

INFORMATION SHEET

Symptoms of Cucumber Green Mottle Mosaic Virus (CGMMV)

VARYING SYMPTOMS

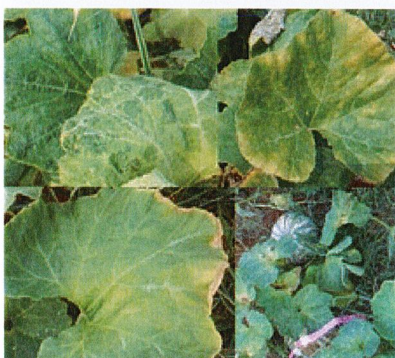
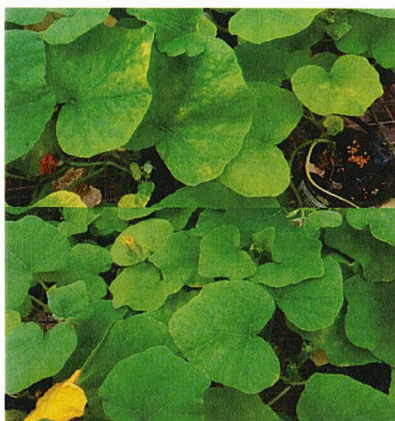
Three of the most common crops grown in the Northern Territory; watermelon, cucumber and pumpkin, show varying symptomology not only within each crop species but also between species. A consideration when looking for symptoms is whether the crops are grown in the ground and in the open, or in pots under shade structures.

Within pots, the symptoms are often severe, with very detailed mottling, while in the field, symptoms in watermelon and pumpkin can vary from subtle to severe, often making it difficult to observe and distinguish between other diseases and nutritional problems.

Cucumber



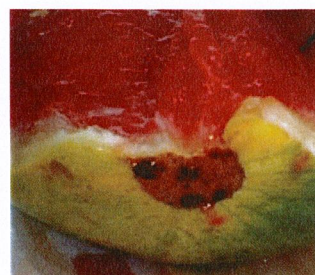
Pumpkin



Watermelon



The fruits rarely show symptoms on the outside, however browning and lesions on the peduncle (stalk) has been noted. When an infected fruit is dissected, the internal structure is sponge like with a meat-like texture and is not suitable for market.



Above: examples of lesions on the watermelon peduncle

Above: examples of infected watermelon fruit

For further details, contact **Lucy Tran-Nguyen**, DPIR Principal Molecular Scientist on (08) 8999 2235

Symptoms of Cucumber Green Mottle Mosaic Virus

Cucumber green mottle mosaic virus (CGMMV) is a tobamovirus capable of infecting cucurbit, Asian vegetables and melon crops.

Identifying CGMMV within crops can be difficult early on as visual symptoms may not be observed until 2-6 weeks following infection. This is also dependent upon factors including; initial titre of the virus, temperature during infection and cultivar and species of host which can influence the level or load of symptomology.

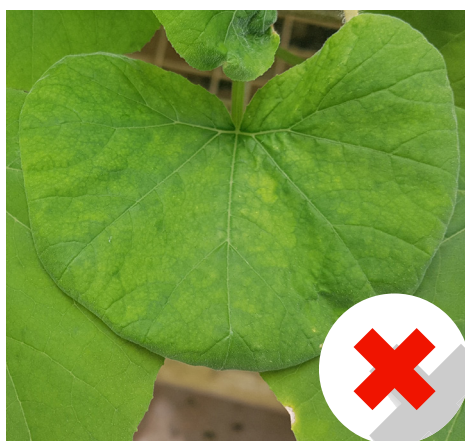
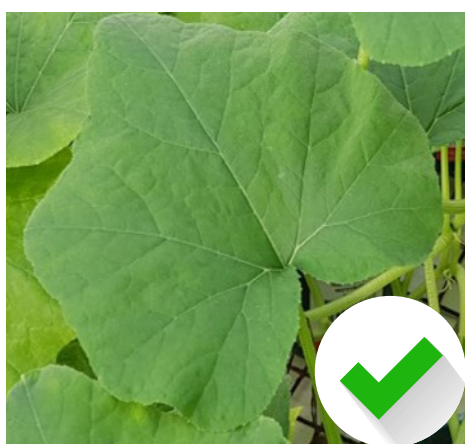
SYMPTOMS

Mosaic mottling of leaf material is the most common symptom in an infection and often the only symptom. This can be confused with Potyvirus, which also causes similar symptomology in the leaf material of cucurbits.

