

Resistance and tolerance of potato varieties to *Ditylenchus destructor*

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The potato tuber rot nematode *Ditylenchus destructor* is a nematode pest of potato and listed as a quarantine nematode in many countries. *Ditylenchus destructor* damages tubers and cause tuber rot under storage. Information on resistance and tolerance of potato varieties to *D. destructor* is limited. Experiments were conducted to determine multiplication and tuber damage caused by *D. destructor* on different potato varieties. In Experiment 1, resistance and tolerance of 21 potato varieties were evaluated in a greenhouse at a temperature of 20 +/- 3°C. Potato plants were challenged with 2000 nematodes (female, males and juveniles) upon germination. Pots were replicated five times per variety and laid out in a completely randomized design for twelve weeks. In Experiment 2, multiplication and damage caused by *D. destructor* at different initial population (Pi) densities (0, 100, 500, 1000 and 2000 nematodes) on the potato variety 'Désirée' were evaluated. In both

experiments, nematodes were isolated and counted from 5g of tuber tissue and percentage internal and external tuber damage scored. Nematode numbers isolated from tubers varied significantly ($p < 0.05$) among potato varieties. Juveniles were the dominant nematode stage isolated. Results from Experiment 1 indicated that inoculation of potato varieties with *D. destructor* leads to significant differences ($p < 0.05$) in external and internal potato tuber damage among the 21 potato varieties. Percentage external and internal damage ranged between 7.2 to 44.5 % and 0 to 22 %, respectively. As *D. destructor* initial population densities increased so did the tuber damage in Experiment 2. Percentage external and internal damage ranged between 0 to 68 % and 0 to 56 %, respectively. High nematode densities caused severe potato tuber damage on the variety 'Désirée'. Knowledge on resistance and tolerance of potato varieties is important in the management of *D. destructor*.