

ARTHROPODS ASSOCIATED TO THE CULTURE OF AVOCADO (*PERSEA AMERICANA* MILL.) IN COSTA RICA

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Avocado is a plant from tropical and subtropical regions of Central America and Mexico. Therefore, Costa Rica has both the agronomic and climatic conditions necessary for avocado cultivation, which also favors that different insects and mites establish associations with the plant. Several organisms, some better known than others, are direct responsible of crop losses in avocado orchards and even of the death of trees. Other organisms, indirectly and with less importance, could be vectors for unknown diseases or could become important pests in the future. Currently, knowledge about insects affecting avocados in Costa Rica is based in old or incorrect references and, therefore, an update of the information is required to understand the biology and ecology of insects and mites that feed on avocado, as well as their potential natural antagonists.

Starting in 1995, we have visited commercial and research orchards (conventional and organic), nurseries and wild plants in the main avocado producing areas in the country. The visits were made randomly and all year round, with the aim to harvest the specimens (eggs, nymphs, larvae and adults) that were feeding on avocado trying to study total o partially their biological cycle, in the different phenological stages of growth of the trees and over one or various types of organs of the tree. Samples were harvested both manually and with different kind of traps (yellow adhesive, Moericke type beat traps), transferred and analyzed under laboratory conditions. We harvested and bred 56 Lepidopteran species (14 families), 35 Coleopteran species (6 families), 2 Hymenopteran species (2 families: Apidae and Formicidae), 28 Homopteran species (9 families), 6 Heteropteran species (3 families), 1 Dipteran (1 family: Cecidomyiidae), 10 Thysanopteran species (2 families), 1 Isoptera species (1 family) and 4 Acari species (1 family: Tetranychidae). We have bred 8 parasitoid Hymenopteran families (15 genera, identified until now) 129 times, and 8 genera of parasitoid flies from the Tachinidae (Diptera) family 20 times. Specialists from a range of national and international institutions have participated in the identification of the different species. In spite of the high diversity of insects harvested, only a few, that have also been reported in other American countries, can be considered to reach a threshold of economical importance under the current orchard managing conditions in Costa Rica.