Differential effect of resistance inducers on the susceptibility of lettuce varieties to Sclerotinia sclerotiorum and Botrytis cinerea

Asti Irawanti Azis, Magali Duffaud, Claire Troulet, Brigitte Maisonneuve, Efi Toding Tondok, Suryo Wiyono, Marc Bardin, Philippe Nicot

Differential effect of resistance inducers on the susceptibility of lettuce varieties to *Sclerotinia sclerotiorum* and *Botrytis cinerea*

Asti Irawanti Azis[1,3], Magali Duffaud[1], Claire Troulet[1], Brigitte Maisonneuve[2], Efi Toding Tondok[3], Suryo Wiyono[3], Marc Bardin[1], Philippe C. Nicot[1], [1]*INRA, UR407 Pathologie végétale, F-84140 Montfavet, France,* [2]*INRA, UR1052 Génétique et Amélioration des Fruits et Légumes, F-84140 Montfavet, France,* [3]*Bogor Agricultural University, Phytopathology Departement, 16680 Bogor, Indonesia, E-mail: philippe.nicot@avignon.inra.fr*

The preventive use of resistance inducers has been shown to be an interesting method to reduce dependency on pesticides for plant protection. However, little is known on possible differences in the protective effects of such methods for different varieties of a given crop. In the present study, we assessed the effect of three compounds (acibenzolar-S-méthyl, a calcium-based mineral compound and a yeast extract) for the protection of six varieties of lettuce against two major pathogens, *Sclerotinia sclerotiorum* and *Botrytis cinerea*. The compounds were sprayed on the plants three days before inoculation. A water spray was used as a control. The protective effect of the compounds was then assessed by comparing the size of lesions developing on inoculated leaves.
For both pathogens, none of the compounds fully inhibited disease development. However, reduction in lesion size was observed on some of the leaves. The effect of the three compounds was different for the two pathogens. For tests with *B. cinerea*, effects of plant treatment were not statistically significant. In contrast, significant effects were found for five of the varieties inoculated with *S. sclerotiorum*. Overall, the yeast extract provided the highest level of protection against that pathogen. However, for all compounds, the extent of the protective effect depended on the variety. Furthermore, in some cases the effect the compound was opposite to that desired and disease was more severe on treated plants than on the water control. Possible consequences for field application of such methods will be discussed.

International Organisation for Biological and Integrated Control of Noxious Animals and Plants (IOBC)

West Palaearctic Regional Section (WPRS)

Organisation Internationale de Lutte Biologique et Intégrée contre les Animaux et les Plantes Nuisibles (OILB)

Section Régionale Ouest Paléarctique (SROP)

XIII Meeting of the Working Group
Biological control of fungal and bacterial plant pathogens

Viticulture
Horticulture
Agriculture
Forestry

Biocontrol of Plant Diseases: "From the field to the laboratory and back again"

Uppsala, Sweden

SLU, Swedish University of Agricultural Sciences

15 – 18 June 2014

Programme Abstracts Participants