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PRESENTATION

0429: Stink bugs (Pentatomidae) feeding behavior on plants and laboratory rearing

Sunday, November 17, 2019
04:25 PM - 04:40 PM
America's Center - Room 275

Phytophagous stink bugs (Pentatomidae) feed by inserting their stylets (mandibles + maxillae) in plant tissues. Two feeding strategies are used: stylet sheath and cell rupture. In the first, a stylet sheath of jellifying saliva covers stylets. The sheath is formed during the stylets pathway to reach the plant vessels (xylem and phloem). They remain in the plant tissue and the external parts (flanges) may be used to estimate feeding frequency. In the second, less jellifying saliva is produced to form an incomplete sheath at the beginning of the stylets insertion (pathway). In this strategy two tactics are used: dilaceration, and maceration. During dilaceration, stylets moved fast, deep in a continuous mode, causing mechanical cell destruction. During maceration, stylets move slowly to spread digestive enzymes that degrade cells contents. Later, the slurry produced is ingested. Stink bugs, different from other sucking insects, use the two strategies simultaneously, this considered and evolution in the feeding process. Moreover, some species may use both feeding strategies on the same plant, according to the feeding site. For example, electropenetrography (EPG) studies with *Piezodorus guildinii* (Westwood) demonstrated that they use stylet sheath feeding from xylem vessels of leaves, stems or pods of soybean plant, changing to cell rupture when exploring the seed endosperm. Stink bug rearing in the laboratory has been conducted traditionally by using green beans pods plus raw shelled peanuts seeds, as food sources. Success with artificial diets to keep stink bugs colonies in the laboratory is limited, and will be presented and discussed.

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