



Regulated diseases commonly found on imported fruit and vegetables



Import interceptions

There are comparatively few findings of regulated diseases on imported fruit and vegetables in comparison to findings of insect pests.

In recent years the 2 main commodities in which we have found such diseases are a range of citrus fruit in which we find a range of fungal and bacterial diseases causing scabs, spots and cankers; and in sweet peppers and chillies (*Capsicum*) which we've found to contain regulated viruses.

The majority of findings in Citrus have been from South Asia, in particular Bangladesh, but also North Africa (e.g. Egypt) and Central and South America (Guatemala and Argentina)

Most findings in peppers have been from sub-Saharan Africa, and in particular from East African countries, but also from China and Pakistan.



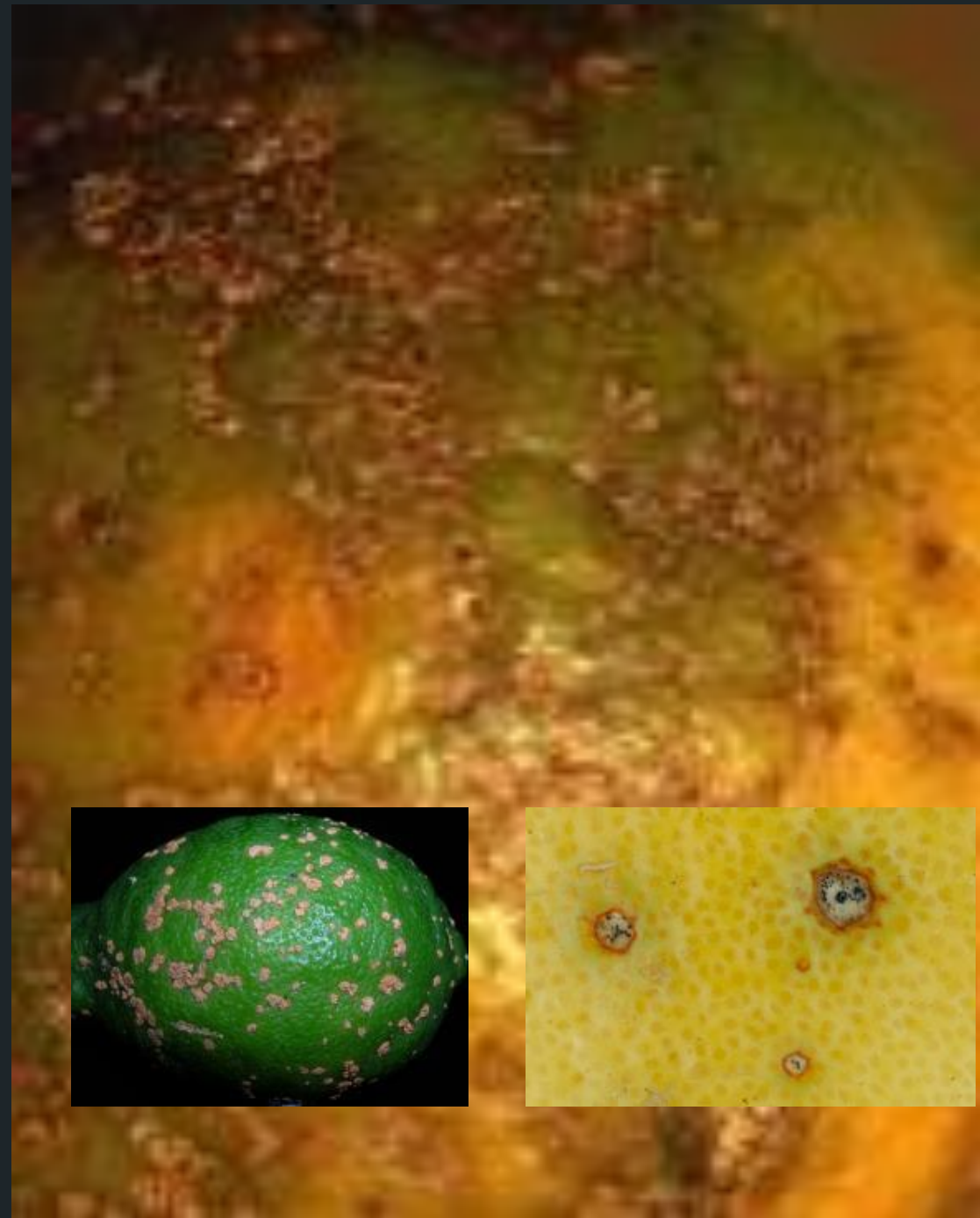
Original thinking... applied

Regulated Citrus diseases

Citrus black spot *Phyllosticta citricarpa* (fungus)

