United States Department of Agriculture

Pale Cyst Nematode (PCN) Eradication Program - Idaho Falls, Idaho
2021 3rd Quarter Report (July 1 – September 30)

PROGRAM UPDATES AND NEW INFORMATION:

- On July 13, 2021, the PCN program announced the deregulation of 271 acres of associated fields located in Bingham County, Idaho. The fields were deregulated after completing a sequence of soil surveys with negative laboratory results for PCN. The PCN regulated area, which spans portions of northern Bingham and southern Bonneville Counties, is 7,083 acres. Of that total, 3,446 acres are infested fields, and 3,637 acres are associated fields.

ERADICATION ACTIVITIES

- The PCN program contracted with a chemical applicator to fumigate five PCN-infested fields (approximately 505 acres) with the nematicide Telone II (1,3-dichloropropene) in August and September of 2021.
- Results from the 2021 fumigation treatments on infested fields are pending completion of laboratory analyses, which are expected to be complete by March 2022.

REGULATORY DATA

Regulatory Treatments

Treatment type	Regulatory Treatments (# of pieces of equipment)		
	3rd Quarter of 2021	2021 Year to date	Since program inception (2006)
Pressure Washed	688	1,358	31,821
Steam Sanitized	130	223	5,250
Total	***818***	***1,581***	***37,071***

Self-Certification Program

Treatment type	Regulatory Treatments (# of pieces of equipment treated by stakeholders participating in the self-certification program)		
	2nd Quarter of 2021*	2021 Year to date*	Since program inception (2006)*
Pressure Washed	30	30	4,754

*Self-certification data lags behind all other program data as stakeholders have three months after the end of each quarter to self-certify.

Regulatory Documentation

Documentation type	Regulatory Documentation			
	3rd Quarter of 2021	2021 Year to date	Since program inception (2006)	Active
Certificates (PPQ** 540)	262	564	14,455	*
Limited Permits (PPQ 530)	70	128	4,247	*
Compliance agreements	1	39	*	39

*Not applicable; ** Plant Protection and Quarantine (PPQ)

SURVEY DATA

- To date, the PCN program has collected 540,801 soil samples in Idaho outside of the 31 known infested fields.

Type of survey	Idaho soil samples collected		
	3rd Quarter of 2021	2021 Year to date	Since program inception (2006)
Detection	352	1,131	245,722
Delimiting	1,384	2,987	295,079
Eradication	568	924	189,198
Total	***2,304***	***5,042***	***729,999***

LABORATORY DATA

- Since 2009, the PCN program has collected and screened 89,379 soil samples in support of the Idaho State Department of Agriculture's post-regulation monitoring survey of fields deregulated by the Animal and Plant Health Inspection Service (APHIS).
- Since program inception, the PCN laboratory has screened 90,906 soil samples collected in other potato-producing states. There have been no PCN detections in the United States outside of Idaho.

Identification and Diagnostics

Type of survey	Samples processed by the PPQ Idaho Falls PCN Laboratory		
	3rd Quarter of 2021	2021 Year to date	Since program inception (2006)
Detection	954	7,490	283,342
Delimiting	1,637	3668	286,225
Eradication	392	6,168	188,076
Total	***2,983***	***17,326***	***757,643***

Type of survey	Historic Info: Samples processed at other Idaho laboratories	
	Idaho Food Quality Assurance Laboratory (2006-2009, now closed)	Idaho State Parma Research and Extension Center (2006-2009)
Detection	52,670	69
Delimiting	10,227	896
Total	***62,897***	***965***

ERADICATION MONITORING AND PROGRESS

- Since its inception in 2006, the PCN program has used a staining technique to analyze the viability of nematode eggs in 1,002 cyst samples. The cyst samples are composited from subsamples of cysts collected from infested field-monitoring grids before and after fumigation treatments. Viable nematode eggs have not been detected in 24 of the 31 infested fields following eradication treatments, which advances those 24 fields to the next phase of evaluating eradication progress, the greenhouse bioassay.

Method	Location	Results	
		Total number of infested fields	Total number of infested fields with no viable PCN detected by stain as of September 30, 2021
Cyst stain	Idaho Falls PCN Laboratory	31	24

- Greenhouse bioassay is a test of the nematode's ability to hatch, feed, and reproduce when cysts are placed in proximity to a growing host plant. Twenty of the 24 fields have successfully completed the greenhouse bioassay test. Of the four remaining fields currently in greenhouse bioassay testing, final results are expected for one field by the end of 2021, and for three fields by the end of 2022.
- The PCN program continues to monitor and regulate fields after successful completion of greenhouse bioassay testing, but with reduced sanitation requirements. Fields that have passed the greenhouse bioassay test are also eligible to return to potato production at the landowners' discretion.

Method	Location	Results	
		Fields that advanced to greenhouse bioassay testing	Fields that have passed greenhouse bioassay testing
Greenhouse bioassay	University of Idaho, Moscow	24	20

