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Fungi diversity associated to Mexican landrace avocado cork disease through PCR ITS-RFLP

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Avocado cork disease manifests as brown, dry-looking lesions, initially round or irregular in shape, which may cover part of the fruit or the complete fruit, giving it a similar appearance to the mamey, which affects its visual quality. The irregular and sunken surface propitiates that other pathogens stay in, making difficult to identify the causal pathogen. The objective of this work was to evaluate the fungal diversity associated to avocado cork disease in Mexican landrace avocados by means of direct amplification of Internal Transcribed Spacers (ITS) and digestion by Restriction Fragment Length Polymorphism (RFLP). Mexican landrace avocados with symptoms of cork in the pericarp were collected from the municipality of Atlixco, Puebla State in Mexico. In total, 31 fungal isolates were recovered from the surface of these fruits, DNA extraction and the amplification of the ITS fragments were performed. The cutting of the ITS fragments with restriction enzymes (Hae III, Hha I and Hinf I), allowed to observe polymorphism among the different types of fungi, generating fragments of different molecular weights, which let group the fungal isolates by band similarity. The band coding was used to confirm a dendrogram based on the digestion products; as a result, the fungi were classified into eight different groups. The diversity of the fungal isolations was very broad. Some of the fungi found are important pathogens that cause postharvest fruit damage; however, none of them has been reported as the causal agent of cork disease in Mexican landrace avocado.

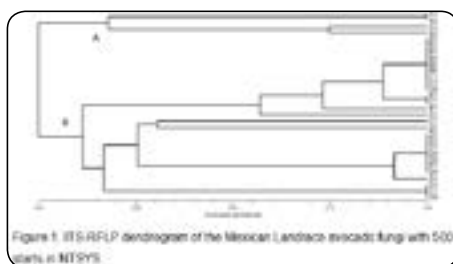


Figure 1: ITS-RFLP dendrogram of the Mexican Landrace avocado fungi with 500 bootstraps in NTSYS.

Recent Publications

1. Djeugap F J, Tsopmbeng N G, Keuete K E, Yaouba A and Serferbe S (2015) Isolation and identification of fungi associated with avocado fruits from local markets of the west region of Cameroon. *International Journal of Agriculture and Biosciences* 4(2):64-68.
2. Everett K R, Rees George J, Pushparajah I P, Manning M A and Fullerton R (2011) Molecular identification of *Sphaceloma perseae* (Avocado scab) and its absence in New Zealand. *Journal of Phytopathology* 159(2):106-113.
3. Hartill W F T (1991) Post-harvest diseases of avocado fruits in New Zealand. *New Zealand Journal of Crop and Horticultural Science* 19(3):297-304.
4. Jenkins A E (1934) *Sphaceloma perseae* the cause of avocado scab. *Journal of Agricultural Research* 49:859-869.

Biography

Becerra Morales Diana currently is a PhD student in Agri-Food Science at the University of Chapingo, Mexico. Her research focuses in the identification of microorganisms in fruits and vegetables using molecular methods. In addition, it analyzes the physiology of the fruits and the biochemical tests to determine the nutraceutical quality.

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