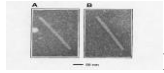


CGMMV

On the Northern Adelaide Plains

Cucumber Green Mottle Mosaic Virus



Rod shaped Virus particles CGMMV

Australia has recently become a new destination for a virus which is similar to Tobacco Mosaic Virus and is known as Cucumber Green Mottle Mosaic Virus or CGMMV. It has been detected in watermelon crops in the Northern Territory and in cucumber crops in WA.

It is very easily spread by direct contact, is carried on the seed of susceptible host plants and leafy green plants that are not hosts or not affected by the disease it causes. It is not known to be spread by insect vectors such as sap sucking insects like Thrips which spread many other plant viruses. Symptoms can be very variable.

The virus is widespread in Asia, Europe, Canada and the Middle East. It was first isolated in 1935 in England. The virus is particularly virulent and can be transmitted on workers clothes, shoes, and hands and can be transmitted by handling plants and touching leaves.



Photo 1: Leaf symptoms of CGMMV on cucumber

Sap from infected plants contains huge numbers of virus particles and can enter new plant hosts through tiny wounds on the leaf, stems and trichomes (plant hairs).

HYGIENE and QUARANTINE: CGMMV attacks a wide range of hosts including melons, pumpkin, zucchini, squash and cucumbers. It can cause devastating leaf blisters, curling, venation and necrosis. In watermelon the fruit can develop internal rind discoloration and collapsed flesh. The virus can survive on tools and other inert surfaces and can remain viable in dry sap for months on host plants and on non-host plants which could come into the state from other states. This is the reason why hygiene and quarantine are extremely important in the control and prevention of this disease



Photo 2: Extreme blister formation on cucumber leaves

Hygiene and Control Methods.



Photo 3: Hygiene on farm is extremely important – these dirty gum boots can transmit virus from the soil to the cropping areas and should be cleaned and disinfected.

If you suspect that your farm has become infected with CGMMV in the future you must remove all suspected plants and hydroponic media from the area in the greenhouse or outside if field grown crops are affected.

HYGIENE – THE FIRST DEFENCE

There is no method of controlling the disease as with other virus diseases such as Tomato Spotted Wilt Virus (TSWV) which is spread by the insect vector Western Flower Thrips. Insecticidal sprays to control the disease (TSWV) spread by controlling the insect vector like Thrips will not work as a preventative alone for CGMMV. The prevention of this disease is the best method of control and involves the use of viricidal chemical washes and complete cleanliness and farm hygiene to the point of almost paranoia. Prevention is best achieved through employing the following techniques and tactics.

- Do not allow personnel or their machinery to enter your farm from other properties unless they have been thoroughly washed down with high pressure washers and then

sanitized with a viricidal chemical preparation such as a 2 % Virkon™ solution.

- Disinfect all tools implements, tarpaulins, gloves, clothes and plastic sheeting with Virkon™ 2% solution.
- Organic matter on boots tools and clothing must be removed and disinfected.
- Any soil or media that is spilled or being discarded at the end of cropping should be treated and any surfaces should be clean of organic matter.
- Greenhouse structures, irrigation lines, sprinklers etc. must be cleaned and sanitized. High pressure wash with detergent to remove all organic matter and dust that can carry the virus particles.
- The structures tables or any objects must be treated with Virkon™ solution then washed with clean water.
- Do not allow workers to enter cropping areas in clothes used on prior days or if they have come from other farms.
- Fumigation of the soil prior to planting with safely applied fumigants or conduct bio-fumigation using mustard or Sorghum.
- Sap sucking insects do not spread the virus through feeding but the virus can stick to them. Use sticky traps and spray or IPM when insect numbers exceed normal limits.

In Crop Sanitation Procedures

- Foot Mats or baths with 2% Virkon™
- Disinfect clothing and tools with 2.1% Trisodium phosphate at end of rows
- Disinfect gloves, hands, snips picking trolleys with 1% Virkon™ solution at row ends. Use Tyvek™ disposable suits.

Recommended reading and references.

1. Virus Particles of Cucumber Green Mottle Mosaic Tobamovirus Move Systemically in the Phloem of Infected Cucumber Plants University Madrid
2. Agri Facts Managing CGMMV 256/6351 Alberta Agriculture Department of Canada

**Note: To discuss CGMMV control contact
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