United States Department of Agriculture

# Pale Cyst Nematode (PCN) Eradication Program - Idaho Falls, Idaho
# 2019 2nd Quarter Report (April 1 – June 30)

*Due to the partial government shutdown spanning parts of December 2018 and January 2019, the time period covered by this report also includes information from the 1st quarter of 2019*

## PROGRAM UPDATES AND NEW INFORMATION

- Six PCN-infested fields (three in December 2018 and three in February 2019) have successfully completed the greenhouse bioassay test, bringing the number of fields to reach this milestone to 18. The greenhouse bioassay tests nematodes' ability to hatch and reproduce when challenged by an actively growing host plant (potato) under simulated field conditions. Bioassays are performed in a containment facility at the University of Idaho in Moscow, Idaho. Completing the greenhouse bioassay allows reduced regulatory and sanitation requirements and enables a field to return to host crop production.
- On February 15, 2019, one PCN-infested field that was detected in 2013 has reached the point where viable nematodes are no longer found in cyst samples collected from field soil. To date, 22 infested fields have reached this important milestone, representing 73% of all infested acres detected since the program began in 2006.
- 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

## ERADICATION ACTIVITIES

- The PCN program is planning soil fumigation for five PCN-infested fields (approximately 665 acres) with Telone II (1,3-dichloropropene) in August-September of 2019. Soil samples will be collected from the fields following fumigation, and cysts extracted from them will be tested to determine the treatments' effectiveness at reducing nematode egg viability.

## REGULATORY DATA

### Regulatory Treatments

| Treatment type | Regulatory Treatments (# of pieces of equipment) | | |
|---|---|---|---|
| | 2nd Quarter of 2019 | 2019 Year to date | Since program inception |
| Pressure Washed | 745 | 745 | 27,337 |
| Steam Sanitized | 100 | 100 | 4,315 |
| ***Total*** | ***845*** | ***845*** | ***31,652*** |

### Self-Certification Program

| Treatment type | Regulatory Treatments (# of pieces of equipment treated by stakeholders participating in the self-certification program) | | |
|---|---|---|---|
| | 1st Quarter of 2019* | 2019 Year to date* | Since program inception* |
| Pressure Washed | 0 | 0 | 4,449 |

*Self-certification data lags one quarter behind all other program data in order to provide a stakeholder reporting period.

### Regulatory Documentation

| Documentation type | Regulatory Documentation | | | |
|---|---|---|---|---|
| | 2nd Quarter of 2019 | 2019 Year to date | Since program inception | Active |
| Certificate (PPQ 540) | 287 | 287 | 12,860 | * |
| Limited Permit (PPQ 530) | 66 | 66 | 3,845 | * |
| Compliance agreements | 0 | 0 | * | 37 |

*Not applicable

## SURVEY DATA

- To date, the PCN program has collected and screened 527,140 soil samples in Idaho outside of the 29 known infested fields.

| Type of survey | Idaho soil samples collected | | |
|---|---|---|---|
| | 2nd Quarter of 2019 | 2019 Year to date | Since program inception |
| Detection | 690 | 690 | 240,177 |
| Delimiting | 100 | 100 | 276,730 |
| Eradication | 5,556 | 5,556 | 163,356 |
| ***Total*** | ***6,346*** | ***6,346*** | ***680,263*** |

## LABORATORY DATA

- Since 2009, the PCN program has assisted with collecting and screening 89,379 soil samples in support of the ISDA's post-regulation monitoring survey of fields deregulated by the USDA.
- The PCN laboratory has screened 79,119 soil samples collected in other potato-producing states. There have been no PCN detections in the U.S. outside of Idaho.

### Identification and Diagnostics

| Type of survey | Samples processed by the Idaho PCN Laboratory | | |
|---|---|---|---|
| | 2nd Quarter of 2019 | 2019 Year to date | Since program inception |
| Detection | 67 | 67 | 268,748 |
| Delimiting | 0 | 0 | 276,739 |
| Eradication | 5,444 | 5,444 | 164,548 |
| ***Total*** | ***5,511*** | ***5,511*** | ***710,035*** |

| Type of survey | 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, the PCN program has used a staining technique to analyze the viability of nematode eggs in 932 cyst samples collected from infested fields before and after fumigation treatments. Viable nematode eggs are no longer detected in 22 of the infested fields, which advances those fields to the next phase of evaluating eradication progress, the greenhouse bioassay.

