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Towards Improved Utilisation and Conservation of the Multipurpose Tree *Cordia dodecandra* in Yucatan, Mexico

JOSU ITURBE¹, JUAN J. JIMÉNEZ-OSORNIO², PETR KARLOVSKY¹, HOLM TIESSEN¹, BRIGITTE L. MAASS¹

¹Georg-August-University Göttingen, Department of Crop Sciences, Germany

²Universidad Autónoma de Yucatán, Departamento de Manejo y Conservación de Recursos Naturales Tropicales (PROTROPICO), México

Abstract

The tree ‘Ciricote’ (*Cordia dodecandra*: Boraginaceae) is distributed naturally in Mexico, Guatemala, Belize and Honduras, where it is an important component of dry tropical forests and thickets. This traditional multipurpose tree is frequently found in Maya home-gardens and plays an important role for livelihoods. The edible fruits are used to make preserves and jams, among others. Its yellow colour with dark red streaks makes the wood valued in manufacturing furniture and handicrafts. Occasionally its value is even higher than that of mahogany. Therefore, Ciricote can constitute an additional source of income for smallholders. As severe deforestation and land use change took place in much of Central America, the few natural stands of Ciricote left are threatened by genetic erosion. Because of its environmental adaptation and economic potential, however, Ciricote has been considered an appropriate species to reforest substantial areas of degraded land in Yucatan. However, there is hardly any information available about the provenance of planting material used in nurseries or the genetic structure of populations in general. Therefore, the present study focuses on estimating levels of genetic diversity in Ciricote by using both morphological traits related to wood and fruit characteristics as well as molecular markers, AFLPs in this case. Overall six Ciricote populations isolated from each other, two each from the states of Campeche, Quintana Roo and Yucatan have been characterised. Leaf samples have been collected from about 25 trees per population for laboratory analysis. Comprehensive data analysis by multivariate statistical procedures has been performed. The GIS-base computer tool FloraMap has been applied to predict both the distribution of Ciricote in the wild and its potential climatic adaptation. Results may, therefore, assist in selecting most appropriate germplasm for the promotion of Ciricote as well as areas climatically suitable for reforestation. Due to the better understanding of the diversity contained in populations, on the other hand, it is likely that the conservation of this multipurpose species will be improved through its utilisation.

Keywords: Agroforestry, genetic resources, molecular marker, multipurpose tree, underutilised crop