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Session 6: Emerging tools for the management of plant diseases: Agroecology and disease management

Oral presentation

Impact of UV-C radiations of strawberry plants on its sensitivity to *Botrytis cinerea*

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Increasing the resistance of plants by using physical methods remains poorly studied compared to the use of biological or chemical elicitors. The objective of the study is to test the hypothesis that it is possible to reduce the sensitivity of strawberry plants to *Botrytis cinerea* by the application of non-deleterious dose of UV-C radiation on the plant.

Tests were carried out on three cultivars of strawberry. We first showed that these cultivars have different levels of basal sensitivity to *B. cinerea* on leaves. Various treatments combining different doses of UV-C and frequency of application resulted in the selection of non-deleterious doses for strawberry plants. Measures of chlorophyll fluorescence, leaf color and plant growth revealed that doses comprised between 0.4 and 1.70 kJ/m² had not any significant effect on these plant physiological parameters, regardless of the frequency of application and of the cultivar tested.

It also resulted in the identification of hormetic doses that can improve the resistance of leaves against grey mold. UV-C treatments applied on plants at 0.85 and 1.70 kJ/m² 4 times every two days, resulted in a systematic decrease in the sensitivity of the cultivar Candiss to the strain Bc1 of *B. cinerea* (leaf protection between 11 and 27%). But the effect observed is different according to the strawberry cultivar and to the strain of *B. cinerea* used. In future experiments, we envisage to test the effect of these treatments on fruit quality and in their post-harvest sensitivity to *B. cinerea*.

Keywords: strawberry, *Botrytis cinerea*, UV-C radiations, hormetic dose