

## Pale Cyst Nematode (PCN) Stakeholder Update

12/15/11

### UPDATES AND RELATED INFORMATION:

- PPQ confirmed an 11<sup>th</sup> and 12<sup>th</sup> PCN-infested field in Bonneville County, Idaho on August 17<sup>th</sup>, and September 16<sup>th</sup>, 2011, respectively. Prior to their detection, these two fields (150 and 42 acres each) were regulated due to their association with one or more infested fields in the past. All twelve known infested fields are located within a 3.5-mile radius that spans a portion of northern Bingham County and southern Bonneville County.
- In 2011, PPQ regulated 14,174 acres in Bingham and Bonneville Counties as a result of the 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> infested field detections. The current regulated area is 15,641 acres, 1,467 acres of which are infested fields.
- In April 2010, PPQ found that two infested fields in the eradication program had no viable nematodes according to a non-vital staining analysis conducted at the PCN laboratory in Idaho Falls. In November 2010, a third field was found to have no viable nematodes. Cysts collected from these fields advanced to bioassay, which is the next step toward determining eradication success. Bioassay assesses nematodes' ability to hatch from a cyst, infect a host plant, and reproduce. Bioassays are currently underway at the University of Idaho in Moscow, Idaho. The entire bioassay process takes at least 18 months to complete; some preliminary bioassay results are expected in early 2012.
- In 2011, PPQ treated seven of the infested fields with methyl bromide, six in the spring and one in the fall. The three fields that triggered bioassay in 2010 did not receive methyl bromide in 2011, and grew a grain crop for harvest instead. Tricon 80/20 (80% methyl bromide/20% chloropicrin) was used this year due to new EPA restrictions that prohibited use of the 98/2 product (98% methyl bromide/2% chloropicrin) that was used previously. To increase retention of fumigant in the soil and overall fumigant efficacy, a different tarp material (totally impermeable film) was also used in the fields.
- In the late summer and fall months of 2011, PPQ treated ten of the infested fields with the nematicide Telone II. The 11<sup>th</sup> and 12<sup>th</sup> infested fields did not receive eradication treatments in 2011 due to the late dates of confirmation and lack of funds.

### UPCOMING EVENTS

- PPQ plans to hold a 5-year program review in late winter 2012. The goals of the review are to evaluate eradication progress, review current regulations and program practices, and determine an appropriate course for the future of the PCN Program. The 5-year review is slated to have three components: 1) a listening session in which stakeholders will be invited to provide comments to APHIS officials describing their experiences and make suggestions for the PCN Program, 2) a technical working group review of the program's survey, viability, and bioassay data, and 3) a meeting between PPQ officials, representatives of the State of Idaho, the Idaho Potato Commission, and program staff to review input from both the listening session and the technical working group.

### SAMPLING INFORMATION:

- To date, the PCN Program has collected more than 335,400 soil samples in Idaho to ensure Idaho's freedom from PCN outside of the 12 known infested fields.
- More than 60,000 samples have been collected from the eradication fields in order to monitor eradication progress and to provide cysts to several institutions for PCN research.

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- To date, the PCN laboratory in Idaho Falls has screened more than 271,100 soil samples collected in Idaho and approximately 42,500 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 viability of 640 cyst samples collected from infested fields has been analyzed before and after fumigation treatments. The average viability of PCN in the treated fields has declined by more than 99% since eradication treatments began.
- Since 2009, approximately 50,100 soil samples have been collected in support of the ISDA's post-regulation survey of fields deregulated by the USDA.
- In May 2011, ISDA initiated sampling procedures for fields growing potatoes that are destined for export to Mexico. Fields must be sampled at least one week prior to planting and have negative PCN lab results to be eligible for export. Ideally, fields should be signed up and sampled the fall before a potato crop is planted to ensure ample time for survey planning and lab processing. Contact the PCN Program office (208-522-2431) to make an export survey request.

### 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 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

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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 8<sup>th</sup> 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 8<sup>th</sup> 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 8<sup>th</sup> 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 9<sup>th</sup> 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 9<sup>th</sup> 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 9<sup>th</sup> 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 10<sup>th</sup> 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 10<sup>th</sup> 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 10<sup>th</sup> infested field and because they had at least one potato crop in the last ten years.

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 includes pre-treatment sampling, fumigation, and post treatment sampling for up to two treatments per year. Typically, the fields are treated with methyl bromide in the spring and with Telone II (a commonly used nematicide) in the fall. 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

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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.

### Regulatory requirements and deregulation process:

Equipment moving from federally-regulated fields may require cleaning prior to their movement out of the field. Cleaning can be done by USDA or by private parties, but USDA or ISDA must inspect and certify the cleaning. Regulated articles require either a limited permit or a certificate to move from regulated fields or areas. 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](http://www.aphis.usda.gov/plant_health/plant_pest_info/potato/pcn.shtml).

Federal deregulation requires a series of two negative full-field surveys (~15 lbs/acre) with at least a crop year or an equivalent interval between. ISDA deregulation requires one additional full-field survey (~20 lbs/acre) following federal deregulation and the harvest of a host crop.

Between November 2007 and November 2010, approximately 29,653 acres in Bingham and Bonneville County, Idaho were deregulated after successfully completing the Federal soil survey protocol. 2,171 of these acres were re-regulated in 2011 due to post deregulation exposures to the 10<sup>th</sup> field detected on March 18, 2011.