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Overview carrot diseases

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Legend:

PHI: Post-Harvest Interval

Alternaria dauci

English: **Alternaria leaf blight**
Dutch: **Alternaria**
French: **Alternariose**
German: **Alternaria**

- Foliar disease; leaf blight
- Moderate climate and wet conditions; persistent rains
- Especially during summer season or late in crop cycle

BASF Fungicides	Use Rate/Acre	PHI
Cabrio® EG Fungicide; FRAC Group 11	8 - 12 fl oz	0 days
Cevya® Fungicide; FRAC Group 3	3 - 5 fl oz	7 days
Endura® Fungicide; FRAC Group 7	4.5 fl oz	0 days
Merivon® Fungicide; FRAC Groups 11 & 7	4 - 5.5 fl oz	7 days
Pristine® Fungicide; FRAC Groups 11 & 7	8 - 10.5 fl oz	0 days
Tesaris® Fungicide; FRAC Group 7	3.4 - 4.6 fl oz	7 days
Elisys® Fungicide; FRAC Groups 7 & 3	7 fl oz	7 days

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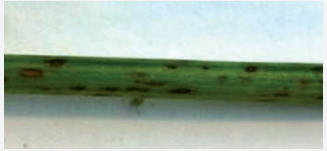

Cercospora carotae

English: **Cercospora leaf spot**
Dutch: **Cercospora**
French: **Cercosporiose**
German: **Cercospora**

- Foliar disease; leaf spot
- Warm and humid conditions
- On young leaves during spring and early summer
- Pronounced chlorotic halos in sunlight

BASF Fungicides	Use Rate/Acre	PHI
Cabrio® EG Fungicide; FRAC group 11	8 - 12 fl oz	0 days
Cevya® Fungicide; FRAC group 3	3 - 5 fl oz	7 days
Merivon® Fungicide; FRAC groups 11 & 7	5.5 fl oz	7 days
Pristine® Fungicide; FRAC groups 7 & 11	8 - 10.5 fl oz	0 days
Elisys® Fungicide; FRAC groups 7 & 3	7 fl oz	7 days

Erysiphe heraclei

English: **Powdery Mildew**
Dutch: **Echte Meeldauw**
French: **Oïdium**
German: **Echter Mehltau**

- Foliar disease
- High humidity is needed for initial infection
- Warm conditions are needed for further development of symptoms of powdery mildew
- White powdery leaf surface; older leaves

BASF Fungicides	Use Rate/Acre	PHI
Cabrio® EG Fungicide; FRAC group 11	8 - 12 fl oz	0 days
Cevya® Fungicide; FRAC group 3	3 - 5 fl oz	7 days
Endura® Fungicide; FRAC group 7	4.5 fl oz	0 days
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Xanthomonas hortorum pv. carotae

English: **Bacterial Leaf Blight**
Dutch: **Xanthomonas bacterievlekkenziekte**
French: **Proteobactèrie Xanthomonas**
German: **Xanthomonas Blattwelke**

- Foliar disease
- Warm and humid conditions
- Rain dispersal
- Similar symptoms as Alternaria dauci, firey chlorotic margins

BASF Fungicides	Use Rate/Acre	PHI
Serifel® BioFungicide; FRAC group 44	4 - 16 fl oz	0 days

Streptomyces scabies

English: **Scab**
Dutch: **Schurft**
French: **Gale commune**
German: **Schorf**

- Bacterial disease of carrot
- Soil borne disease
- In dry and warm conditions
- Especially in soils with pH of 5.5 - 7.5

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Pectobacterium carotovorum subsp. carotovorum

(syn. Erwinia carotovora)

English: **Soft rot**
Dutch: **Erwinia natrot**
French: **Bactérie du genre Erwinia**
German: **Erwinia Nassfäule**

- Bacterial disease
- Soil borne & storage disease
- Favored by anaerobic conditions & damage at harvest
- Especially with hot and wet conditions, be careful with irrigation during high temperatures!

Pythium spp.

