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

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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.

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