



Pale Cyst Nematode (PCN) Eradication Program - Idaho Falls, Idaho 2021 4th Quarter Report (October 1 – December 31)

PROGRAM UPDATES AND NEW INFORMATION:

- On November 22, 2021, the PCN program announced the deregulation of 513 acres of associated fields in Idaho (277 acres in Bingham County and 236 acres in Bonneville County). The fields were deregulated after completing a sequence of soil surveys with negative laboratory results for PCN.
- On November 29, 2021, the PCN program announced the detection of a new PCN-infested field in Bingham County. The 97-acre field has been under regulation since 2011 due to its association with another PCN-infested field. The infestation was detected by a routine delimitation survey. This detection will not add any new associated fields to the regulated area.
- The current PCN regulated area, which spans portions of northern Bingham and southern Bonneville Counties, is 6,570 acres (3,542 acres of infested fields and 3,028 acres of associated fields). The infestation is limited to an area with an 8.5-mile radius and represents less than 1% of Idaho’s total potato production area.

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. Although the overall percentage of viable cysts found in soil samples declined following fumigation, cysts collected from four fields indicate that a viable PCN population is still present. Cysts collected from a fifth field were non-viable, enabling that field to advance to the next testing phase, greenhouse bioassay.

REGULATORY DATA

Regulatory Treatments

Treatment type	Regulatory Treatments (# of pieces of equipment)		
	4 th Quarter of 2021	2021 Year to date	Since program inception (2006)
Pressure Washed	341	1,701	32,164
Steam Sanitized	46	269	5,296
Total	387	1,970	37,460



Self-Certification Program

Treatment type	Regulatory Treatments (# of pieces of equipment treated by stakeholders participating in the self-certification program)		
	3 rd Quarter of 2021*	2021 Year to date*	Since program inception (2006)*
Pressure Washed	26	56	4,780

*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			
	4 th Quarter of 2021	2021 Year to date	Since program inception (2006)	Active
Certificates (PPQ** 540)	97	662	14,553	*
Limited Permits (PPQ 530)	18	146	4,265	*
Compliance agreements	2	2	*	41

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

SURVEY DATA

- Since program inception in 2006 through December 31, 2021, the PCN program has collected 542,770 soil samples in Idaho outside of the 32 known infested fields.

Type of survey	Idaho soil samples collected		
	4 th Quarter of 2021	2021 Year to date	Since program inception (2006)
Detection	506	1,637	246,228
Delimiting	1,463	4,450	296,542
Eradication	2,647	3,571	191,845
Total	4,616	9,658	734,615

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 92,629 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		
	4 th Quarter of 2021	2021 Year to date	Since program inception (2006)
Detection	2,931	10,421	286,274
Delimiting	1,703	5,371	287,928
Eradication	3,179	9,347	191,255
Total	7,813	25,139	765,457

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 1,023 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 25 of the 32 infested fields, which advances those 25 fields to the next phase of evaluating eradication progress, the greenhouse bioassay.

Method	Location	Results Summary as of December 31, 2021	
		Total number of infested fields	Total number of infested fields with no viable PCN detected by stain
Cyst stain	Idaho Falls PCN Laboratory	32	25

- 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-one of the 25 fields have successfully completed the greenhouse bioassay test. Of the four remaining fields currently in greenhouse bioassay testing, final results are expected for three fields in 2022, and a fourth field will begin the greenhouse bioassay in 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 Summary as of December 31, 2021	
		Fields that advanced to greenhouse bioassay testing	Fields that have passed greenhouse bioassay testing
Greenhouse bioassay	University of Idaho, Moscow	25	21