English: **Cavity spot**
Dutch: **Cavity spot**
French: **La maladie de la tache/ Cavity spot**
German: **Wasserfleckenkrankheit**

- Pythium spp. (P.violae, P.sulcatum, P.coloratum; etc)
- Field and storage disease
- Especially at bad soil structure and long wet periods

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Rhizoctonia solani

English: **Crown rot of carrot**
Dutch: **Rhizoctonia wortelrot**
French: **Rhizoctone brun**
German: **Kraterfäule**

- Field and storage disease
- Black irregular sunken lesions; mainly on lenticels
- Forms extensive mycelium in storage

Phytophthora spp.

English: **Phytophthora root rot**
Dutch: **Ringrot**
French: **La maladie de la bague**
German: **Ringfäule**

- Various Phytophthora species
- Field and storage disease
- Easily spread by water
- Especially at bad soil structure and long wet periods

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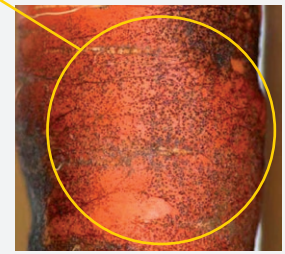
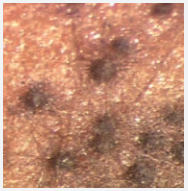
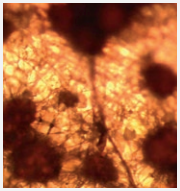


Close up: infection spots





Helicobasidium purpureum

English: **Violet root rot**
Dutch: **Violet wortel rot**
French: **Le rhizoctone violet**
German: **Violetter Wurzeltöter**

- Field disease
- Slow disease development
- Crop rotation is effective

Fusarium spp.

English: **Fusarium dry rot**
Dutch: **Fusarium**
French: **Fusariose**
German: **Fusarium**

- Fusarium spp. (F.solani, F.avenaceum; etc)
- Field and storage disease
- Primary and secondary disease
- Provoked by plant stress and extensive soil wetness

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Sclerotinia sclerotiorum

English: **Cottony rot**
Dutch: **Rattenkeutelziekte**
French: **Pourriture blanche/ Sclérotiniose**
German: **Weißfäule/Pelzfäule**

- Field and storage disease
- Humid conditions, dense canopy and dead leaves provoke sclerotinia development
- Avoid damage or wounding of harvested roots
- Forms white fungal mat with black sclerotia

BASF Fungicides	Use Rate/Acre	PHI
Endura® Fungicide; FRAC group 7	7.8 fl oz	0 days
Tesaris® Fungicide; FRAC group 7	4.6 fl oz*	7 days
Serifel® BioFungicide; FRAC group 44	4 - 16 fl oz	0 days

*Suppression only.

Botrytis cinerea

English: **Gray Mold**
Dutch: **Grauwe schimmel**
French: **Botrytis**
German: **Grauschimmel**

- Storage disease
- Forms black, irregularly shaped sclerotia
- Affected tissue has velvety grey appearance
- Can reside on the surface of wooden storage boxes and can initiate disease on healthy carrots

BASF Fungicides	Use Rate/Acre	PHI
Endura® Fungicide; FRAC group 7	7.8 fl oz	0 days
Serifel® BioFungicide; FRAC group 44	4 - 16 fl oz	0 days

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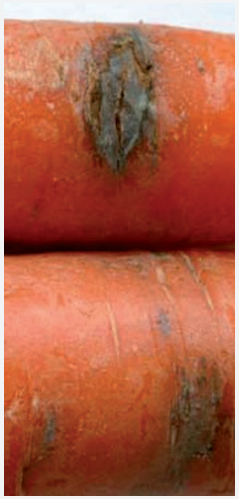
Rhexocercosporidium carotae

English: **Acrothecium rot**
Dutch: **Acrothecium**
French: **-**
German: **-**

- Storage disease
- Develops at low temperatures during storage (from –3° C and up)
- Brown lesions with dark edge



Mycocentrospora acerina

English: **Licorice rot**
Dutch: **Mycocentrospora**
French: **La tache noire de racine**
German: **Schwarzfaeule**

