



Impacts of continental invasion of *Raoiella indica* in the Americas*

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FIGURE 1. *Raoiella indica*, the Red Palm Mite, feeding through the stomata of a coconut leaf.

The invasion of the Red Palm Mite (RPM), *Raoiella indica*, in the western hemisphere, is probably the most extensive, fastest, and better-documented plant pest arthropod invasion in recent decades. RPM was initially detected in the Lesser Caribbean Antilles, and it rapidly spread hooping through the islands and reaching continental areas in North, Central and South America. The mite's direct feeding damage severely affected countless palms (Carrillo *et al.* 2012a), reshaping the naturalized tropical coastal coconut palm landscapes. We observed direct negative impacts on natural areas, coastal erosion, tourism, crop yields, and the coconut-associated agroindustry. Rapid efforts were established to identify natural enemies (Carrillo *et al.* 2012b), select chemical control (Rodrigues and Peña 2012) and develop pest management practices. The severe damage inflicted on coconut palms and other hosts, and the quick collaboration among scientist networks allowed a

close to real-time monitoring of the invasion, a better understanding of mite life history, and the identification of management solutions. Detailed studies of the spatial distribution of the mite within a palm tree and at a continental scale were completed. We estimated that from a single population introduction, the mite spread at a rate of 400 to 600 km per year, reaching 24 countries in the Americas. RPM tracking allowed for identifying dispersal pathways in small and large areas, and improving models (Rodrigues *et al.* 2020). After close to two decades since the first RPM detection in the western hemisphere, several questions remain unanswered about the mite dispersion, its management, and its persistent impacts on environmental services and coconut production.

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