

SUMMARY

Agroecological zoning for avocado (*Persea americana* var. *drymifolia* Schlecht. et Cham Blake) in Mexico

Currently, Mexico is the world leader in production and export of avocado (*Persea americana* Mill.). In 2015, our country reported exports for 774,600 tons of avocado, valued in 1,500 million dollars. Also, production was 1.6 million tons, 6.6% more than the previous year. *Persea americana* presents different varieties that have emerged in different ecological environments and domestications for different cultures of Mexico and Central America, giving origin to the edible avocado that is consumed today. For *P. americana* the widely known varieties are: Mexican (*P. americana* var. *drymifolia* (Schlecht et Cham Blake)), Guatemalan (*P. americana* var. *guatemalensis* (Williams)) and Americana (*P. americana* Mill. var. *americana*). *Persea americana* var. *drymifolia* (wild criollo thin shelled avocados) is found in mesophilous mountain and Lauraceas forests. Conservation status of this variety is very precarious and its original surface has been reduced by the opening of new areas for agriculture and livestock, and also for overgrazing, forest fires, advancement of urban areas and logging. Thus, a considerable part of the enormous plant genetic resources of *Persea americana* var. *drymifolia* are threatened by the destruction of these ecosystems and by the substitution of traditional cultivars for improved ones. It is therefore important to examine their current and potential distribution to develop strategies for its conservation and sustainable use. In the present study, a proposal of agroecological zoning for cultivation of *Persea americana* var. *drymifolia* in Mexico was developed. In order to do so, we used the Maximum Entropy model (MaxEnt) and the Geographic Information System (GIS). The agroecological zoning model was developed using thematic layers of altitudes in the study areas, georeferenced sites of *Persea americana* var. *drymifolia*, slopes, climatology, temperature, precipitation and soil. The treatment of thematic layers is on a scale of 1:1,000,000, the distance of the different parameters of the zoning model was calculated through the use of maps. The most suitable places for Mexican avocado cultivation from the most important to the less probable were established. There were determined as areas with agroecological potential for Mexican avocado: The Sierra Madre Occidental (Jalisco), the Sierra Madre Occidental (Jalisco, Michoacán, Mexico, Puebla and Veracruz), the Sierra Madre Oriental (Nuevo León, Hidalgo, Puebla Tlaxcala and Veracruz), Sierra Madre del Sur (Jalisco, Michoacán, Guerrero, Oaxaca, State of Mexico) and Sierra Madre de Chiapas (Chiapas).

Key words: Avocado, model MaxEnt. conservation, potential areas