- Storage disease
- Early symptoms of the disease are black, horizontal stripes, then the spots turn watery-brown
- Early symptoms similar to Pythium spp. and Rhexocercosporidium carotae
- Provoked by damaging during harvest
- Develops under cool room conditions

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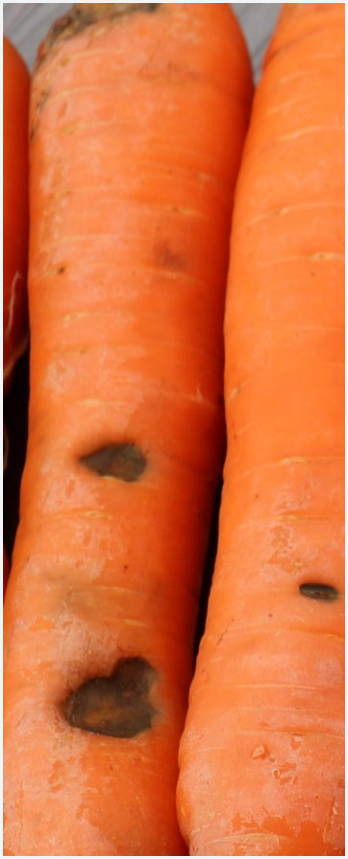
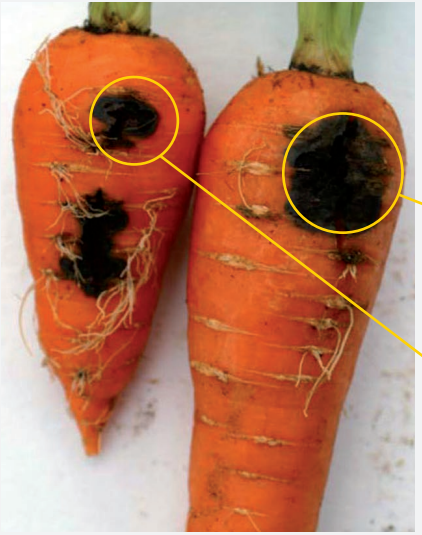
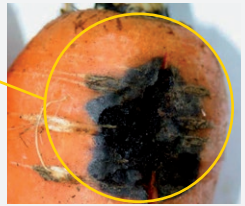


Cylindrocarpon spp.

English: **Cylindrocarpon root rot**
Dutch: **-**
French: **-**
German: **-**

- Soilborne disease
- Can be caused by several Cylindrocarpon species
- Round to oval, dark brownish, dry, sunken lesions
- Mostly seen after storing the carrots long time at low temperatures
- Symptoms often occur near the tip of the carrot, only in case of severe infestation several lesions can be seen on the same carrot (difference to Rhexocercosporidium carotae)





Alternaria radicina

English: **Black rot**
Dutch: **-**
French: **-**
German: **Wurzel Alternaria**

- Field and storage disease
- Temperate, humid conditions
- Irregular black spots
- Foliar disease of minor importance

BASF Fungicides	Use Rate/Acre	PHI
Serifel® BioFungicide; FRAC group 44	4 - 16 fl oz	0 days

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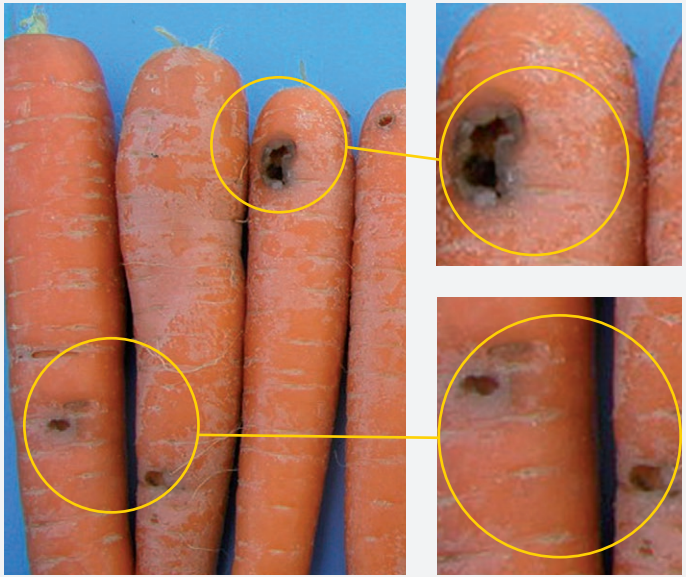
Thielaviopsis basicola/ Chalaropsis thielavioidis

