Disease Notes

First Report of the Pale Potato Cyst Nematode *Globodera pallida* from Bosnia and Herzegovina

B. Nježić, B. Gerič Stare, S. Širca, and N. Grujić

Affiliations

Authors and Affiliations

B. Nježić , Faculty of Agriculture, University of Banjaluka, Bulevar Vojvode Petra Bojovića 1A, 78000 Banjaluka, Bosnia and Herzegovina

B. Gerič Stare

S. Širca , Agricultural Institute of Slovenia, Hacquetova Ulica 17, SI-1000 Ljubljana, Slovenia

N. Grujić , University of Belgrade-Faculty of Agriculture, Nemanjina 6, 11080 Belgrade, Zemun, Serbia

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Abstract

Potato cyst nematodes (PCN), the golden cyst nematode *Globodera rostochiensis* (Woll.) Bahrens, and the pale potato cyst nematode *G. pallida* (Stone) stand out by their remarkable and efficient parasitic adaptations causing high economic losses in potato production worldwide. They are A2 quarantine pests in EPPO countries as well as in Bosnia and Herzegovina. Up to now, only *G. rostochiensis* was reported from Bosnia and Herzegovina in 2011 (1). A systematic survey on the presence of PCN on entire territory of Bosnia and Herzegovina started in 2011. During the PCN survey, each year 120 soil samples of 1.5 liters were collected in the Republic of Srpska, one of the two entities of Bosnia and Herzegovina. The samples were collected by soil auger 10 cm in length with a diameter of 1.5 cm consisting of 100 cores. Entire samples were processed by Seinhorst elutriator (4). In autumn of 2012, PCN viable cysts were found in two soil samples originating from one field. From one sample, 12 cysts were extracted, and 2 from another sample. The morphology of cysts and

second stage juveniles and molecular analysis established the identity of this species as pale cyst nematode *G. pallida* (3). In addition, the sequencing of the ribosomal DNA region revealed unequivocal similarity to *G. pallida* (GenBank Accession No. HF968449), while PCR-RFLP analysis (2) showed European type of *G. pallida*. The infested field is located in Rogatica, 70 km east of Sarajevo, which is one of the m seed and potato production areas in Bosnia and Herzegovina. The field history revealed that farm-propagated, farm-saved seed potatoes could spread the nematodes to other fields as well. Therefore, 26 additional samples were taken from the fields that belong to the infested field owner and the surrounding fields, but no cysts were found in additional samples. To determine infestation focus and its size, the infested field (1.1 ha) was divided into 46 plots (25 × 10 m) and resampled by taking samples of 60 cores per plot. The detailed sampling of the field revealed a high infestation of 1 cyst per gram of soil in the infestation focus. The high infestation level and the propagation of farm-own seed potatoes suggest that the introduction of *G. pallida* might have occurred several years ago, probably with imported seed potatoes. The infested field was subjected to the phytosanitary measure of banning potato production for a period of 6 years with the possibility of its prolongation, if cysts with live content are found afterward. It is expected that the nematode is present in other fields due to the farmer's practices of propagating farm-saved seed potatoes and deficient field machinery hygiene. Therefore, the whole area will be intensively monitored for the presence of PCN in the future. An adequate pest management plan will be prepared after PCN pathotype identification. To our knowledge, only one field was found infested with *G. pallida* during the 3-year PCN survey in Bosnia and Herzegovina. Strict phytosanitary measures for preventing further PCN introductions and spreading should be intensified.

References: (1) I. Ostojić et al. Plant Dis. 95:883, 2011. (2) S. Širca et al. Phytopathol. Mediterr. 49:361, 2010. (3) A. M. Skantar et al. J. Nematol. 39:133, 2007. (4) J. van Bezooijen. Methods and Techniques for Nematology, Wageningen University, 2006.

The American Phytopathological Society (APS)

3340 Pilot Knob Road, St. Paul, MN 55121

USA

+1.651.454.7250

FAX +1.651.454.0766

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