

# **Bacterial pathogen detection in** *Eucalyptus* **sp.**

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### INTRODUCTION

In Colombia there are a total of 72.776 Ha. of forest plantations registered with the different species of the genus Eucalyptus, of these, 6.339 Ha. are established with *Eucalyptus pellita* (ICA, 2015). In the middle of the 2014 year in a eucalyptus plantation located at Cumaribo in the department of Vichada-Colombia, somme *E. pellita* trees were detected with purple necrosis leaf and stem browning, symptoms related with the bacterial wilt caused by Ralstonia solanacearum. Eucalyptus species have been reported as a host for this pathogen in Asia (China and Taiwan), Australia, Africa (South Africa, Uganda, and the Democratic Republic of Congo), and in America it was first reported on this host in Brazil in 1983 and later in other countries as Paraguay and Venezuela (Alfenas et al., 2006). However in Colombia this disease has not been detected.

#### **METHODOLOGY**

- Incubation of plant material
- Isolation and identification of biotic plant disease causal agent
- Diagnostic tests for identification of biotic causal agent
- Molecular confirmation of the causal agent

### **SYMPTOMS**



Transverse section of the trunk reveals browning of the vascular vessels

#### SIGNS





Signs of strong bacterial exudation and darkening of the vascular vessels.

#### **ISOLATION OF BACTERIAL AGENT**





Defoliation of the lower portion of the canopy



Purple leaves and stems

#### **MOLECULAR IDENTIFICATION OF BACTERIAL** AGENT





On Kelman's TZC Agar, colonies of white rose color and fluidal aspect

On NBY Agar, cream colonies and fluidal aspect

OF

#### BIOCHEMICAL **BACTERIAL AGENT**

## **IDENTIFICATION**



Ralstonia solanacearum was identified by the computerassisted System Biolog.

#### CONCLUSION

Isolates were identified by PCR as *Ralstonia* solanacearum. A. Characterization with the 759/760 primer set (Opina et al., 1997).

**B**. PS1-PS2 primer set (Pastrik y Maiss, 2000).

The expected PCR products confirmed by sequencing and the morphological and biochemical identification carried out confirmed Ralstonia solanacearum as the pathogen associated with the wilt symptoms in trees of Eucalyptus *pellita* from the Vichada plantation.

#### REFERENCES

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