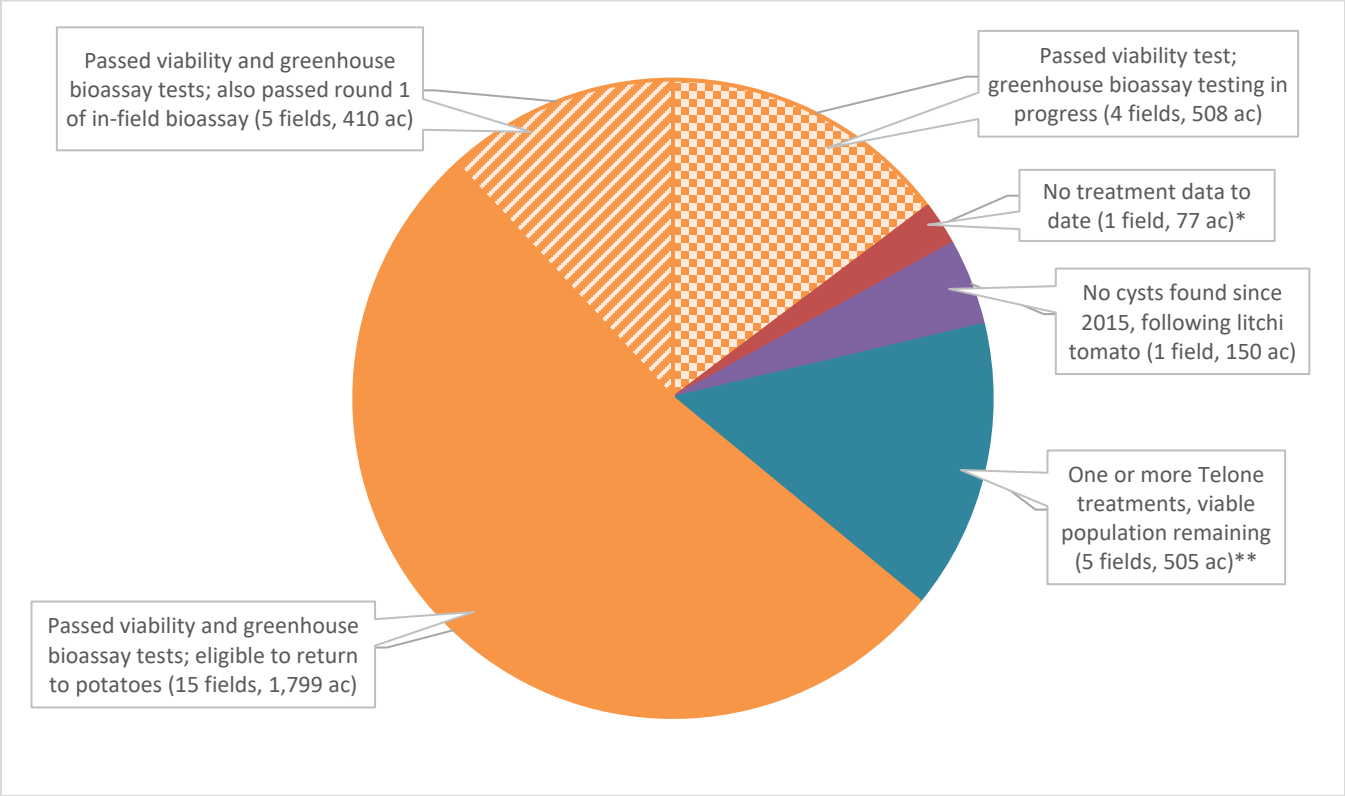
- The PCN program requires infested fields that return to potato production to undergo full-field surveys following each of three subsequent potato crops to check for viable PCN populations.

Between 2015 and 2020, potatoes were planted on eight eligible fields, which were the first potato crops grown since PCN was first found on those fields. Viable nematodes were found in soil samples collected from three of these fields following potato harvest. As a result of finding viable nematodes on these three fields, the program reinstated prohibitions on growing potatoes, and full sanitation treatments (pressure washing and steam treatment). No viable nematodes were found in soil samples from the other five fields, making them eligible to grow a second potato crop, which would be at the landowners' discretion.

- In 2021, potatoes were planted in two eligible fields; this was be the first crop for one field and the second crop for the other field since before PCN was found on those fields. The fields were sampled following harvest and will be analyzed over the winter of 2021-2022 for the presence of viable nematodes.

ERADICATION PROGRESS SUMMARY AS OF SEPTEMBER 30, 2021

- This pie chart represents eradication progress for the 31 infested fields (3,446 ac) detected in Idaho since program inception in 2006.



** Field planted with a multi-year alfalfa crop in 2020.*

*** 2020 data; 2021 post-Telone data will be available by March 2022. This pie slice includes three fields that returned to potato production as part of the in-field bioassay test but viable nematodes were found in post-harvest surveys.*

IMPACTS ON COMMERCE

In response to the initial PCN detection in 2006, Canada, Mexico and Korea shut off importation of potatoes from Idaho, while Japan cut off importation of potatoes from the entire U.S. The Mexico and Canada export markets have both been re-opened except for potatoes from PCN-regulated areas. Both require PCN soil surveys from origin fields. The Korea market was reopened in June 2010 except for potatoes originating from Bingham and Bonneville Counties, Idaho. Japan reopened the market for all except Idaho potatoes in February 2007 and to Idaho potatoes in September 2017. This action represented a major milestone for the Idaho potato industry and the PCN program, the full restoration of all markets lost due to the original 2006 PCN detection. Because of extensive field surveys conducted throughout production areas in Idaho, all of which have been negative beyond the twenty-nine infested fields, the general opinion by trading partners is that potatoes produced outside regulated areas do not pose a risk for spread of PCN.

PUBLIC OUTREACH

Pale Cyst Nematode program information is available via the USDA APHIS Stakeholder Registry. The Registry allows anyone to subscribe and receive alerts by email or by text message when new information about PCN or other topics of interest are announced. Subscribing is simple and you can unsubscribe or change your selections at any time. For PCN program announcements, select Plant Health in the U.S. (Domestic), then Pest Management, and finally Potato Pests and Diseases. To sign up, visit https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new

More PCN program information can be found at:
https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/nematode/pcn

If you have additional questions, contact the PCN program office at (208) 522-2431,
Monday through Friday, 8:00 AM to 4:30 PM (Mountain Time), excluding federal holidays.