

# 1. PaDIL Species Factsheet



## Scientific Name:

*Alternaria radicina* (Meier) Drechsler & E.D. Eddy  
(Deuteromycotina: Hyphomycetales: Dematiaceae)

## Common Name

Carrot black rot

Live link: <http://www.padil.gov.au:80/pests-and-diseases/Pest/Main/136597>

## Image Library

Australian Biosecurity

Live link: <http://www.padil.gov.au:80/pests-and-diseases/>

## Partners for Australian Biosecurity image library



Museum Victoria

<http://museumvictoria.com.au/>



CRC National Plant Biosecurity

<http://www.crcplantbiosecurity.com.au/>



Plant Health Australia

<http://www.planthealthaustralia.com.au/>



Department of Agriculture, Fisheries and Forestry

<http://www.daff.gov.au/>



Department of Agriculture and Food, Western Australia

<http://www.agric.wa.gov.au/>

## 2. Species Information

### 2.1. Details

**Specimen Contact:** Robin Coles - coles.robin@saugov.sa.gov.au

**Author:** Coles, R.

**Citation:** Coles, R. (2006) Carrot black rot(*Alternaria radicina*) Updated on 4/8/2010 Available online: PaDIL - <http://www.padil.gov.au>

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### 2.2. URL

Live link: <http://www.padil.gov.au:80/pests-and-diseases/Pest/Main/136597>

### 2.3. Facets

**Status:** Exotic Species Occurrence in Australia

**Group:** Fungi

**Commodity Overview:** Horticulture

**Commodity Type:** Fresh Roots, Fresh Stems, Fresh Vegetables, Leaves

**Distribution:** Cosmopolitan

### 2.4. Other Names

*Stemphylium radicinum* (Meier, Drechsler & E.D. Eddy) Neerg. (1939)

### 2.5. Diagnostic Notes

*Alternaria radicina* is a seed-borne pathogen and causes carrot losses due to poor seedling establishment and damping-off. This disorder occurs unpredictably, usually during periods of warm humid weather and has not been controlled successfully by fungicides such as thiram and iprodione applied as a seed coating. The fungus can also be soil-borne and can infect carrots at any stage of growth.

Carrots that survive early infection by *A. radicina* frequently develop a black ring of decay around the top of the stem and this reduces carrot quality. Older plants are particularly susceptible. Senescing leaves are often infected first, followed by infection of the crowns, that may lead to necrosis of the upper portion of the storage root. Late in the growing season the base of the petioles turn dark brown to black and eventually the leaves are killed. This causes the stem tissue to break during mechanical harvesting.

The disease can cause significant losses in seed crops where both roots and umbels might be infected.

Untreated imported carrot seed has been found to have *A. radicina* infestations of up to 35%.

The high incidence of *A. radicina* on imported carrot seed shows that the pathogen is common in many of the carrot seed-producing areas of the world.

### 2.6. References

Ben-Noon E, Shtienberg D, Shlevin E and Dinoor, A (2003) Joint Action of Disease Control Measures: A Case Study of *Alternaria* Leaf Blight of Carrot Phytopathology. 93, 1320-1328. Coles, R.B., T.J. Wicks and B.H. Hall (2003) Managing *Alternaria* Blight in Carrots Horticulture Australia Ltd, final Report VG00014 South Australian research and Development Institute, November 2003, pp 55. Coles, R.B. and T.J. Wicks (2003) The incidence of *Alternaria radicina* on carrot seeds, seedlings and roots in South Australia. Australasian Plant Pathology. 32, 99-104. Knudson M.B, and B. Jensen (2003) Biological control of seed-borne *Alternaria* spp. To enable the production of safe organic carrots. In 8th International Congress of Plant Pathology,

Christchurch, New Zealand, 2-7 February 2003 p. 40. Pryor B.M, Davis R.M, and R.L, Gilbertson (1994) Detection and Eradication of *Alternaria radicina* on Carrot Seed. *Plant Disease*. 78, 452-456. Pryor B.M, Davis R.M, and R.L, Gilbertson (2000) A toothpick Inoculation Method for Evaluating Carrot Cultivars for Resistance to *Alternaria radicina*. *HortScience*. 35, 1099-1102. Vlasova, E.A, Sazonova, L.V, and E.I, Fedorenko (1988) Immunity analysis of the diversity of *Daucus carota* L. and patterns in the distribution of resistance to disease (in Russian with English summary). *Sbornik Nauchnykh Trudov po Prikladnoi Botanike, Genetike, I Seleksii*. 118, 14-23.

## 2.7. Web Links

**Carrot news:** [http://www.sardi.sa.gov.au/pdfserve/hort/hort\\_crops/carrots/carrot1.pdf](http://www.sardi.sa.gov.au/pdfserve/hort/hort_crops/carrots/carrot1.pdf)

**Incidence data:** <http://www.publish.csiro.au/paper/AP02069.htm>

**Taxonomic relationships:** <http://apt.allenpress.com/aptonline/?request=get-abstract&issn=0027-5514&volume=094&issue=01&page=0049>

### 3. Diagnostic Images



Petiole infection of carrots  
**Alternaria radicina** infection of carrot : Robin Coles Rural Solution South Australia



**Alternaria radicina** lesions on carrot leaves  
**Host Symptoms:** Robin Coles Rural Solutions South Australia



**Alternaria radicina** collar infection of 6-8 week old carrot seedlings  
**Host Symptoms:** Robin Coles Rural Solutions South Australia



**Alternaria radicina** infection on coldstore carrots  
**Host Symptoms:** Robin Coles Rural Solutions South Australia

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