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Research Abstract

Isolation, Characterization and Determination of Cellulolytic Activity of *F. oxysporum* on Green Vanilla Beans

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Abstract: Vanilla bean (*Vanilla planifolia*) is a high value crop in Mexico, however a major obstacle for farmers are fungal diseases, especially that posed by *Fusarium* which causes vanilla wilt. For this reason, the aim of this study was to isolate, characterize and determine hydrolysis of cellulose (HC) of *F. oxysporum* on green vanilla beans. Vanilla beans with symptoms of basal rot were employing to isolation of *F. oxysporum*. Fungal cultures, rapidly growing colonies with white aerial mycelium initially and changes over time were presented to purple. Microscopically, had short, simple, with side and densely branched conidiophores monofálides. Fusiform macroconidia of alantoespora type (23-54 and 3.0-4.5 μm), slightly curved, with three to five septa and pedicellate basal cells. HC were determined by plate assays and enzymatic-activity (EA) with 0.1, 0.5 and 1% (w/v) carboxymethylcellulose (CMC) at pH 5 and 7. The colonies and zone of clearance (diameter) were measured and analyzed with an experimental coefficient (DC values) and EA (IU) were determined by reducing sugars using dinitrosalicilic acid (DNS). *F. oxysporum* increased DC values with low concentrations of CMC in both pH, however the principal EA showed with pH 5 and 0.1% of CMC.

Keywords: *F. oxysporum*, enzymatic-activity, cellulose, vanilla beans

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