Identification, Incidence and Characterization of Gall Midges Affecting Hot Peppers in Jamaica

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[Abstract]
A series of studies was conducted in an effort to identify and characterize the gall midges affecting hot peppers in Jamaica. These studies included investigations into the epidemiology of the pest, its morphology, biology and ecology. Two surveys were conducted in order to obtain information on pest epidemiology and ecology. Adults and larvae were mounted in Canada balsam from microscopic studies of the insect morphology and rearing cages were set up to determine the life cycle. Molecular characterization was also included with SDS-polyacrylamide gel electrophoresis of protein samples and agarose gel electrophoresis of DNA samples removed from the gall midges. Results revealed the presence of two species of gall midges infesting Jamaica's hot peppers. One species infest the flower buds while the other infests the fruit pedicel. In addition to host preference, differences between the two species were revealed by the adult morphology. Taxonomic keys were unable to separate the species suggesting that they are closely related. This was further strengthened by similarities in the protein profiles obtained for the two species. Both species were morphologically similar to members of the genus *Prodiplosis.* The pedicel midge is the more economic of the two. It infested more farms islandwide and resulted in scarred, sometimes unmarketable, fruits. It is also the species more likely to be found in export boxes. The study confirms the importance of the gall midges as major pests of hot peppers and the need for additional work to identify and further characterize them.

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