

Diversity among populations of *Xanthomonas campestris* pv. *vesicatoria* from five Eastern Caribbean islands with respect to secretion of extracellular enzymes, polysaccharide production and pathogenicity.

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Xanthomonas campestris pv. *vesicatoria* (proposed: *Xanthomonas axonopodis* pv. *vesicatoria*)⁽¹²⁰⁾ is the causative agent of bacterial spot disease of tomato (*Lycopersicon esculentum* Mill. Fam. Solanaceae) and pepper (*Capsicum annum* L. Fam. Solanaceae). A total of 851 strains from five Eastern Caribbean islands (Antigua, Barbados, Grenada, St. Kitts, and St. Lucia) were screened for the production of amylases, glucanases, pectinases and proteases. All the isolates were found to be negative for the production of glucanases and pectinases indicating that these enzymes were not important in their pathogenicity. Amylases were produced by 85% of the strains while 77% produced proteases. Overall, 69% of the strains showed both amylolytic and proteolytic activities. The flow rate of extracellular polysaccharide produced by the isolates was the parameter selected for assessing the quality of the gum, since this property is directly proportional to xanthan gum viscosity. Bacterial strains that produced high viscosity xanthan gum showed higher cfu/11.5cm² of leaf area and faster

symptom development over a 10-day period, than strains of lower gum viscosity. This study also revealed that all strains producing high viscosity gum were producers of the extracellular enzymes, amylase and protease, thus suggesting a possible relationship between enzyme profile and pathogenicity.

Keywords: Extracellular enzymes; Pathogenicity; Xanthan gum, *Xanthomonas campestris* pv. *vesicatoria*