



UPDATES AND RELATED INFORMATION:

- In April, APHIS was made aware of a concern regarding the methyl bromide soil fumigant used to treat pale cyst nematode (PCN) infested fields. We are taking this concern very seriously and we immediately started to ascertain the facts related to this concern. Additionally, out of an abundance of caution and in regard for those who raised the concern, we decided not to use methyl bromide soil fumigation to treat PCN-infested fields this spring. We are working with the U.S. Environmental Protection Agency and others to investigate this concern before resuming the use of methyl bromide soil fumigation in the PCN Eradication Program. Methyl bromide soil fumigation is just one of many techniques used in the PCN Eradication Program. The success of this program rests on its integrated pest management approach that includes soil movement restrictions and managed cultivation to effectively control PCN and ensure the continued vitality of agriculture in Idaho. APHIS will continue to keep growers and stakeholders informed of any decisions regarding the use of methyl bromide soil fumigation for the treatment of PCN.
- On April 6, approximately 204 acres in Bingham County were added to the PCN regulated area due to their inseparability from associated fields that became regulated on February 23. On April 27, approximately 4 acres were released from regulation when additional information was provided to show there was no prior association with an infested field. These changes bring the current regulated area to 10,316 acres, of which 2,897 acres are infested fields. All 26 infested fields detected to date lay within a 7.5 mile radius spanning parts of northern Bingham and southern Bonneville Counties. A map and description of the current regulated area is listed on the PCN program website at: <http://www.aphis.usda.gov/planthealth/pcn>.
- On January 22, PCN researchers from University of Idaho (Moscow, Aberdeen, and Parma) and ARS (Corvallis, OR and Prosser, WA) provided a PCN research update at the 47th Annual Eastern Idaho Potato Conference in Pocatello, Idaho. The update focused on agronomics and control of litchi tomato (LT) in southeast Idaho conditions. PCN program staff provided an overview of PPQ's plan for planting, monitoring, and controlling LT in PCN-infested fields in 2015.
- PPQ has moved the litchi tomato trap crop from research trials to production scale use on three fields (approximately 132 acres) of PCN infested fields in 2015. Since litchi tomato is non-native to Idaho, the ISDA has established a rigorous permitting process to clearly define parameters for planting, monitoring and controlling escape of the plant. A permit to grow the LT trap crop was granted to one farming operation who farms all three fields.
- To date, a total of thirteen infested fields have triggered entry into the greenhouse bioassay phase evaluating eradication progress, meaning that viable eggs are no longer detected in cyst samples. Greenhouse bioassay is a test of cysts' ability to hatch, feed, and reproduce when placed in proximity to a growing host plant. Eight of the thirteen fields have successfully completed the greenhouse bioassay test. These fields remain regulated but will benefit from reduced sanitation requirements and are eligible to return to potato production at the landowner's discretion. Full-field surveys to check for viable PCN will be required following each of the next three potato crops. Potatoes were planted on one of these eligible

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fields for the 2015 crop year and will be the first potato crop produced there since before PCN was detected in 2006.

SAMPLING AND LABORATORY INFORMATION:

- To date, the PCN Program has collected and screened 478,200 soil samples in Idaho to ensure Idaho's freedom from PCN outside of the 26 known infested fields.
- More than 118,800 samples from the eradication fields in have been collected and screened in order to monitor eradication progress and to provide cysts to several institutions for PCN research.
- The PCN laboratory has screened more than 58,800 samples collected in other potato-producing states. There have been no pale cyst nematode detections in the U.S. outside of Idaho.
- Since its inception, the PCN Program has analyzed the viability of 800 cyst samples collected from infested fields before and after fumigation treatments. The average PCN viability in fields that have been fumigated with methyl bromide at least 2 times has declined by more than 99% since eradication treatments began.
- Since 2009, 83,500 soil samples have been collected and screened in support of the Idaho State Department of Agriculture's (ISDA) post-regulation monitoring 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 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

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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 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

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1.5 miles from the nearest infested field. The detection was made in samples collected in 2010 as part of ongoing cooperative monitoring effort 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 and because they had at least one potato crop in the last 10 years.

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 and a history of potato production in the last 10 years. 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 and 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 had already been under regulation since May 2011 due to their association with one or more infested fields in the past and a history of potato production in the last 10 years.

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 found through routine detection surveys.

PPQ confirmed the 22nd PCN-infested field in April 2014 (92 acres). The field is located in Bingham County and had been regulated since May 2013 due to its association with other known infested fields. The field was detected through routine delimitation surveys.

PPQ confirmed the 23rd PCN-infested field in October 2014 (140 acres). The field, which was associated with another infested field detected in 2006, is located in Bingham County and was detected through ongoing monitoring efforts by PPQ and the ISDA. Trace work is ongoing to identify and sample fields that were exposed to soil from this infested field.

PPQ confirmed the 24th and 25th PCN-infested fields in November 2014 (77 and 140 acres, respectively, in Bingham County). Field #24 was detected through ongoing monitoring efforts by PPQ and the ISDA. Field #25, which had been under regulation since 2012, was detected by routine delimiting surveys. Approximately 994 acres in Bingham and Bonneville County were added to the regulated area in response to these detections.

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PPQ confirmed the 26th PCN-infested field in December 2014 (150 acres, in Bingham County). The field, which has been regulated since 2012, was detected by routine delimiting surveys. No additional associated fields were added to the regulated area as a result of this detection.

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.

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 2007-2014, the fields were treated with methyl bromide in the spring (with the exception of 2011, when one additional field was treated with methyl bromide in the fall). In 2007-2011, the fields were treated with Telone II in the later summer and early fall (with the exception of 2009, when there was a worldwide shortage of the chemical).

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 2011-2014, small grains, corn, or alfalfa crops have been grown for harvest in the infested fields. No crops were grown for harvest in the infested fields in 2007-2010.

For a full listing of PCN regulated articles, regulations, regulated areas, and past stakeholder updates, visit <http://www.aphis.usda.gov/planthealth/pcn>.