



Società Italiana di Patologia Vegetale (S.I.Pa.V.)
Italian Phytopathological Society



Dip.to Scienze Agrarie, Alimentari
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UNIVERSITA' DI PISA

NICOTIANA LANGSDORFFII TRANSGENIC PLANTS WITH MODIFIED HORMONAL METABOLISM AS A MODEL SYSTEM FOR THE STUDY OF PHYTOPATOGENIC BACTERIA-PLANTS INTERACTION

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To survive biotic and abiotic stresses plants evolved several defence mechanisms in which the role of phytohormones has been widely demonstrated. Both the “positive growth regulators” (such as auxins, cytokinins, gibberellins and brassinosteroids) and the so called “stress hormones” (abscisic acid, jasmonic acid, salicylic acid and ethylene) play a role in the integrated plant response to biotic and abiotic stresses (Morkunas et al. 2014; Suzuki et al. 2014). Genetic engineering of plants is one of the most currently approaches to understand molecular and physiological mechanisms opposed by plants to abiotic stress (Cabello et al. 2014). To this concern, we recently propose *Nicotiana langsdorffii* as model plant for investigating the effect of the insertion of genes coding for enzymes involved in hormone metabolism and signalling on the response to abiotic stresses (Del Bubba et al. 2013; Fuoco et al. 2013; Giannarelli et al. 2010). In this work, the three genotypes wild type, *RolC* (Bogani et al. 2012) and *GR* (Giannarelli et al. 2010) of *N. langsdorffii* were challenged by *Pseudomonas syringae* pv. *tabaci* ATCC11528 and *P. savastanoi* pv. *nerii* Psn23, reported as virulent and avirulent on Tobacco, respectively. Data concerning the symptomatology induced, the *in planta* bacterial multiplication and the expression of Type Three Secretion System, using a *gfp*-reporter system monitored by fluorimetry and epifluorescence microscopy, demonstrated that *N. langsdorffii* can be an useful model to unveil the role of hormones on bacterial-plant interactions occurring during a biotic stress.

References

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