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Avocado cv. Hass zoning based on aptitude, competitiveness and sustainability criteria

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A study of land use zoning was done on a semi-detailed scale 1:25.000 to classify the Department of Antioquia in Colombia according to its aptitude and competitiveness for Persea Americana cv. Hass. The FAO land zoning and the UPRA (Rural Agricultural Planning Unit) 1:25.000 methodologies were both used subjected to adjustments. Four dimensions were considered in the study: biophysical, economic, social and technological. The biophysical attitude map was realized through secondary information on soil and climate. This information was standardized by means of a field work of characterization of aptitude on eight farms of avocado cv. Hass and the application of geomatic techniques as Kriging. The current use map was obtained employing remote sensing (NDVI as vegetation index). The socioeconomic map of homogeneous zones to produce avocado cv. Hass in Antioquia, was obtained considering social, economic and technological data derived from 21 attributes. The primary information was collected through 212 household surveys which were undertaken to avocado growers on 39 municipalities already identified as producers. A cluster analysis on the data identified three groups of producers which were plotted on a map of homogeneous zones of avocado cv. Hass production. After considering weightings per attribute and dimensions given by experts on avocado cv. Hass, a map of aptitude, competitiveness and sustainability was obtained. The results show that 13.78% of Antioquia department is suitable for avocado Hass, on different ranks: 2.49% suitable and competitive; 3.33% is moderately suitable and competitive; 4.37% moderate to low suitable and competitive; 3.58% unsuitable.

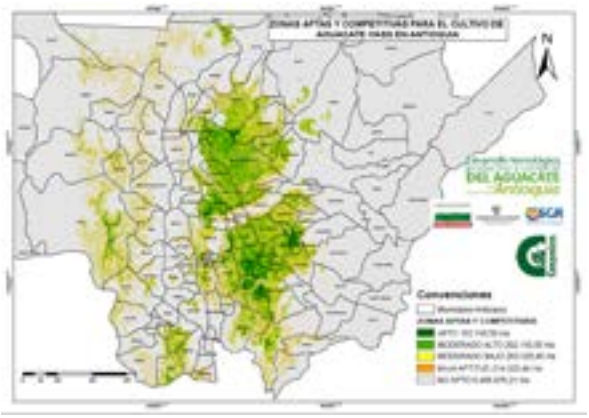

Figure 1. Map of Suitable and Competitive areas for avocado cv. Hass in the department of Antioquia. Source: Author's elaboration.

Recent Publications

1. Casamitjana M et al. (2009) Influence of Tillage Systems on Soil Structural Properties. In: No-Till Farming: Effects on Soil, Pros and Cons and Potential. Nova Science Publishers. Pages:1-26. ISBN:978-1-60741-402-5.
2. Hernández Hernández R M et al. (2013) Influence of land use change on humic substances and the stability of aggrevates in savanna and tropical soils. Revista Facultad Agronomía. (LUZ). 35(3):551-572.

Biography

Tatiana Rondon has her expertise in soil health indicators. Her research has been oriented towards assessing the relations between soil-plant-weather. She has taken part in projects focused on providing agricultural production alternatives and validation of soil health indicators, namely in agricultural regions in Venezuela; however since 2016 she has been working at Agrosavia (former Corpoica) in similar topics. Maria Casamitjana, on the other hand, has worked in planning and land zonning, and has devoted her research to subjects related to regimes of soil moisture, soil physics, and watersheds. Silvana Builes has worked in the economics of land degradation, identifying the socioeconomic factors associated to this problem on one hand, and assessing the economic impact on specific crops, such as sugar cane, on the other.

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