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

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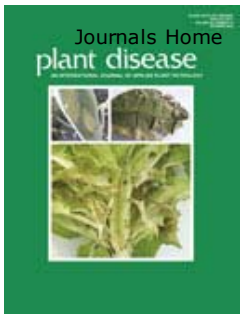

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Disease Notes

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

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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.

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