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**Pest, disease and weed
management in strawberry –
progress and challenges for the
Nordic production**

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Preceding crop has great influence on the density of *Pratylenchus crenatus* on strawberry

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Root-lesion nematodes (*Pratylenchus* spp.) are migratory endoparasites which can cause severe damage in strawberry by feeding in roots. The effect of monoculture strawberry and three-year cultivation of preceding plants and peat amendment on root-lesion nematode *P. crenatus* in strawberry was studied among other investigations in 1999-2004. *P. crenatus* is known to occur mainly in Graminae, and was initially present in the experimental area with earlier history of cereal cropping. Besides Graminae, *P. crenatus* has been recorded on strawberry, and may cause injuries in the roots.

In half of the experimental area soil was amended with peat, half of the area remained without amendment. Eight different plants were grown in both areas: strawberry, timothy, caraway, rye, turnip rape, buckwheat, onion and fiddleneck. The plots were arranged in a split-plot design with three replicates. Strawberry was grown in raised beds mulched with black plastic. The area between the strawberry beds was sown with sheep's fescue. In 1999-2001, buckwheat, turnip rape, onion and fiddleneck plots were ploughed in the autumn and sown again in spring. Rye was sown first in the autumn 1999, preceded by annual Persian clover. The whole area was ploughed in October 2001. In spring 2002, peat was added again using limed peat (pH 6) and strawberry was planted in the whole area in June. Nematode densities were analysed from annual soil samples in late summer in 1999-2004 and from strawberry root samples in 2003-2004. Nematode numbers were counted and representative samples of nematodes were prepared and identified.

After the three-year preceding crop period, number of *P. crenatus* in soil without peat amendment was the highest in timothy (63/100 ml soil), followed by rye (10), strawberry (8.3), buckwheat (2.5), onion (2.0), fiddleneck, turnip rape, and caraway (<1.0). With peat amendment, higher numbers than without peat addition were found in timothy (114) and rye (25), but the differences were not significant.

In the last year of the experiment the number of *P. crenatus* in monoculture strawberry roots was significantly higher (85/g root) than in strawberry roots with preceding crops fiddleneck (3.4), onion (3.4), turnip rape (6.4), buckwheat (7.3) and caraway (13). Peat amendment did not affect significantly on nematode numbers in strawberry roots, although their pooled numbers in amended plots multiplied in 2003-2004 samples 11-fold compared to a 2-fold increase without peat amendment.

P. crenatus infested strawberry roots in relatively high degree. Whether this species affects on the yield of strawberry could not be confirmed. From the results we conclude that the preceding crop plant has a great influence not only immediately after the cropping but also in long-term on the numbers of *P. crenatus* in strawberry. Especially timothy increased *P. crenatus* both in soil and in strawberry roots.