

**Detection and Identification of *Philephedra tuberculosa*<sup>1</sup> on Cotton in South Texas**G. Esparza-Díaz<sup>2</sup>, S. Armstrong<sup>3</sup>, and R. T. Villanueva<sup>2\*</sup>

*Philephedra tuberculosa* Nakahara & Gill (Hemiptera: Coccidae) is a soft scale that feeds on the trunks, stems, and leaves of more than 50 plant species. This soft scale damages plants by removing sap and excreting honeydew, which serves as a growth medium for sooty mold fungi. Abundant scales can cause extensive damage to the plants including stem dieback and eventually death. Miller (1996) reported that *P. tuberculosa* was found in Mexico, the United States of America (Florida and Texas), Colombia (Kondo 2001), Costa Rica, Ecuador (Malumphy 2009), Guadeloupe, Nicaragua, Saint Croix, Saint Martin, St. Barthelemy (Matile-Ferrero and Étienne 2006), Guatemala (Williams 2010), Haiti (Perez-Gelabert 2008), and Venezuela (Ben-Dov 1998). Hodges (2008) reported that *P. tuberculosa* is an exotic pest in Broward, Duval, Indian River, Lee, Miami-Dade, Monroe, Orange, Palm Beach, Pinellas, Putnam, and St. Lucie counties, all in Florida.

Although *P. tuberculosa* was reported in La Feria, Cameron County, TX, by Ben-Dov (1998), the host plant was the ornamental Brazilian pepper, *Schinus terebinthifolius* (Anacardiaceae). Cotton, *Gossypium hirsutum* L. (Malvaceae), was reported as host of this species in the French Antilles in the Caribbean (Matile-Ferrero and Étienne 2006). However, this is the first report of the presence of this insect on cotton plants in Texas. The pest was found on 19 July 2011 in a commercial cotton field near Edcouch, Hidalgo County, TX (26°17'40"N, 97°57'48"W; elevation 21 m above sea level), with only a few plants that were very infested. The cotton was fruiting with both florets (squares) and fully formed cotton bolls. Mature ovisacs from *P. tuberculosa* were attached to the upper one third of the stems and some fruiting forms, where the crawlers were active and exiting the ovisac. Cotton tissue samples were taken to the USDA ARS laboratory, Weslaco, TX, and within 24 hours were sent to the Division of Plant Industry, Florida Department of Agriculture and Consumer Services where Ian C. Stocks made permanent slides and identified the insect as *P. tuberculosa*.

In 2011, 81,000 hectares of cotton were planted in the Rio Grande Valley (approximately 3.3% of the total cotton hectares planted in Texas). Furthermore, Texas now produces almost 50% of the USA cotton crop annually, with substantial improvements in yield and fiber quality during the past decade (Kelley et al. 2011). The Rio Grande Valley is an area bordering Mexico and with continuous movements of plants crossing back and forth between the two countries. This pest

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is present in cotton fields of the Campo Experimental Río Bravo in Tamaulipas, Mexico, as was verbally confirmed by the authority program of Evaluation of Cotton Varieties, Pest Management and Fertility of Highly Productive Cotton in Northern Tamaulipas. Although the presence of this insect in Texas was known, it was not previously reported from cotton. Here we record this insect affecting cotton plants. However, we do not know of the risk of this insect as a potential pest of cotton in Texas and other areas of the USA.

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### References Cited

- Ben-Dov, Y. 1998. A systematic catalogue of the soft scale insect of the world. Flora and Fauna Handbook 9. Sandhill Crane Press, Incorporated, Gainesville, FL.
- Hodges, G. 2008. A New Exotic Soft Scale Insect on Croton in South Florida (Hemiptera: Coccoidea: Coccidae). [www.freshfromflorida.com/pi/enpp/ento/coccoidea\\_coccidae.html](http://www.freshfromflorida.com/pi/enpp/ento/coccoidea_coccidae.html), accessed 30 August 2011.
- Kelley, M. S., J. D. Wanjura, R. K. Boman, and C. Ashbrook. 2011. Harvest timing and techniques to optimize fiber quality in the Texas High Plains, pp. 41-46. In R. Boman and M. Kelley [eds.], Systems Agronomic and Economic Evaluation of Cotton Varieties in the Texas High Plains, 2010 Final Report. Lubbock, TX.
- Kondo, T. 2001. The scale insects of Colombia (Hemiptera: Coccoidea). *Biota Colombiana* 2: 31-48.
- Malumphy, C. 2009. First interception in Europe of *Philephedra tuberculosa* Nakahara & Gill (Hemiptera: Coccidae), a neotropical pest of ornamental plants and fruit crops. *Entomologisk Tidskrift* 130: 109-112.
- Matile-Ferrero, D., and J. Étienne. 2006. Cochenilles des Antilles françaises et de quelques autres îles Caraïbes (Hemiptera, Coccoidea). *Revue Française d'Entomologie* 28: 161-190.
- Miller, D. R. 1996. Checklist of the scale insects (Coccoidea: Homoptera) of México. *Proceedings of the Entomological Society of Washington* 98: 68-86.
- Perez-Gelabert, D. E. 2008. Arthropods of Hispaniola (Dominican Republic and Haiti): a checklist and bibliography. *Zootaxa* 1831: 1-530.
- Williams, M. L. 2010. Annotated list of the scale insects of Guatemala. *Entomologia Hellenica* 19: 144-152.