Pale Cyst Nematode (PCN) Stakeholder Update
05/03/10

UPDATES AND RELATED INFORMATION:

- In 2010, a total of 2,463 acres have been deregulated through the soil survey and release protocol. Since program inception, a total of 29,327 acres have been released from federal regulation. The Idaho State Department of Agriculture continues to monitor deregulated fields through soil surveys following potato crops. There have been no detections of PCN in deregulated fields.
- The current regulated area is 1,426 acres, of which 1,100 acres are infested fields undergoing eradication treatments.
- Annual methyl bromide fumigation in the PCN infested fields began in mid-April 2010. Approximately 600 acres have been fumigated so far this year. Despite high winds and rainy weather in the Shelley, ID area, fumigation is expected to be completed by mid-May.
- The Korean and Japanese markets remain closed to Idaho potatoes but negotiations are underway to re-gain market access. Due to significant and broad-based industry support for state-wide PCN survey, extensive field surveys are being conducted throughout production areas in Idaho. All surveys outside of the nine known infested fields have been negative, and the general opinion by our trading partners is that potatoes produced outside regulated areas do not pose the biological risk for introduction of PCN.

SAMPLING INFORMATION:

- As of April 29, APHIS has completed viability testing for Pale Cyst Nematode (PCN) cysts collected in the autumn of 2009 from seven of the nine infested fields. Results from two of the fields indicate cyst viability is at zero percent. Results from the other five fields indicate average viability lower than one percent. The viability testing is a first step toward demonstrating eradication. Deep soil sampling and bioassay procedures will be conducted as subsequent steps. The zero viability readings trigger bioassay for those two fields.
- Through April 30, 2010, more than 267,500 soil samples have been collected as part of the overall Idaho PCN Program, 217,200 of which have been collected to confirm Idaho's freedom from PCN outside of the 9 known infested fields.

PROGRAM CHRONOLOGY

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. 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.

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In 2007, USDA and ISDA initiated a program to treat the PCN-infested fields. The program includes pre-treatment sampling, fumigation, and post treatment sampling for up to two chemical 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 bio-fumigant and a bio-security planting at a fixed cost per acre. Methyl bromide fumigant has been applied to the infested fields in the spring of each year since 2007. Biofumigants with nematicidal activity were planted in the infested fields in the summers of 2007 (oil radish) and 2009 (arugula). The oil radish and arugula plants were tilled into the fields to replenish organic matter and rejuvenate the soil and release a compound which is toxic to the nematodes. Biofumigants have also been used to prevent and control soil erosion in the infested fields through the summer months. The infested fields have been fumigated with Telone II in the fall of each year since 2007, with the exception of 2009, when the chemical was unavailable due to a world-wide shortage. Each fall, a bio-security cover of small grain is planted in the infested fields to stabilize soil and prevent erosion over the winter months. No crops have been grown for harvest in the infested fields since 2006.

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, and maintaining existing potato markets. As a result of the transition from the Federal Order to the Interim Rule, approximately 5,700 acres regulated by the Federal Order in August of 2006 were released from regulated status, and approximately 14,900 acres not previously in the program became regulated. Additionally, corn and small grain were removed from the list of regulated articles. Peas and beans were added to the list of regulated articles.

Regulated articles 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, 2007, APHIS confirmed PCN in an additional field in Bingham County, Idaho as a result of continued intensive sampling. This find represented 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.

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.

On December 11, 2008, APHIS confirmed PCN in another field located in Bingham County, Idaho as a result of continued intensive sampling. This find represented 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 Idaho. The field is located directly across a road from another PCN infested field, and was closely associated with two other infested fields over the past decade. In response to discovering the 9^{th} 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 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.