

Chapter 1

Introduction

The coconut industry contributed 6% (about US \$31.1M) to Jamaica's Gross Domestic Product in 1995. In 1996 output from the industry was expected to increase to US \$32.3M. The coconut industry provides employment for some 35,000 people in Jamaica. At the end of 1994 there were approximately 8500 registered coconut farmers (each having at least 100 coconut trees). The total area under production in December 1993 was 15,957 ha., about 13,202 ha. with trees bearing nuts. These figures represent a great recovery from the 1988 hurricane which caused great destruction on 23,807 ha. of coconut trees. The Coconut Industry Board (CIB) has been promoting a rapid replanting program to allow the local industry to regain its original economic position (Williams, pers. comm.) and the production of coconut is increasing on the island. Ninety-seven percent of the total coconut produced in Jamaica goes toward household use.

Records show that over the past five decades the coconut industry in Jamaica has experienced recurrent hurricanes and many pest problems, including those associated with the coconut mite, *Eriophyes guerreronis* (Keifer). These problems have resulted in an ongoing effort to keep the industry alive. The coconut mite is now the major pest of coconut in Jamaica and is spreading rapidly throughout the island (Steer, unpublished). Its feed injury retards fruit development by causing the development of broken striations of the exocarp which arrest subsequent growth at the point of attack (Julia and Mariau 1979, Hall 1981, Anonymous 1985).

The coconut mite has proven to be difficult to control. A wide range of chemicals has been employed to control it over the past two decades but the results have not been satisfactory. Good plant husbandry has been recommended to alleviate the economic impact of the mite on coconut production. In the mean time, research has been directed toward the identification of resistant coconut varieties and biological control agents.

Although the coconut mite is an international pest, its biology has not been researched to any great extent. Keifer *et al.* (1982) lamented the "surprising" neglect of research in eriophyid systematics "considering the group's economic importance". They also noted that literature on eriophyids is "generally scattered and fragmented". There is urgent need for comprehensive research in all areas of biology, economic importance and management of eriophyids, particularly, *E. guerreronis*.

The objectives of this thesis were 1) to review the available literature regarding the coconut mite, its host, and their interaction; 2) to survey the distribution and extent of damage caused by the coconut mite in two of the three main coconut growing areas in Jamaica; 3) to describe the seasonal variations in coconut mite damage on Maypan and Red Malayan Dwarf coconut varieties; 4) to compare the population fluctuations of the coconut mite on Maypan and Red Malayan Dwarf coconut varieties; and 5) to evaluate the yield loss due to coconut mite damage on selected farms in eastern Jamaica.

References

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