

**REAL-TIME QUANTITATIVE RT-PCR OF SOME DEFENSE
RESPONSE GENES IN PIPER COLUBRINUM CHALLENGE
INOCULATED WITH PHYTOPHTHORA CAPSICI**

VIJESH KUMAR I P, JOHNSON GEORGE K & M ANANDARAJ

Indian Institute of Spices Research, Calicut, India

ABSTRACT

Foot rot caused by Phytophthora capsici is a major soil borne disease in black pepper, known as the king of spices. Piper colubrinum a distant relative of black pepper is known to be resistant to foot rot disease. The induction of PR proteins and defense response genes during pathogen stress is known to be an important strategy for plants to control the spread of infection during the initial stages of attack by the pathogen. Here we investigated the role of PR proteins viz osmotin, β -1,3-glucanase, defensins and thaumatin like protein, already proven in many plants to be an important factor in the control of various pathogens, through real time PCR. Two strains of pathogen maintained at National repository of Phytophthora, IISR were used for inoculation of the plant. Plants inoculated with 05-06 strain showed high level of expression for the genes under study but the plants inoculated with the other strain 98-93 showed subdued expression when compared to plants inoculated with the strain 05-06. These results show the importance of these genes and the effect of two different strains on resistant reaction of P. Colubrinum against Phytophthora capsici.

KEYWORDS: Osmotin; β -1,3-Glucanase; Defensin; Thaumatin-Like Protein; Real Time PCR; P. Colubrinum; P.Capsici

Original Article

Received: Dec 01, 2015; **Accepted:** Dec 28, 2015; **Published:** Jan 05, 2016; **Paper Id.:** IJASRFEB201610