



# Factsheet

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## Carrot rust fly *Psila rosae*

### *Exotic threat to Western Australia*

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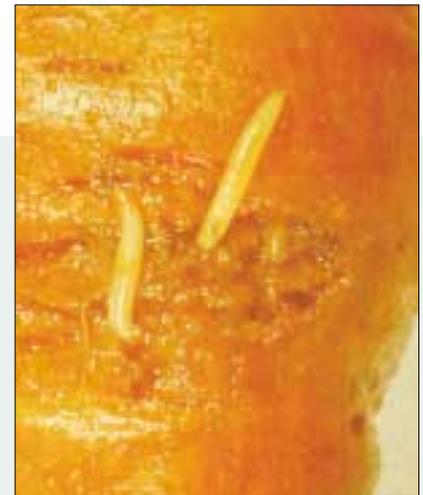
#### Background

Carrot rust fly was probably introduced into North America, South Africa and New Zealand from Europe. There is a considerable risk of the species being transported as larvae in root crops, especially to other temperate

countries like Australia. This reinforces the need for thorough quarantine measures to remain in place. For further information on WA quarantine regulations for this pest please refer to the Carrot Industry Protection Plan and Reference Manual, or contact Agriculture Western Australia's Quarantine Entomologist, Mike Grimm, on (08) 93683752.



ADULT CARROT RUST FLY

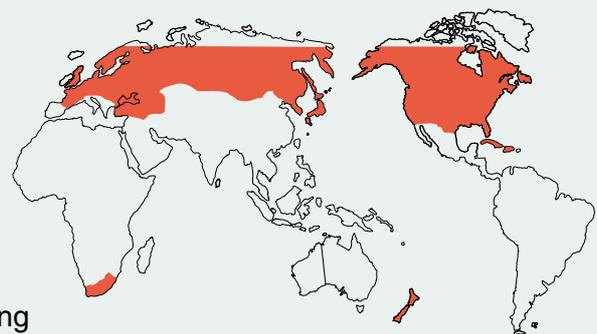


LARVAE FEEDING ON CARROT ROOT

#### Potential impact

Carrot rust fly reproduces successfully in South Africa as well as the carrot districts in warmer parts of the North Island of New Zealand. It is likely that the pest would flourish in the cooler areas of south-western Western Australia.

Carrot rust fly is a severe pest of carrots, killing many seedlings early in the year or making the final crop unsaleable due to the level of larval mines, secondary rots and the uneven size of root development.



DISTRIBUTION



## Plants affected

### Major hosts

*Daucus carota* (carrot), *Pastinaca sativa* (parsnip), *Apium graveolens* (celery), *Petroselinum crispum* (parsley), *Levisticum officinale* (lovage), *Apium graveolens* var. *rapaceum* (celeriac).

### Minor hosts

*Anethum graveolens* (dill), *Foeniculum vulgare* (fennel, which frequently occurs as a roadside weed in WA), *Anthriscus cerefolium* (chervil), *Carum carvi* (caraway), *Coriandrum sativum* (coriander).

### Wild hosts

*Conium maculatum* (poison hemlock, which is naturalised but not common in the Perth region).

## Season of occurrence

Adult flies emerge from overwintering cocoons in spring, and females lay their eggs on or near the crowns of young carrots. The eggs hatch after about ten days, and the maggots feed for up to 7 weeks before pupating in the soil. There can be two or three generations per year depending on climatic conditions.

## Mode of spread:

### Natural

Adults are weak fliers, but wind does appear to play a role in their dispersal.

### Human aided

There is considerable risk of the species being carried as larvae in root crops. There is also the possibility of transferring pupae in infested soil.

## Symptoms

The larvae feed on the roots of young and mature plants. Symptoms include partial dieback with yellowing, or the whole plant can turn brown and die due to internal feeding.

In carrots the young plants are attacked on the taproots and may die, leaving gaps in the crop. Larger carrot plants are attacked at the base of the taproot and lower down, showing irregular brown channels under the surface, from which the creamy-white larva (maggot) can be extracted. Where damage to plants is severe, the leaves become reddish and the plant may die, particularly if stressed from dry conditions.

In parsnips the damage is similar to that on carrots, but usually it is confined to the top 15 cm of the root.

In celery the larvae bore into the roots, crown and petioles, resulting in yellowing of the leaves and a reduction in growth or death of young plants.

In parsley the larvae live in the surface of the taproot and in the lateral roots.



PHOTO: ENTOMOLOGICAL SOCIETY OF CANADA

PUPAE OF CARROT RUST FLY



PHOTO: BEJO ZADEN, HOLLAND

DAMAGE TO CARROT

