



UPDATES AND RELATED INFORMATION:

- On May 17th, 2013, Plant Protection and Quarantine (PPQ) announced that soil samples from two fields in eastern Idaho are positive for the pale cyst nematode (PCN). The two fields, both located in Bingham County, total 285 acres and are in close proximity to previously identified infested fields. Both fields were detected through routine delimiting surveys of suspect fields. All 21 known infested fields are located within a 5-mile radius that spans a portion of northern Bingham County and southern Bonneville County.
- A trace investigation of fields associated with the two new infested fields resulted in the addition of 343 acres to the regulated area. Another 29 acres were added as a result of adjusting the mapped boundary of two fields that were already under regulation. Approximately 355 acres of farmland were deregulated after completing a release protocol comprised of a sequence of surveys with negative laboratory results for PCN. These changes bring the regulated area to 13,053 acres, of which, 2,300 acres are infested. A map and description of the current regulated area is listed on the PCN program website at: http://www.aphis.usda.gov/plant_health/plant_pest_info/potato/pcn.shtml
- May 3-11, 2013, PPQ and the Idaho State Department of Agriculture (ISDA) collaborated to fumigate eight PCN-infested fields (601 acres, total) with methyl bromide. This was the first methyl bromide treatment for two of the fields and the second treatment for the other six fields. On average, two methyl bromide treatments reduce the viability of PCN by more than 99%.
- May 2013, one additional infested field advanced to the bioassay phase of evaluating eradication progress when viable nematode eggs were no longer detected in cysts from soil samples collected this spring. To date, all nine infested fields detected in 2006-2008 have advanced to the bioassay phase of evaluating eradication progress. One of these nine fields successfully completed bioassay in December 2012, making it eligible to return to potato production, although potatoes were not planted there in 2013. The field remains under State and Federal regulation, with modified sanitation requirements, and will be required to undergo full-field soil surveys following each the next four potato crops before declaring the field eradicated.

Bioassay assesses nematodes' ability to hatch from a cyst, infect a host plant and reproduce. Bioassays are conducted in a greenhouse containment facility at the University of Idaho in Moscow, Idaho. Bioassay results for the other eight fields are expected in the next 12 to 18 months.

Pale Cyst Nematode (PCN) Program Stakeholder Update
6/1/2013

SAMPLING AND LABORATORY INFORMATION:

- To date, the PCN Program has collected 416,444 soil samples in Idaho to ensure Idaho's freedom from PCN outside of the 21 known infested fields.
- More than 68,548 samples have been collected from the eradication fields in order to monitor eradication progress and to provide cysts to several institutions for PCN research.
- To date, the PCN laboratory in Idaho Falls has screened 480,328 soil samples collected in Idaho and approximately 48,478 samples from other potato-producing states. There have been no pale cyst nematode detections in the U.S. outside of Idaho.
- Since program inception, the PCN Program has analyzed the viability of 748 cyst samples collected from infested fields before and after fumigation treatments. The average PCN viability in fields that have been fumigated with methyl bromide 2 times has declined by more than 99% since eradication treatments began.
- Since 2009, approximately 73,700 soil samples have been collected and screened in support of the ISDA's post-regulation survey of fields deregulated by the USDA.

PROGRAM CHRONOLOGY:

Infested field detections and regulatory response:

On April 19, 2006, officials of USDA's Animal and Plant Health Inspection Service (APHIS) and the Idaho State Department of Agriculture (ISDA) announced the detection of pale cyst nematode (PCN), *Globodera pallida*, a major pest of potato crops. This was the first detection of the pest in the United States. The nematode cysts were detected during a routine survey of tare soil at an ISDA grader facility in eastern Idaho. Subsequent 2006 surveying to determine the possible origin and distribution of the pest in Idaho confirmed seven PCN-positive fields, all located in close proximity, within Bingham and Bonneville Counties, Idaho. In response to the detection, Canada, Mexico and Korea shut off importation of potatoes from Idaho, while Japan cut off importation of potatoes from the entire U.S.

On August 28, 2006, the positive fields and an area surrounding the fields were placed under a Federal Domestic Quarantine Order and parallel State Rule establishing restrictions on planting and interstate/intrastate movement of certain regulated articles from/within Idaho in order to prevent the spread of PCN.

A trace of seed sources for the positive fields did not yield any evidence that seed was the source of infestation. Over 90% of the 2006 Idaho certified seed potato crop was surveyed and found negative for PCN. Other sources of introduction such as imported farm equipment, nursery stock, foreign flower bulbs, and other soil bearing items were

Pale Cyst Nematode (PCN) Program Stakeholder Update
6/1/2013

investigated without providing any leads as to the origin of the infestation. As a result of the extensive surveying, negative test results and the regulatory actions of USDA and ISDA, Canada, Mexico, and Korea reopened their markets to Idaho potatoes with some restrictions. Japan allows potatoes from the U.S. except for Idaho, provided the product is not from Idaho seed.

On November 1, 2007 a Federal Interim Rule and Idaho State Rule went into effect, providing a framework for continued protection of Idaho and U.S. potato interests. In an effort to provide the best protection possible to the potato production and marketing system, the federal interim rule defined a regulated area in Bingham, Bonneville, and Jefferson Counties based on their associations with infested fields and production of a host crop within the past 10 years. Approximately 15,300 acres were added to the regulated area in response to the publication of the Interim Rule. Approximately 5,700 acres regulated by the Federal Order in August of 2006 were released from regulated status because they had no known association with the infested fields. Additionally, corn and small grain were removed from the list of regulated articles; peas and beans were added to the list of regulated articles.