| Method | Location | Results | |
|---|---|---|---|
| | | Total number of infested fields | Fields with no viable PCN detected by stain |
| Cyst stain | Idaho Falls PCN Laboratory | 29 | 22 |

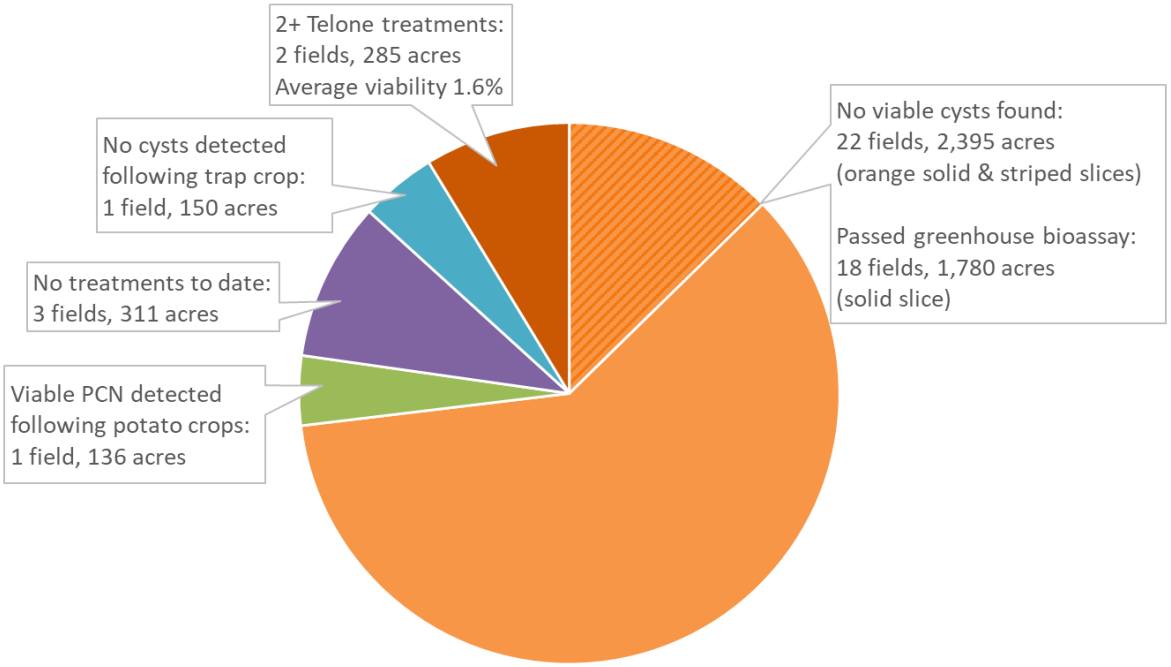
- Greenhouse bioassay is a test of the nematode ability to hatch, feed, and reproduce when placed in proximity to a growing host plant. Eighteen of the 22 fields at zero viability by the staining method have also successfully completed the greenhouse bioassay test. Final greenhouse bioassay results are expected in 2020 for the fields currently in the testing process.

- 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 | 22 | 18 |

- 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. Potatoes were planted on half of one eligible field in 2015, 2016, 2017, and 2018 (alternating sides of the field). These were the first potato crops produced on the field since before PCN was detected there in 2006. Viable PCN were detected in post-harvest surveys after the 2018 crop. The field will return to non-host crop production in 2019 and steam sanitation requirements reinstated until or unless the field can pass the cyst stain viability and greenhouse bioassay tests. Four eligible fields began the in-field bioassay test in 2019 by planting potatoes for the first time since before PCN was detected on those fields. Soil samples will be collected from each field following harvest and analyzed for the presence of viable PCN, with results expected in early 2020.

## ERADICATION PROGRESS SUMMARY




## 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 with the exception of potatoes from PCN-regulated areas. Both require PCN soil surveys from origin fields. The Korea market was reopened in June 2010 with the exception of potatoes originating from Bingham and Bonneville Counties, Idaho. Japan reopened their market to Idaho potatoes in September 2017, which 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

- On June 18, 2019, University of Idaho graduate students toured the PCN program facility during a week-long Potato Industry Tour. The annual statewide tour stopped at potato farming operations, packing and processing facilities, agricultural research companies, and included meetings with chemical companies, retail representatives, and county extension educators across the State of Idaho. The PCN program tour was followed by a meet-and-greet with a PCN-impacted grower and landowner to discuss the quarantine and eradication process, and how PCN impacts his farming operation.

PCN program information can be found at: http://www.aphis.usda.gov/planthealth/pcn

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