

Potato Cyst Nematode (PCN) Stakeholder Update
12/19/2008

SITUATION SUMMARY

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 potato 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. 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 movement of certain regulated articles from 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 and Mexico 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.

In 2007 ISDA and USDA 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. The ISDA contracts with growers for activities related to eradication of PCN from infested fields including access, tilling, irrigation, and maintaining a biofumigant planting at a fixed cost per acre. The first fumigation process was completed in May 2007. A bio-fumigant oil radish planted on the fields added an additional measure of control and prevented soil erosion over the summer months. The oil radish plants were tilled into the fields to replenish organic matter and rejuvenate the soil and release a compound which is toxic to the nematodes. No crops were grown for harvest in the infested fields in 2007. The second fumigation treatment was completed in August 2007.

On November 1, 2007 a Federal Interim Rule and Idaho State Rule went into effect, providing the framework for continued protection of Idaho and U.S. potato interests. 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, maintaining existing potato markets.

Regulated articles will require either a limited permit or a certificate to move from the regulated areas. Equipment moving from regulated areas may be required to be cleaned. Cleaning can be done by USDA or by private parties, but USDA or ISDA must certify the cleaning. Based on a sequence of surveys, areas can be released from regulation. For low risk fields, one single survey with negative results can qualify equipment to move from the surveyed field without cleaning. Complete deregulation of fields requires at least two negative surveys taken by USDA or ISDA with at least a ten month interval between surveys.

On November 28, APHIS confirmed PCN in an additional field in Bingham County, Idaho as a result of continued intensive sampling. This find represents the eighth field infested with PCN in the regulated area in Idaho. The field has 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 of the other infested fields.

On December 11, 2008, APHIS confirmed PCN in another field located in Bingham County, Idaho as a result of continued intensive sampling. This find represents the 9th field infested with PCN 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

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Idaho. The field is located directly across a road from another PCN infested field. In response to discovering the 9th infested field, approximately 4800 acres of farmland in parts of Bingham and Bonneville Counties will be added to the regulated area. These fields will be regulated due to having been farmed by a common operator in the same year as the 9th infested field and because they have had at least one potato crop in the last ten years.

In 2007 approximately 5000 acres regulated by the Federal Order in August of 2006 were released from regulated status. Additionally, corn and small grain were removed from the list of regulated articles. Peas and beans were added to the list of regulated articles.

In an effort to provide the best protection possible to the potato production and marketing system, approximately 125 fields were added to the regulated area in parts of Bingham, Bonneville, and Jefferson Counties in response to the publication of the Interim Rule for PCN. These fields are known to have been farmed by an operator the same year as he farmed one of the infested fields during the past 10 years and had at least one crop of potatoes during the past ten years.

In March 2008, more than 1400 acres of farmland in Bingham and Bonneville Counties successfully completed a soil survey protocol, resulting in their release from Federal Regulation.

In June and July 2008, the PCN Program deregulated over 580 acres of farmland subjected to intense survey and found free of PCN.

On December 9, 2008, approximately 1200 acres of farmland in Bingham and Bonneville Counties successfully completed a soil survey protocol resulting in their release from federal regulation for PCN. The December release represents the third release in 2008 of fields that successfully completed the survey-release protocol. In total, more than 3100 acres were released in 2008 after completing the intensive survey protocol without PCN detection.

UPDATES AND RELATED INFORMATION:

- ISDA's Food Quality Assurance Laboratory in Twin Falls completed the development of viability testing procedures for cysts collected by the PCN Program in the infested fields in eastern Idaho. Viability data were generated from samples collected from the infested fields before and after the first fumigation treatment in the spring of 2007. The preliminary results demonstrate that, on average, viability of cysts was reduced from 20% viability (pre-fumigation) to less than 6% viability (post-fumigation). These viability assessments are encouraging and provide valuable information about the efficacy of fumigation treatments, an integral component of our eradication effort. The results will assist in determining when to take the next step toward the ultimate goal of PCN eradication and the subsequent release of infested fields.
- Significant expansion of the PCN Program soil processing laboratory in Idaho Falls is complete. The expansion has more than doubled the number of microscopes available for soil sample processing. This capacity will facilitate faster survey results for stakeholders. The lab expansion in Idaho Falls also provides the ability to conduct viability assessments, formerly done exclusively at the Twin Falls lab. Having two labs with viability assessment capability assures sufficient capacity to process all the viability samples in a timely fashion. Finally, the lab expansion will allow the processing of national PCN survey samples without delaying the processing of Idaho samples.
- The second round of fumigation treatments of PCN positive fields were completed in May and August of 2008. In response to complaints about an offensive odor associated with last year's oil radish cover crop, the program switched to yellow blossom clover for the 2008 summer bio-security planting. Additional summer cover options, such as arugula, are being evaluated for 2009.

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- In 2008, the PCN Program conducted trace-forward surveys in Idaho fields where seed from farms in Alberta, Canada, infested with Golden Potato Cyst Nematode, was planted. More than 14,000 samples were collected from Idaho fields in response to the GN traceforward. Approximately 75% of trace-forward samples have been processed by the Idaho Falls laboratory without detections of GN or PCN.

SAMPLING INFORMATION:

- To date, more than 155,000 soil samples have been collected to confirm Idaho's freedom from PCN outside of the 9 known infested fields.
- Roughly 42,000 pre and post-fumigation samples have been collected in connection with PCN eradication treatments and viability assessments.
- Through December 2008, nearly 200,000 soil samples have been collected as part of the Idaho PCN Program.