

1-1-2000

First Report of Aphanomyces Root Rot of Sugar Beet in Nebraska and Wyoming

R. M. Harveson

University of Nebraska-Lincoln, rhaveson2@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/panhandleresext>

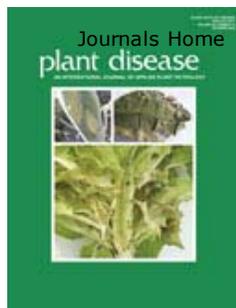


Part of the [Agriculture Commons](#)

Harveson, R. M., "First Report of Aphanomyces Root Rot of Sugar Beet in Nebraska and Wyoming" (2000). *Panhandle Research and Extension Center*. Paper 25.

<http://digitalcommons.unl.edu/panhandleresext/25>

This Article is brought to you for free and open access by the Agricultural Research Division of IANR at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Panhandle Research and Extension Center by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.



ISSN: 0191-2917

SEARCH

Enter Keywords

- Phytopathology
 Plant Disease
 MPMI

search

[Advanced Search](#)**Inside the Journal****BACK ISSUES**

(Issues before 1997)

[View Most](#)[Downloaded Articles](#)[About Plant Disease](#)[Editorial Board](#)[Submit a Manuscript](#)[Author Instructions](#)[Policies/Procedures](#)[Online e-Xtras](#)

= "Open" Access

plant disease

Editor-in-Chief: Anthony P. Keinath

Published by The American Phytopathological Society

[Home](#) > [Plant Disease](#) > [Table of Contents](#) > [Abstract](#)[Previous Article](#) | [Next Article](#)

May 2000, Volume 84, Number 5
 Page 596
 DOI: 10.1094/PDIS.2000.84.5.596B

Disease Notes

First Report of *Aphanomyces* Root Rot of Sugar Beet in Nebraska and Wyoming

R. M. Harveson, University of Nebraska, Panhandle Research and Extension Center, Scottsbluff 69361

Open Access.

Sugar beet (*Beta vulgaris* L.) plants exhibiting dull green and chlorotic foliage were first observed in a field near Dalton, NE, in late July 1999. Root symptoms included distal tip rot with internal, yellow-brown, water-soaked tissues. Isolations on MBV medium (1) consistently yielded *Aphanomyces cochlioides* Drechs. Water cultures produced primary zoospores that encysted at the tips of sporangiophores, followed by release of secondary zoospores within 12 h. Seedlings inoculated with zoospores began to die 2 weeks after emergence in a greenhouse. Symptoms on hypocotyls began as water-soaked lesions that turned black and thread-like. The causal agent was reisolated from infected seedlings, completing Koch's postulates. The disease was subsequently found in more than 15 separate fields, representing 5 of 11 sugar beet-growing counties in Nebraska and 1 county in Wyoming. In October, plants from the same fields were observed with stunted, distorted roots and superficial, scabby lesions associated with latent *A. cochlioides* infection. The pathogen could not be isolated from this stage but was confirmed by observing mature oospores within thin, stained sections under a microscope. The sections were additionally mixed with sterile potting soil and planted in the greenhouse with sugar beets. Several weeks after emergence, seedlings began to die, and the pathogen was reisolated. This represents the first report of *Aphanomyces* root rot and its spread in the Central High Plains. It also confirms that the described latent symptoms on sugar beet are caused by *A. cochlioides*.

Reference: (1). W. F. Pfender et al. Plant Dis. 68:845, 1984.

Cited by

Fungicide Registration and a Small Niche Market: A Case History of Hymexazol Seed Treatment and the U.S. Sugar Beet Industry

R. M. Harveson, C. E. Windels, J. A. Smith, J. R. Brantner, A. W. Cattanach, J. F. Giles, L. Hubbell, and N. R. Cattanach
Plant Disease Jul 2007, Volume 91, Number 7: 780-790
[Citation](#) | [PDF Print \(864 KB\)](#) | [PDF with Links \(423 KB\)](#)

An Integrated Approach to Cultivar Evaluation and Selection for Improving Sugar Beet Profitability: A Successful Case Study for the Central High Plains

R. M. Harveson, G. L. Hein, J. A. Smith, R. G. Wilson, and C. D. Yonts
Plant Disease Mar 2002, Volume 86, Number 3: 192-204
[Citation](#) | [PDF Print \(3478 KB\)](#) | [PDF with Links \(448 KB\)](#)

Quick Links[Add to favorites](#)[E-mail to a colleague](#)[Alert me when new articles cite this article](#)[Download to citation manager](#)[Related articles found in APS Journals](#)

This Journal is brought to you via a subscription from the Univ of Nebraska