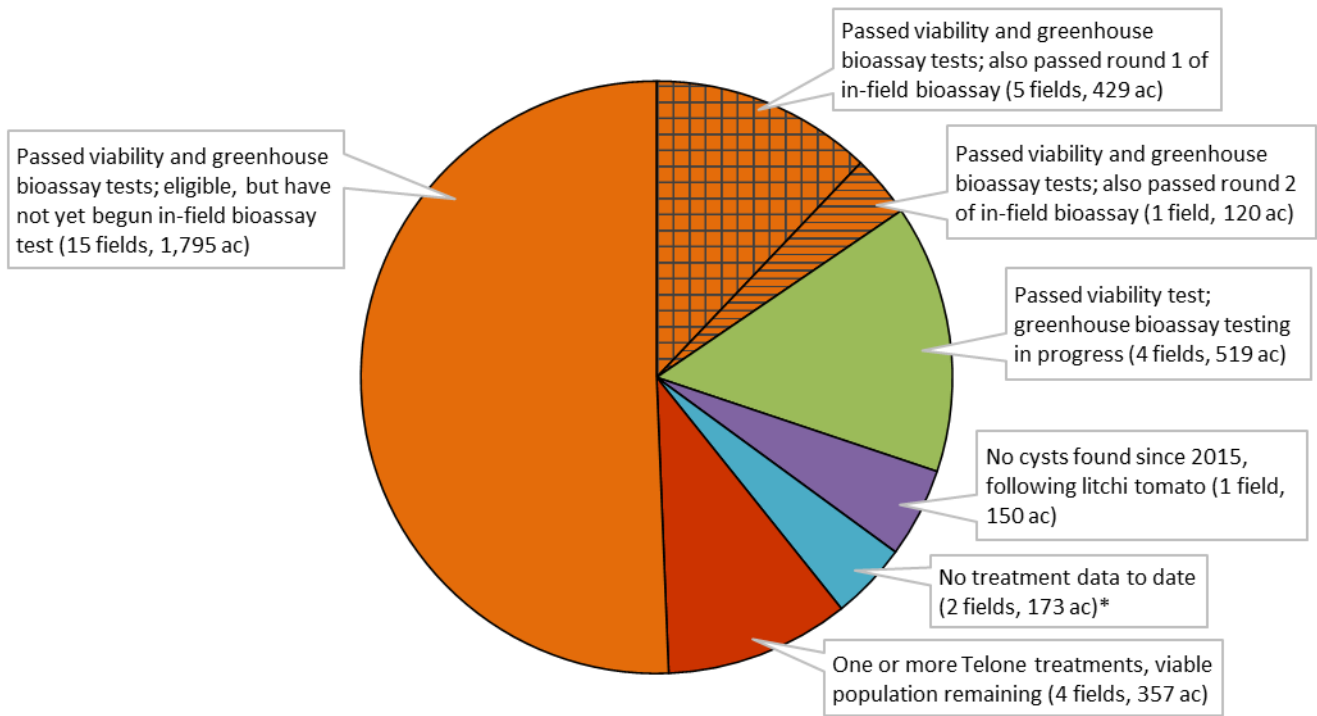
- The PCN program requires infested fields that return to potato production to undergo full-field surveys following each of three subsequent potato crops to check for viable PCN populations.
- Between 2015 and 2021, potatoes were planted on nine eligible fields, which were the first potato crops grown 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 for equipment and vehicles leaving the fields (pressure washing and steam treatment).
- No viable nematodes were found in soil samples from the other six fields, making them eligible to grow another potato crop, which would be at the landowners' discretion. Of these six fields, five have successfully completed one round of in-field bioassay, and one field has successfully completed two rounds of in-field bioassay.

Method	Results Summary as of December 31, 2021		
	Fields that have passed one round of in-field bioassay (viable nematode eggs not detected following harvest)	Fields that have passed two rounds of in-field bioassay (viable nematode eggs not detected following harvest)	Fields that did not pass in-field bioassay (viable nematode eggs were detected following harvest)
In-field bioassay	5	1	3*

*Viable nematodes detected after one crop on two fields, and after two crops on one field.

ERADICATION PROGRESS SUMMARY AS OF DECEMBER 31, 2021

This pie chart summarizes eradication progress for the 32 infested fields (3,542 acres) detected in Idaho since program inception in 2006.



* One field planted with a multi-year alfalfa crop in 2020, and one field detected in November 2021

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



United States Department of Agriculture

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.