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CALLING BEHAVIOR OF ZAMAGIRIA DIXOLOPHELLA  
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The sapodilla bud borer, Zamagiria dixolophella Dyar, has been reported attacking the sapodilla Manilkara zapota van Royen in Mexico (Iruegas et al. 2002). The larvae feed on the tender young shoots and fruits. Current control of this species is based upon the use of insecticides; however, chemical control of this pest is difficult due to its cryptic nature. Mating disruption may be an alternative for controlling it. Although in Z. dixolophella the pheromone has not been identified yet, it would be worthwhile to understand the influence of different factors in the release of pheromone to obtain a complete picture of the factors governing the biology of the female sex pheromone system. Production and release of the sex pheromone in many moths is influenced by several biotic and abiotic factors (Landolt & Phillips 1997; Rafaeli 2002). In this study, we investigated the possible effect of host plant and the photoperiod on the calling behavior of Z. dixolophella under laboratory conditions as a first step to identify the sex pheromone.

Larvae of Z. dixolophella were collected in M. zapota orchards “El Nayar” (14°49’36”N and 92°20’52”W at 44 masl) and “Cazanas” (14°44’40”N and 92°24’20”W at 20 masl), both located between Tapachula City and Puerto Madero, Chiapas, Mexico. Larvae were held in 3-L clear plastic cylindrical containers (23 cm height × 14 cm diameter), and allowed to feed upon their host plant (tender young shoots) in controlled conditions at 25 ± 5°C and 65 ± 5% relative humidity. A drop of natural honey was placed daily on an 1993). Virgin females of Heliothis zea (formerly
Zamagiria dixolophella (Boddie) (Raina et al. 1992) and Heliothis phloxiphaga G. and R. (Raina 1988) synthesized and released pheromone only in presence of their host plants. However H. zea females reared in laboratory for many generations did not require the host plant for the production and release the pheromone (Raina 1988). In presence of its host plant, females of Plutella xylostella (L.) began calling at a younger age and they spent more time calling (Pittendrigh & Pivnick 1993).

The percentage of calling females was similar in the two photoperiods evaluated. The mean daily onset time of calling was significantly different under the photoperiods tested, but this parameter was not affected by female age. The interaction between age × photoperiod was not affected by female age. The interaction between age × photoperiod was influenced by female age. Also, the length of the calling period differed significantly independently of the presence or absence of host plant. The mean onset time of calling and the mean time spent calling. There was an effect of photoperiod on the mean onset time of calling and the mean time spent calling of different photoperiod conditions at different times of the year.

In conclusion, this study shows that the calling behavior of Z. dixolophella is influenced by the photoperiod, but not by the presence of host plant. This information will be useful during the collection and identification of sex pheromone.

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**Summary**

The influence of host plant and photoperiod on calling behavior of the moth Zamagiria dixolophella, a sapodilla pest in Mexico was investigated under laboratory conditions. Most of the females called from their first scotophase independently of the presence or absence of host plant. Also, the host plant did not influence the mean onset time of calling and the mean time spent calling. There was an effect of photoperiod on the mean onset time of calling and the mean time spent calling of Z. dixolophella.

**References Cited**


