



Fact Sheet

Celery Mosaic Virus

Factsheet 15/2001

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Hosts

Celery mosaic virus (CeMV) causes a serious disease of celery worldwide. It also infects other members of the plant family it belongs to (Apiaciae) including aniseed, caraway, carrot, celery, celeriac, chervil, coriander, dill, parsley, parsnip and poison hemlock. However, its principal host is celery.

Distribution

CeMV was first found infecting celery crops in WA in November 1997. Since then incidence of CeMV infection has steadily increased in celery cropping areas in the Perth Metropolitan area. In a 2000 survey of 15 celery growing properties from a wide selection of Perth metropolitan districts, all were infected with CeMV. Incidence rapidly increases once the virus is introduced. For example on properties where symptoms were first noticed less than two years ago celery crops are now often greater than 70% infected with CeMV.

In South Australia in the 1980's the celery industry was devastated due to CeMV. It is only in recent years that the industry has started to re-emerge. For the past four to five years in Victoria celery growers have been struggling to control epidemics of CeMV in celery. The virus is also well established in celery crops on the Darling Downs in Queensland.

Symptoms and yield loss

The symptoms of CeMV in celery plants are severe vein clearing of leaves, leaf up-curling, leaf chlorosis and plant stunting. Celery plants that become infected in the early to middle part of their growing cycle are unmarketable while plants that become infected late may be marketable but with a reduced shelf life.

Spread

CeMV is spread by aphids in a non-persistent manner (i.e. it is picked up and transmitted in brief probes) and is not recorded being transmitted through seed. Spread is perpetuated by sequential plantings of celery all year round without a cropping break and by close proximity of celery growers' properties to each other. Spread can be greater in late autumn and spring following flushes of winged aphid activity, but occurs all year round. Infection of celery can occur in nurseries before distribution and spreads the infection to new sites.

Control

Management of this disease is achieved by minimising the CeMV infection source for acquisition by aphids and thereby also minimising the amount of virus spread within celery crops. Localities with properties with high incidences (i.e. greater than 10%) are recommended to adopt a 3 month 'celery free period'. This requires that no live plant material of celery or related susceptible crops (e.g. celeriac, coriander, dill, fennel, parsley) be present on the nearby properties or within a celery growing locality. Old crop residues must be removed and any volunteer celery plants emerging rigorously destroyed.

Where properties have low incidences, growers should use the integrated disease management strategy to prevent CeMV spread getting out of hand.

This involves:

1. Ensuring that only celery seedlings tested and found healthy prior to transplanting are used
2. Roguing out infected plants showing symptoms
3. Avoiding overlapping sowings in close proximity, and sequential plantings side by side, of celery crops so that the virus does not move from one to the next
4. Promptly destroying or removing finished crops to eliminate reservoirs of CeMV for further spread
5. Promptly removing weeds that may act as a virus source (e.g. wild fennel) and any volunteer celery
6. Rotating susceptible crops (e.g. celery and parsley) with non-host crops (e.g. cabbage, lettuce etc.)
7. Avoiding planting dates that result in plants being at their most susceptible young growth stage when aphid numbers peak
8. Adopting a 'celery free period' to act as a virus break where levels exceed 10% infection

There are no known resistant varieties of celery. Insecticide sprays to control spread of the virus are not recommended as insecticides rarely act fast enough to prevent aphids making the brief probes needed to acquire and spread CeMV. In fact spraying can make aphids hyperactive resulting in more spread of virus.

Plant samples with suspect infection can be sent to AGWEST Plant Laboratories for testing for CeMV (9368 3721)



Fig. 1 Celery leaf infected with CeMV showing severe leaf vein clearing and stunting (right) and healthy (left).

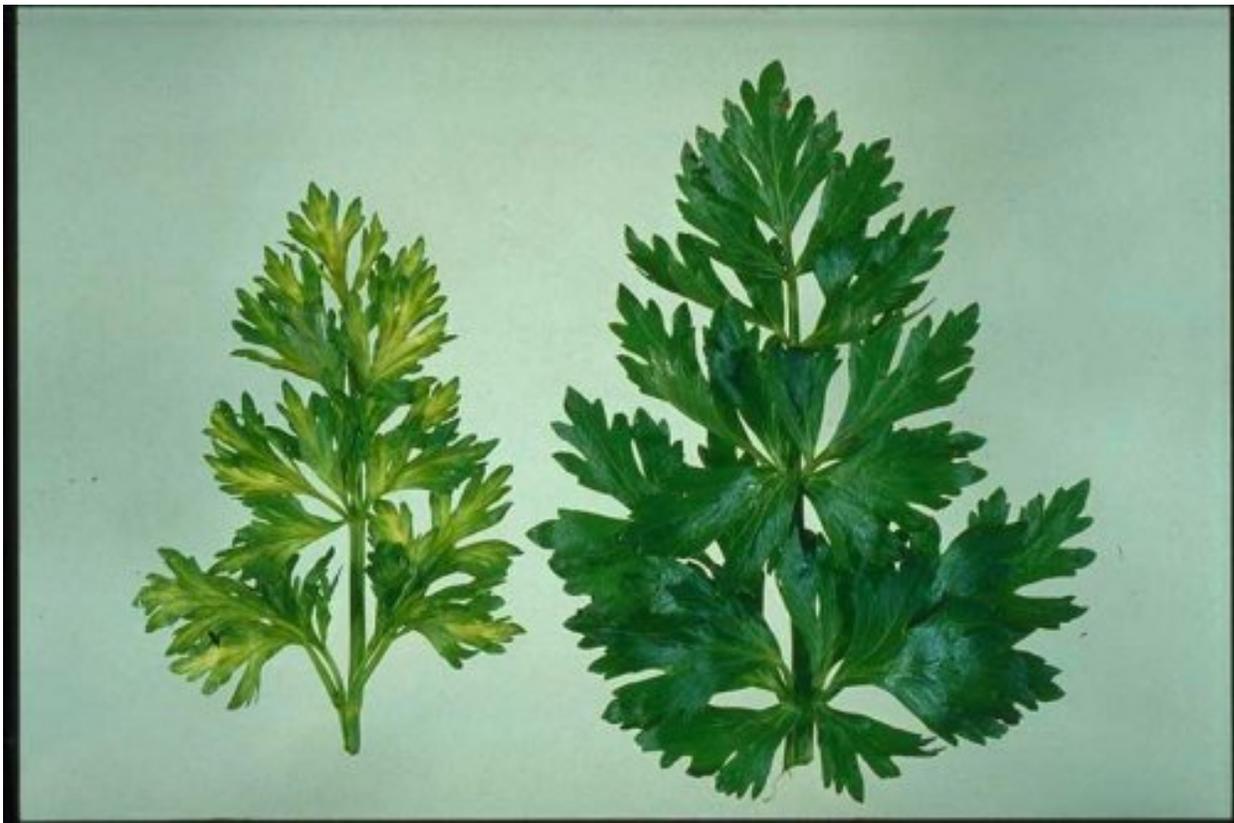


Fig. 2 Celery plant infected with CeMV (top right) showing stunting, severe vein clearing and leaf up-curling surrounded by healthy plants.

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