



SILVER SCURF

Control of silver scurf (*Helminthosporium solani*) in organic seed potato production

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Non-chitted (above) and chitted (below) seed

Damage by silver scurf in organic seed potato production is an increasing problem. In 2005 a new project is started with the aim to reduce the infection of daughter tubers during the growing season by:

- Reducing the number of spores that develop on the seed tubers,
- stimulating the breakdown of spores.

Infection route

For silver scurf, the transmission of spores from mother tuber to daughter tubers in the soil is an important infection route. In organic agriculture there are at present no effective measures available that may prevent this route.

When an infected mother tuber is planted the silver scurf on this tuber starts to sporulate. In the course of time the spores die off. The spores may be transferred to the daughter tubers by means of passive transport (precipitation). Furthermore, the daughter tubers may be infected when during harvest vital spores meet a damaged part of the potato skin.

Prevention

Hygiene

When a mother tuber is completely free from silver scurf, no new spores develop, and also the daughter tubers stay clean. This is, however, complicated to achieve and to hold out.

Chitting

Silver scurf sporulation is the most intense at the border of the lesions. When a mother tuber is completely overgrown with silver scurf, there is no 'fresh' skin on which the disease can sporulate. The number of spores that is initially formed, and that is the source population for infection of the daughter tubers, is thereby reduced, and the harvested daughters may remain cleaner.

This can be achieved by chitting the seed in relatively humid conditions. But, when the mother tubers are not completely overgrown at the moment of planting, the effects may be the opposite of what was intended.

Application of compost

When spores of silver scurf are placed in soil, the survival rate is not very high. Soil processes influence their life conditions. These soil processes include the activity of antagonists, and the production of plant metabolites with an anti-fungal activity. Crop residues of cabbage are known to produce isothiocyanate. In experiments with different types of compost, among which cabbage-based compost, the effects on the vitality and survival of silver scurf spores in the soil will be investigated. The hypothesis is that application of compost will reduce the survival rate of the spores in soil, and thereby reduces the infection of daughter tubers during harvest.

Experiments

Two experiments have been planted, with two chitting treatments (chitted and not chitted seed) and four compost treatments (no compost, cabbage based compost, compost of household waste and green waste compost) are tested in six replications.



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