POTATO PROGRAM FACTSHEET

POTATO ROT NEMATODE
DITYLENCHUS DESTRUCTOR

PLANT INDUSTRY BUREAU POTATO PROGRAM
WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE, AND CONSUMER PROTECTION

General Pest Information

Potato rot nematode (PRN), *Ditylenchus destructor,* is an economically significant pest of potatoes in temperate regions. It occurs in localized areas in North America and many parts of Europe and Asia. Many states and nations have stringent regulations against movement of PRN. Wisconsin is one of 13 states where infestations of PRN are known to occur. Wisconsin began quarantining fields infested with PRN in 1953. Wisconsin's inspection and quarantine program has been successful in allowing the continued certification and export of Wisconsin-raised potatoes.

Life cycle

Potato rot nematodes are microscopic. As adults, they are just 1/50 of an inch long. Adults enter tubers and stolons to feed. Females lay their eggs in the tubers, where the eggs hatch. A colony builds up just below the potato skin. PRN can spread from infected potatoes to healthy potatoes in storage. Infected seed potatoes can spread the nematodes to new fields.

Symptoms

Infected potato plants do not show any recognizable symptoms above ground. Damage is first noticeable at harvest. The PRN colony appears as a chalky area about the size of a pea. Nematode feeding sites appear as minute gray to brown spots on the tubers, which enlarge and become mealy and granular (Figure 1). The tuber skin dries, shrinks, and cracks (Figure 2). Tuber symptoms may resemble dry rot. PRN colonized tubers often develop soft rot. Most of the infection occurs in the field. However, tubers that are only slightly affected at harvest will continue to decay in storage, as nematodes move into healthy tuber tissue.

Hosts

In addition to potatoes, PRN has a wide range of hosts including alfalfa, beet, clover, dandelion, dahlia, gladiolus, hops, iris, lilac, mint, parsnip, peanut, rhubarb, tiger flower, tomato, tulip, and several weed species.

Figure 1. PRN feeding sites on a yellow variety of potato Photo: DATCP.

Figure 2. Cracked skin of red skinned potato variety caused by PRN feeding. Photo: DATCP.

PRN in the field

The occurrence of PRN in the field is erratic and difficult to predict. Some fields may develop a widespread, intense infestation while other fields have only patches of infestation. Some fields may appear to have little or no infestation for many years, and then suddenly experience an outbreak. Nematologists don't completely understand the factors influencing the development and spread of PRN.

Management and prevention

Check nematode history of land before renting or buying.

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) and the University of Wisconsin Seed Potato Certification Program maintain complete records and an updated map of fields known to be infested. Before renting, trading, or buying a piece of land, contact the DATCP potato program coordinator or the Seed Potato Certification Office to make sure the land is not already under quarantine.

Minimize the risk of spreading PRN from unknown fields.

New fields with no history of PRN should be planted last. Plant the variety least important to your operation in the new field. Disinfect tractors and tillage equipment before moving from the unknown field into other fields.

Store potatoes from new fields in a separate and sanitized storage unit.

Under current law, the Certification Program can reject potatoes from an entire warehouse if there is a risk that contamination or mixing has occurred. Contact the Seed Potato Certification Office to be certain that bin separation is adequate. Monitor stored potatoes regularly.

Plant only certified potato seed that has originated from a limited generation program.

Do not grow potatoes in infested fields for four to six years.

Include cereals and grasses in the rotation. Remove all infected tubers from the field and destroy or dispose of them in a way that prevents spread of PRN. Control weeds in infested cropland. PRN can survive in weeds and many crops other than potatoes and seed other hosts.

Fumigation

If it is economically feasible, applying a nematicide according to label recommendation is an effective control measure. Fumigants must be applied by a certified pesticide applicator under strict observance of the pesticide label.

Contacts

Sara Ott, Wisconsin Department of Agriculture, Trade and Consumer Protection: (608) 516-5486
University of Wisconsin Seed Potato Certification office in Antigo: (715) 623-4039

AUTHORS

Sam Fieweger
Plant Industry Laboratory

Anette Phibbs
Plant Industry Laboratory

PLANT INDUSTRY BUREAU POTATO PROGRAM

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION
2811 Agriculture Drive, P.O. Box 8911, Madison, WI 53708-8911 | https://datcp.wi.gov
https://datcp.wi.gov/Pages/Programs_Services/SeedPotatoCert.aspx ☎ Sara Ott: 608.516.5486