

3rd International Conference on **Biodiversity & Sustainable Energy Development**

June 24-26, 2014 Valencia Conference Centre, Valencia, Spain

Stingless bees are efficient pollinators of the biofuel plant *Jatropha curcas* (L.) (Euphorbiaceae) within its native range

Isidro Ovando, M Rincon Rabanales, L Adriano Anaya, S Ruiz Gonzalez, A Vazquez Ovando and M Salvador Figueroa
Universidad Autonoma de Chiapas, Mexico

Jatropha curcas (L.) is a promising biofuel plant, whose centre of origin is the Mesoamerican region. Several studies about the reproductive biology of *J. curcas* have been conducted in regions where that plant is an exotic species, for example in Asia. An accepted knowledge is that *Apis mellifera* is an efficient pollinator for *J. curcas*. For that reason, we conducted an observational investigation to test the hypothesis of the efficiency of that and other flower-visiting insects in a site within the *J. curcas* native range. In addition, we studied the main characteristics of flowering and reproductive system. The plants were monoecious with inflorescences of unisexual flowers. The male flowers produced from 3062 to 5016 pollen grains (266-647 per anther). The plants produced fruits with both geitonogamy and xenogamy, although insect pollination significantly increased the number and quality of fruits. A high diversity of flower-visiting insects (36 species) was found, of which nine were classified as efficient pollinators. The native stingless bees *Scaptotrigona mexicana* (Guérin-Meneville) and *Trigona* (*Tetragonisca*) *angustula* (Latreille) were the most frequent visitors and their presence coincided with the hours when the stigma was receptive. Remarkably, *A. mellifera* was not an efficient pollinator for *J. curcas* under the conditions of the study. It is noteworthy that the female flowers open before the male flowers, favoring xenogamy, which may explain the high genetic variability, reported in *J. curcas* for this region of the world.

Biography

Isidro Ovando has completed his PhD at the age of 35 years from Universidad Nacional Autonoma de Mexico. He is an Associate Professor at Universidad Autonoma de Chiapas, where he investigates the diversity and biotechnology of *Jatropha curcas* and other tropical crops. He has published more than 20 papers in reputed journals and is a member of the National Researchers System (Mexico).

ibtmedina@gmail.com