

Title *Chalara thielavioides* causes black root rot of carrots during long-term cold storage

Author M. Mayama.

Citation Journal of Plant Pathology Volume 90 (2, Supplement) August 2008, Book of Abstract, 9th International Congress of Plant Pathology, August 24-29, 2008 Torino, Italy,. 507 pages.

Keywords carrot; black root rot; *Chalara elegans*

Abstract

Black root rot of carrots has been one of the most common post-harvest diseases in supermarkets as well as domestic refrigerators in Japan. It is especially noted that root rot occurs in spite of storage at low temperatures. In carrot fields, such as in Hokkaido in the northern part of Japan, two species, *Chalara elegans* and *Chalara thielavioides* have been detected as soilborne pathogens of black root rot. However, the pathogen isolated from black lesions on carrots, that were stored at low temperature and distributed to the market, was exclusively *C. thielavioides*. Thus, the effects of temperature on the growth of two *Chalara* species on potato-dextrose agar and the symptom development on inoculated carrot roots were examined. The data showed that mycelial growth and the formation of chlamydospores and phialospores of *C. thielavioides* occurred even at 2.5°C and 5°C, but not with *C. elegans*. In fact, black rot lesions developed on *C. thielavioides*-inoculated carrots, but not on *C. elegans*-inoculated carrots, even if stored for two months. Conversely, the growth of *C. elegans* was better than that of *C. thielavioides* at 20-30°C. The present study indicates that *C. thielavioides* is highly tolerant of low temperatures and can cause black root rot on carrots as a serious postharvest disease during long-term cold storage.