



HAL
open science

Can nitrogen nutrition of the host plant influence the aggressiveness of secondary inoculum? The intriguing case of *Botrytis cinerea* on tomato

Manzoor Ali Abro, François Lecompte, Florian Bryone, Philippe C. Nicot

► To cite this version:

Manzoor Ali Abro, François Lecompte, Florian Bryone, Philippe C. Nicot. Can nitrogen nutrition of the host plant influence the aggressiveness of secondary inoculum? The intriguing case of *Botrytis cinerea* on tomato. 10. International Congress of Plant Pathology (ICPP), Aug 2013, Pekin, China. , Acta Phytopathologica Sinica, 43 (Supplement), 620 p., 2013, ICPP 2013 Abstracts. hal-02746912

HAL Id: hal-02746912

<https://hal.inrae.fr/hal-02746912>

Submitted on 3 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

P11.005 Can nitrogen nutrition of the host plant influence the aggressiveness of secondary inoculum? The intriguing case of *Botrytis cinerea* on tomato

MA. Abro, F Lecompte, F Bryone and P.C. Nicot
INRA, UR407 Pathologie végétale, Domaine Saint Maurice, CS 60094, F-84143 Montfavet cedex, France

Email: philippe.nicot@avignon.inra.fr

The influence of nitrogen (N) fertilization on a plant's susceptibility to pathogens is fairly well documented. However, little is known about possible effects on spore production by fungal pathogens on diseased tissue and on the aggressiveness of this resulting secondary inoculum. To address this question, sporulation by two strains of *Botrytis cinerea* was quantified on tomato plants produced in hydroponic conditions under different N irrigation regimes with inputs of nitrate from 0.5 to 45 mmol per liter (mM). Sporulation decreased significantly ($P < 0.05$) with increasing N fertilization up to 15 to 30 mM nitrate. The spores were collected and used to inoculate tomato plants produced under a standard fertilization regime. The aggressiveness of this secondary inoculum was significantly influenced by the nutritional status of its production substrate. Disease severity was highest with spores produced on plants with very low or very high N fertilization (0.5 or 30 mM nitrate). It was lowest for inoculum from plants with moderate levels of N fertilization. The results will be discussed in terms of possible mechanisms involved and in terms of potential consequences for disease control.

2012中国国际影响力优秀学术期刊

中国科技核心期刊

《CAJ-CD规范》执行优秀期刊

ISSN 0412-0914
CN11-2184/S

植物病理学报

ACTA PHYTOPATHOLOGICA SINICA

ZHI WU BING LI XUE BAO

VOL.43 NO. **增刊** 2013

Supplement



ICPP 2013
August 25–30,
Beijing, China

Bio-security, Food Safety and Plant Pathology

ABSTRACTS

**10th International
Congress of Plant Pathology**

中国植物病理学会
Chinese Society for Plant Pathology