposition on grapevine branches that were close to the signal source. Therefore, application of acoustic stimuli may be an effective and low-cost control method against grapevine cicada.
