Joaquin Guillermo Ramirez Gil et al., Agrotechnology 2017, 6:3 (Suppl)
DOI: 10.4172/2168-9881-C1-025

Relationship between precipitation, temperature and avocado wilt complex under different scenarios associated with the Enso (Niña-Niño) phenomenon

Joaquin Guillermo Ramirez Gil and **Morales Osorio Juan Gonzalo**
Universidad Nacional de Colombia, Colombia

The avocado wilt complex (AWC) is the most important pathology of this crop. The interactions of this complex with its host are difficult to evaluate due that they occur inside the soil profile and are highly dependent on climatic variables such as precipitation and temperature. The climate variability may be a critical problem in Colombia, mainly associated with the occurrence of the Enso (Niña-Niño) phenomenon. The aim of this work was to determine the relationship between precipitation and temperature and avocado wilt complex under different scenarios associated with the Enso phenomenon. The incidence and severity of the AWC was evaluated during 36 months under field conditions. During this period, "La Niña" and "El Niño" occurred and climatic variables were quantified. The correlation analysis suggested that climatic variables did not have an immediate effect on AWC and could present a lag effect through time. Based in the observed results the interaction between precipitation and temperature and the response of AWC was evaluated by a multivariate analysis through time, using a system of simultaneous equations denominated vector error correction model (VECM), which allowed to identify the existence of lags in a variable as consequence of its own lag or associated with another variable. The results of this work indicate that "La Niña" and "El Niño" phenomena were highly related ($P<0.05$), where "La Niña" was associated with an increment in the incidence and severity and "El Niño" did not induce variation in the incidence values but increased the severity. Together our findings suggest that the Enso phenomenon affects avocado crops by increasing the incidence and severity of the AWM, therefore decreasing the sustainability of the productive system.

Biography

Joaquin Guillermo Ramirez Gil is an Agricultural Engineer, completed Master's in Agricultural Sciences and currently pursuing his PhD. He has published more than 14 articles in scientific journals.

jgramireg@unal.edu.co

Notes: