

## Adsorption of $^{14}\text{C}$ -labelled exudates by conidia of *Botrytis fabae* on *Vicia faba* leaves

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Internal and external factors which increase the amounts of metabolites leached from bean leaves enhanced the percentage of germination of *Botrytis fabae* conidia on these leaves (Sol, 1966, 1967, 1968). No direct evidence was obtained that these leached nutrients are adsorbed by the conidia on the leaf surface. This paper reports on the experiments performed to illustrate this supposition.

Broad bean plants, *Vicia faba* var. 'Vroege brede witkiem', were grown in a Hoagland solution (Hoagland and Broyer, 1936) in which calcium nitrate was replaced by equivalent amounts of ammonium sulphate and calciumchloride. The latter was added to maintain the calcium concentration. The plants were transferred to an exsiccator, exposed to  $^{14}\text{CO}_2$  during 24 h, and held under fluorescent light (about 3000 lux) at room temperature. Labelled carbon dioxide was prepared by adding 20 ml  $\text{H}_2\text{O}$  to a mixture of 150  $\mu\text{C}$   $\text{Ba}^{14}\text{CO}_3$  and 2 g succinic acid in a 100 ml beaker on the bottom of the exsiccator. A slight negative pressure was applied. After exposure to  $^{14}\text{CO}_2$  the leaflets of the youngest bifoliate leaf (Sol, 1966) were inoculated by putting a drop of a conidial suspension containing 200,000 conidia per ml on each leaflet. The drops were then spread over the leaflet surface by using a glass rod. The inoculated plants were kept in a small moist chamber for 6 h at a temperature of 22°C.

The conidia were collected by pressing a microscope slide, provided with a thin adhesive layer (Breta and Berry, 1964), on the leaf surface and removing it carefully.

The slides were coated with Gevaert Nuc emulsion, type 715. After exposing the preparations for 2 months in sealed boxes at 4°C, the autographic image was developed in a fine grain developer for 6 min at 20°C. The location of radioactivity in the preparations, marked by a deposit of silver grains, was detected with the microscope. Developed grains were present above conidia (Fig. 1), indicating that  $^{14}\text{C}$ -labelled metabolites were adsorbed by the conidia. The grains and conidia can only be observed by focusing up and down. Consequently, photographic illustration of results is difficult.

### Samenvatting

*Adsorptie van met  $^{14}\text{C}$  gemerkte exudaten door conidiën van Botrytis fabae op bladeren van Vicia-faba*

Tuinboonplanten *Vicia faba* werden na een 24-urig verblijf in een  $^{14}\text{CO}_2$ -milieu geïnoculeerd met conidiën van *Botrytis fabae*. Zes uur na de inoculatie werden de conidiën

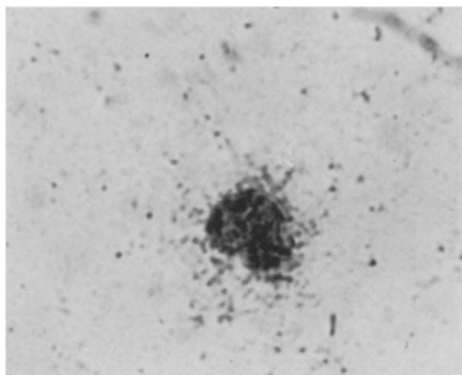


Fig. 1. Location of developed silver grains above a conidium of *Botrytis fabae*. Focus on the film. Magnification  $\times 630$ .

*Fig. 1. Ligging van ontwikkelde zilverkorrels boven een conidium van Botrytis fabae. Focus op de film. Vergroting  $630\times$ .*

verzameld. De adsorptie van met  $^{14}\text{C}$  gemerkte bladexudaten door de conidiën kon microautoradiografisch worden vastgesteld.

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