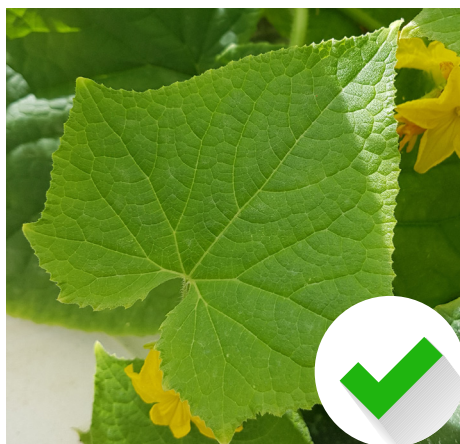
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Please see examples of healthy and infected plants below:

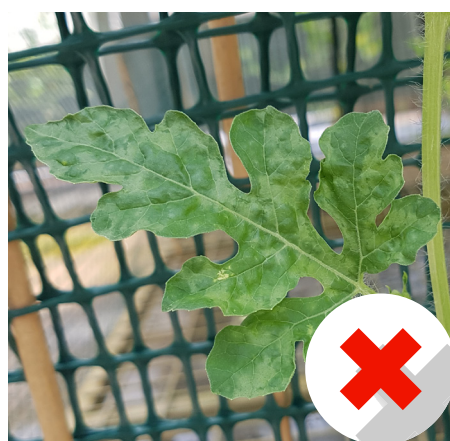
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Cucumber



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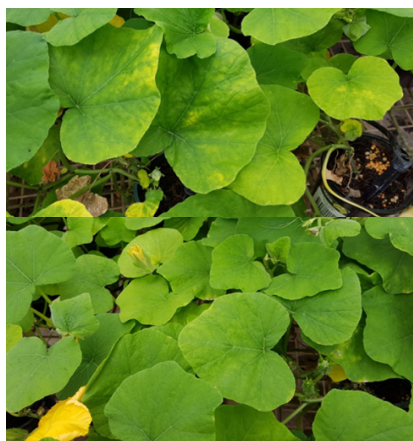
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VARYING SYMPTOMS

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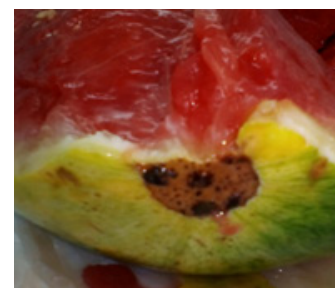
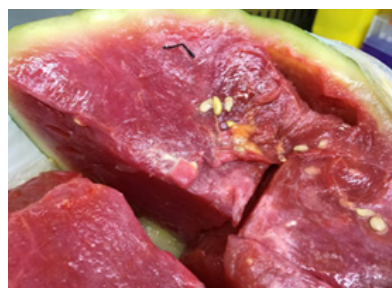
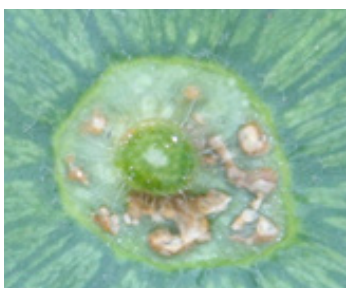
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Cucumber



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Above: examples of infected watermelon fruit

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Cucumber Green Mottle Mosaic Virus (CGMMV)

SYMPTOMS AND DAMAGE

The hosts of CGMMV include cucumber, bottle gourd, melons, pumpkin, squash, watermelon, zucchini and other species. In 2014, discovery of CGMMV in Katherine prompted a biosecurity emergency response focused on eradication. Since this time, CGMMV was detected in Queensland in April 2015 and in Western Australia in July 2016. Nationally, it is accepted that CGMMV is endemic in NT and WA and still under quarantine in QLD.

Symptoms can vary between plant species and sometimes can be difficult to diagnose without laboratory testing. The most common symptoms can be observed on the leaves or fruit.

Symptoms on leaves

- Mottling and mosaic
- Blistering or bubbling
- Vein clearing
- Leaf distortion

Symptoms on fruit

- Often no external symptoms
- Spotted and distorted
- Internally discoloured and rotting
- Uneven ripening



Fruit with yellow patches in flesh.
(most extreme case observed)



Rotten/mushy flesh.



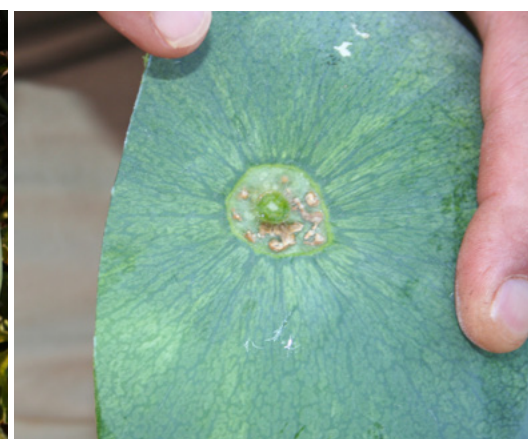
Fruit with internal breakdown and cavities.
Note the patch of rotten/mushy flesh, whilst the rest of the flesh is still relatively normal.



Leaf mottling.
Photo taken overseas © Monsanto



Fruit with necrotic patches on stalk.



Necrotic area on fruit peduncle.

This project has been funded by Horticulture Innovation Australia Limited using the research and development Australian vegetable levy and funds from the Australian Government.

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For more information phone the Exotic Plant Pest Hotline on 1800 084 881 or visit www.nt.gov.au