English: **Chalara rot / Black root rot**
Dutch: **Supermarktschimmel**
French: **-**
German: **-**

- Not visible in field or during storage
- Disease develops after carrot washing when stored above 6°C



Agriotis spp.

English: **Wireworm**
Dutch: **Ritnaalden**
French: **Taupins**
German: **Drahtwurm**

- Various Agriotis species
- Field pest
- Larvae of click beetles are the damaging stage
- Larvae survive in soil for several years

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Picture courtesy: “De Groene Vlieg”

Psila rosae

English: **Carrot fly**
Dutch: **Wortelvlieg**
French: **Mouche de la carotte**
German: **Möhrenfliege**

- Field pest
- Temperate growing regions
- Two to three generations per season
- Monitoring by sticky trap system

Aster Yellows Phytoplasma

English: **Aster Yellows Phytoplasma**
Dutch: **-**
French: **Jaunisse de l'Aster**
German: **-**

- Witches broom; adventitious secondary roots
- Systemic phytoplasma; symptoms on foliage and root
- Transmitted by leafhoppers
- Wide plant host range

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Carrot Red Leaf Virus

English: **Carrot Red Leaf Virus (CRLV)**
Dutch: **Roodbladigheidsvirus**
French: **Virus de la carotte rouge des feuilles**
German: **Rotblattvirus**

- Foliar disease
- Often present together with Carrot Mottle Virus, resulting into “Carrot Motley Dwarf”
- Transmitted by the willow-carrot aphid (Cavariella aegopodii)

Meloidogyne chitwoodi

English: **Columbia Root-Knot nematode**
Dutch: **Maiswortelknobbelaaltje**
French: **Nématode à galle des racines**
German: **Maiswurzelgallennematode**

- Soil borne root problem
- Temperate growing regions
- Root galling near the lenticells
- Mainly in sandy soils

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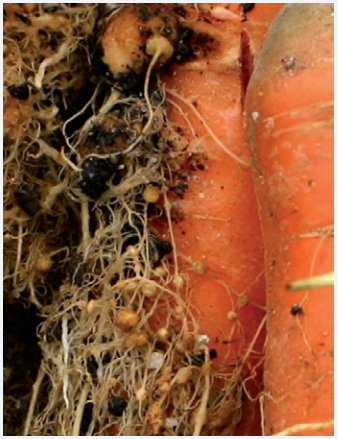
Meloidogyne hapla

English: **Northern Root-Knot nematode**
Dutch: **Noordelijk Wortelknobbelaaltje**
French: **Nématode à galle des racines**
German: **Nördlicher Wurzelgallennematode**

- Soil borne root problem
- Temperate growing regions
- Tap root forking and stunting and typical spin like galls on the side roots
- Mainly in sandy soils, wide host range



Meloidogyne incognita/javanica

English: **Southern Root-Knot nematode**
Dutch: **Zuidelijk Wortelknobbelaaltje**
French: **Nématode à galle des racines**
German: **Südlicher Wurzelgallennematode**

- Soil borne root problem
- (Sub) tropical growing regions
- Galling, knobby roots
- Both species have indistinguishable symptoms
- Mainly in sandy soils, wide host range

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Forking

English: **Forking**
Dutch: **Vertakking**
French: **Racines fourchues**
German: **Beinigkeit**

- Field problem
- Biotic causes: Pythium sulcatum, several other soil borne fungi, nematodes, etc.
- Abiotic causes: poor soil structure or obstructions (rocks, compaction), wind, herbicides, etc.

Notes

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