On November 28, 2007, APHIS confirmed PCN in an additional field in Bingham County, Idaho as a result of continued intensive delimitation sampling. This find represented the 8th PCN-infested field found in Idaho. The field had been regulated since August 28, 2006 under the Federal Order, Interim Rule, and Idaho State Rules covering PCN in Idaho. The field is adjacent to two other infested fields. In response to discovering the 8th infested field, approximately 267 acres of farmland in parts of Bingham and Bonneville Counties were added to the regulated area. These fields became regulated due to having been farmed by a common operator in the same year as the 8th infested field and because they had at least one potato crop in the last ten years.

On December 11, 2008, APHIS confirmed PCN in another field located in Bingham County, Idaho as a result of continued intensive delimitation sampling. This find represented the 9th PCN-infested field in the regulated area in Idaho and is in close proximity to the other infested fields. The field has been regulated since August 28, 2006 under the Federal Order, Interim Rule, and Idaho State Rules covering PCN in Idaho. In response to discovering the 9th infested field, approximately 4,800 acres of farmland in parts of Bingham and Bonneville Counties were added to the regulated area. These fields became regulated due to having been farmed by a common operator in the same year as the 9th infested field and because they had at least one potato crop in the last ten years.

On April 29, 2009 APHIS published a Final Rule for PCN with three changes; 1) referring to the nematode of concern, *Globodera pallida*, by the common name “pale cyst nematode” rather than by the name “potato cyst nematode;” 2) allows the movement of *Phaseolus* species (beans) and *Pisum* species (peas) under the same conditions that apply to the movement of other crops to which soil is often attached; 3) requires that a protocol approved

Pale Cyst Nematode (PCN) Program Stakeholder Update
6/1/2013

by the Administrator as sufficient to support removal of infested fields from quarantine, rather than a 3-year biosecurity protocol, be completed in order to remove an infested field from quarantine. The change specifying a protocol approved by the Administrator provides an opportunity to amend the requirements for removal of infested fields from quarantine in a more streamlined manner. PCN officials do not anticipate this change will have any negative effect on the quarantine removal program.

On March 18, 2011, APHIS confirmed PCN in an additional field located in Bonneville County. This find represented the 10th PCN-infested field in Idaho. The 175-acre field is located about 1.5 miles from the nearest infested field. The detection was made in samples collected in 2010 as part of ongoing cooperative monitoring efforts by APHIS and the Idaho State Department of Agriculture (ISDA). In response to the 10th field detection, approximately 6,500 acres in Bingham and Bonneville County became regulated due to having been farmed by a common operator in the same year as the 10th infested field and because they had at least one potato crop in the last ten years.

PPQ confirmed an 11th and 12th PCN-infested field in Bonneville County, Idaho on August 17th, and September 16th, 2011, respectively. Prior to their detection, these two fields (150 and 42 acres respectively) were regulated due to their association with one or more infested fields in the past.

PPQ confirmed three new PCN-infested fields (the 13th, 14th, and 15th) in February 2012; two located in Bingham County (54 and 120 acres respectively) and one in Bonneville County (114 acres). These fields were previously regulated due to their association with one or more infested fields in the past. Approximately 2,829 acres were added to the regulated area in response to these detections.

PPQ confirmed the 16th and 17th PCN-infested fields in June 2012 (22 and 130 acres respectively). Both fields are located in Bingham County. Both fields were detected as part of the ongoing cooperative monitoring efforts by ISDA and PPQ.

PPQ confirmed the 18th and 19th PCN-infested fields in January 2013 (66 and 34 acres respectively). Both fields are located in Bingham County and were already regulated due to their association with one or more infested fields in the past.

PPQ confirmed the 20th and 21st PCN-infested fields in May 2013, (143 and 142 acres, respectively). Both fields are located in Bingham County in close proximity to other infested fields and were detected through routine delimiting surveys.

Successful survey, regulatory, and eradication activities since the initial detection in 2006 have facilitated some regulatory relief in Idaho while forwarding the program objectives of: preventing the spread of PCN, delimiting the current infestation of PCN, eradicating PCN, restoring lost potato markets, and maintaining existing potato markets.

Pale Cyst Nematode (PCN) Program Stakeholder Update
6/1/2013

Eradication treatments:

In 2007, USDA and ISDA initiated a program to treat fields which have tested positive for PCN. The program has included pre-treatment sampling, fumigation, and post treatment sampling for up to two treatments per year. In 2007-2011, the fields were treated with methyl bromide in the spring and with Telone II in the fall (with the exception of 2009, when there was a worldwide shortage of Telone II). The ISDA contracts with land owners for activities related to eradication of PCN from infested fields including access, tillage, irrigation, and maintaining a biosecurity planting at a fixed cost per acre. Bio-fumigants (oil radish, clover, and arugula) were planted on the infested fields in 2007-2009, and small grains in 2010-2011 to add an additional measure of control and prevent soil erosion over the summer months. The plants were tilled into the fields to replenish organic matter and rejuvenate the soil. In 2011, a small grain crop was grown for harvest in the three infested fields that triggered bioassay in 2010. No crops were grown for harvest in the infested fields in 2007-2010.

PPQ treated the six infested fields detected in 2011-2012 with methyl bromide in May 2012. The five fields in bioassay and the four fields with an average viability of less than 1% at that time were not fumigated in 2012. Operators of all infested fields planted non-host crops in 2012.

In May 2013, PPQ treated eight of the infested fields detected in 2011, 2012, and early 2013 with methyl bromide. This was the first treatment for three of the fields and the second treatment for five of the fields. Operators of all infested fields in the eradication program planted non-host crops in 2013.

For a full listing of PCN regulated articles, regulations, regulated areas, and past stakeholder updates, visit http://www.aphis.usda.gov/plant_health/plant_pest_info/potato/pcn.shtml.