

# Occurrence of *Pseudomonas corrugata* Causing Pith Necrosis on Tomato Plants in Goiás, Brazil

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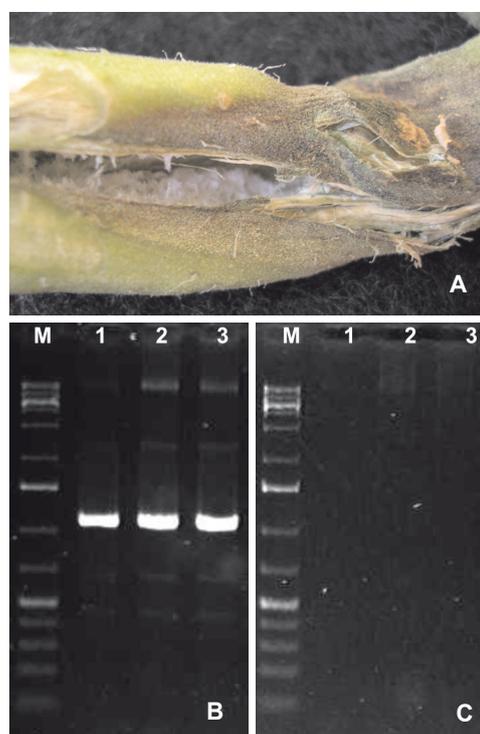
## RESUMO

### Ocorrência de *Pseudomonas corrugata* causando necrose-da-medula em plantas de tomate em Goiás, Brasil

Identificou-se *Pseudomonas corrugata* associada a sintomas de necrose-da-medula em campo de produção de tomate para mesa localizado no município de Goianópolis, Goiás, em 2006. A bactéria foi identificada por meio de PCR, utilizando-se os iniciadores específicos PC5/1 e PC5/2. Realizou-se ainda testes fisiológicos e de patogenicidade que corroboraram na identificação. No Brasil, *P. corrugata* havia sido relatada apenas em São Paulo e no Rio Grande do Sul.

Pith necrosis of tomato (*Solanum lycopersicum* L. = *Lycopersicon esculentum* Mill.), caused by *Pseudomonas corrugata* Roberts & Scarlett, is a vascular disease that can affect tomato plants at any growth stage and in different crop systems, such as greenhouses and open fields. In Brazil, this tomato disease was first reported in the State of São Paulo (Rodrigues Neto *et al.*, Summa Phytopathol. 15:20, 1989). In the following year, it was reported on tomato plants grown in greenhouses in Rio Grande do Sul (Martins *et al.*, Fitopatol. Bras. 15:125, 1990). In July 2006, six to eight percent of tomato plants, cv. Dominador, grown under furrow surface irrigation system in a field in Goianópolis, Goiás, presented foliage chlorosis, with dark brown coalescent lesions on their stems. Profuse presence of adventitious roots was also observed. Longitudinal cuts revealed cavities let by the total pith destruction (Figure 1A) and pith dark discoloration. *P. corrugata* was isolated from symptomatic samples received at the Plant Pathology Laboratory of Embrapa Hortaliças, Brasília. The bacterium was identified with specific oligonucleotide primers PC5/1 and PC5/2, following previous described protocol (Catara *et al.*, Eur. J. Pl. Pathol. 106:753, 2000). A specific band of 1,100-bp was amplified for both isolates obtained from the samples and for the type strain IBSBF 647 (provided by Julio Rodrigues Neto) used as control (Figure 1B). No amplification occurred when primers PC1/1 and PC1/2 specific for *P. mediterranea* (= *P. corrugata* phenon B) were used (Figure 1C). Bacterial colonies were yellowish with greenish center and wrinkled appearance. Diffused light green pigment was observed on nutrient agar with 5% of glucose. Fluorescence was not observed on King's B medium. The results of LOPAT (Lelliott *et al.*, J. Appl. Bact. 29:470, 1966) tests were -, +, -, +, -, showing that the bacterial isolates do not belong to *P. syringae*, *P. viridiflava*, *P. cichorii* or *P. marginalis*. Tomato plants cv. Yuba were inoculated by injecting a bacterial

suspension ( $A_{600}=0.1$ ) in the stem, at the point of the first true-leaf junction. Pith discoloration developed in the petiole after 20 days when the bacterium was recovered about 2 cm from the inoculation point.



**FIG. 1** – **A.** Symptoms of pith necrosis on tomato stem. **B.** PCR amplification with primers PC5/1 and PC5/2 of DNA from *Pseudomonas corrugata*, isolates IBSBF 647 (lane 1), CNPH 2006-1 (lane 2) and CNPH 2006-2 (lane 3). **C.** PCR with primers PC1/1 and PC1/2, specific to *P. mediterranea*. Lane M, 1 kb plus ladder.

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