

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/296379829>

# MOLECULAR DIAGNOSTICS OF POTATO CYST NEMATODES (PCN) FROM THE NATIONAL SURVEY

Article in *Journal of Nematology* · September 2010

CITATIONS

0

READS

146

## 4 authors:



**Andrea Skantar**

United States Department of Agriculture

170 PUBLICATIONS 1,570 CITATIONS

[SEE PROFILE](#)



**Zafar Handoo**

United States Department of Agriculture

238 PUBLICATIONS 2,660 CITATIONS

[SEE PROFILE](#)



**Lynn Carta**

180 PUBLICATIONS 2,494 CITATIONS

[SEE PROFILE](#)



**David Chitwood**

United States Department of Agriculture

195 PUBLICATIONS 4,166 CITATIONS

[SEE PROFILE](#)

## Some of the authors of this publication are also working on these related projects:



C. elegans, EPN/EPB, Microbial Genetics, Antimicrobial peptides, plant protection, Phytophthora, plant pathogenic bacteria [View project](#)



Special Issue-Plants Journal: "The Systematics, Morphological, and Molecular Characterization of Economically Important Plant-Parasitic Nematodes" [View project](#)

Journal of Nematology 2010. 42(3):268 pp.

MOLECULAR DIAGNOSTICS OF POTATO CYST NEMATODES (PCN) FROM THE NATIONAL SURVEY.

Skantar, A.M., Handoo, Z. A., Carta, L.K., and Chitwood, D.J. Nematology Laboratory, USDA-ARS, Plant Sciences Institute, Beltsville, MD 20705

The potato cyst nematodes (PCN) *Globodera rostochiensis* and *G. pallida* are regulated pathogens of potato, a crop worth nearly \$3.9 billion in the United States. Since the initial discovery of *G. pallida* in Idaho in 2006, extensive surveys of the major potato growing acreage have been carried out, to determine the extent of PCN distribution and to ensure that appropriate steps are taken to prevent further infestation. Material suspected to contain PCN cysts is typically analyzed by morphological and molecular means at the USDA Nematology Laboratory in Beltsville, MD. Molecular confirmation of species identity has been achieved through amplification of the internal transcribed spacer (ITS-rDNA) using species-specific multiplex PCR, by analysis of restriction site polymorphisms (PCR-RFLPs), and if necessary, through DNA sequencing. Methods that allow discrimination of morphologically similar tobacco cyst nematode (TCN) from PCN have recently been developed. Assay validation, real-time PCR, and issues relevant to the future of PCN diagnostics will be discussed.