Citrus scab *Elsinoë fawcettii* and *Elsinoë australis* (fungi)

Citrus canker *Xanthomonas axonopodis* pv. *citri* (bacteria)



“*Guignardia*” *citricarpa* (Citrus Black Spot)

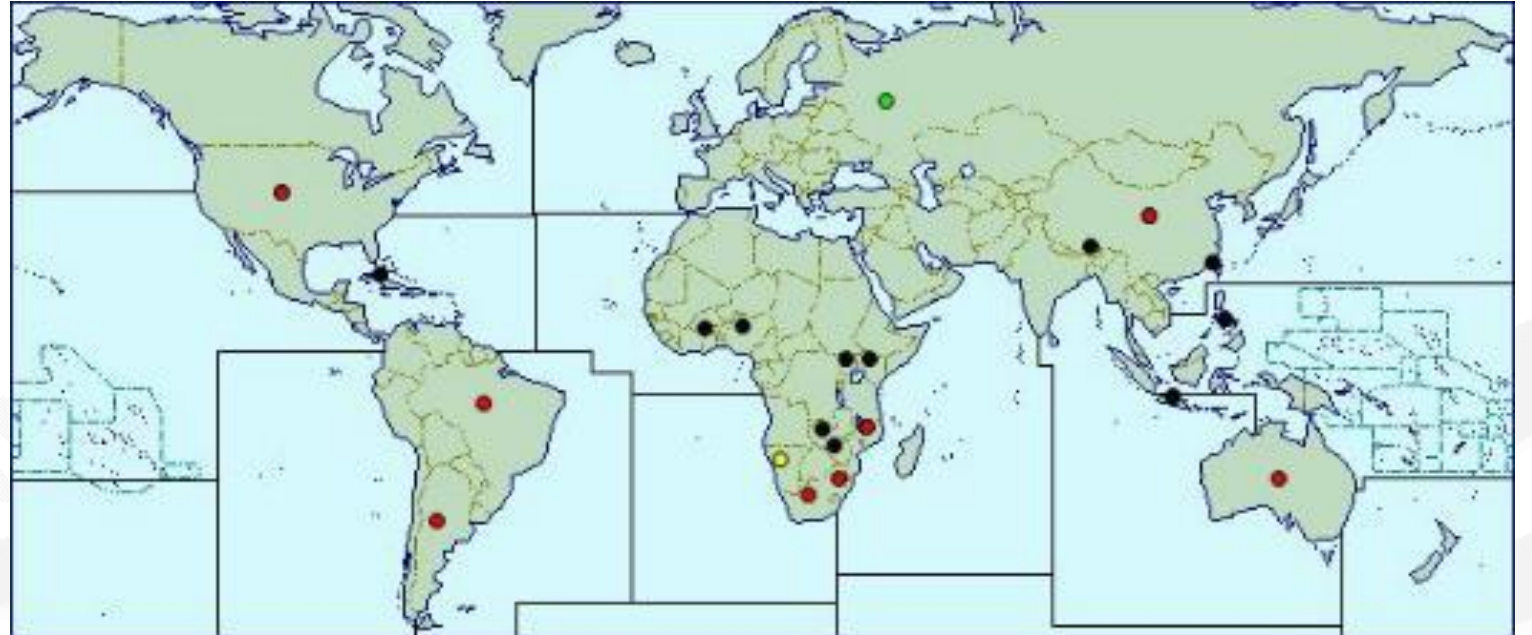
Preferred name is *Phyllosticta citricarpa*

EU Quarantine fungal pathogen

Wide distribution around tropical and sub-tropical areas

Primarily a disease of the fruit, the unsightly blemishes render the fruit unmarketable

Takes its name from the black pycnidia that form in the centre of mature spots



Citrus black spot symptoms

Range of symptoms from early indentations to dark spots with pycnidia (dark fungal structures that are visible using a hand lens).

Sometimes has green halos on lemons.

Looking for sunken spots with greyish centre, with or without pycnidia, but always have brick red margins.

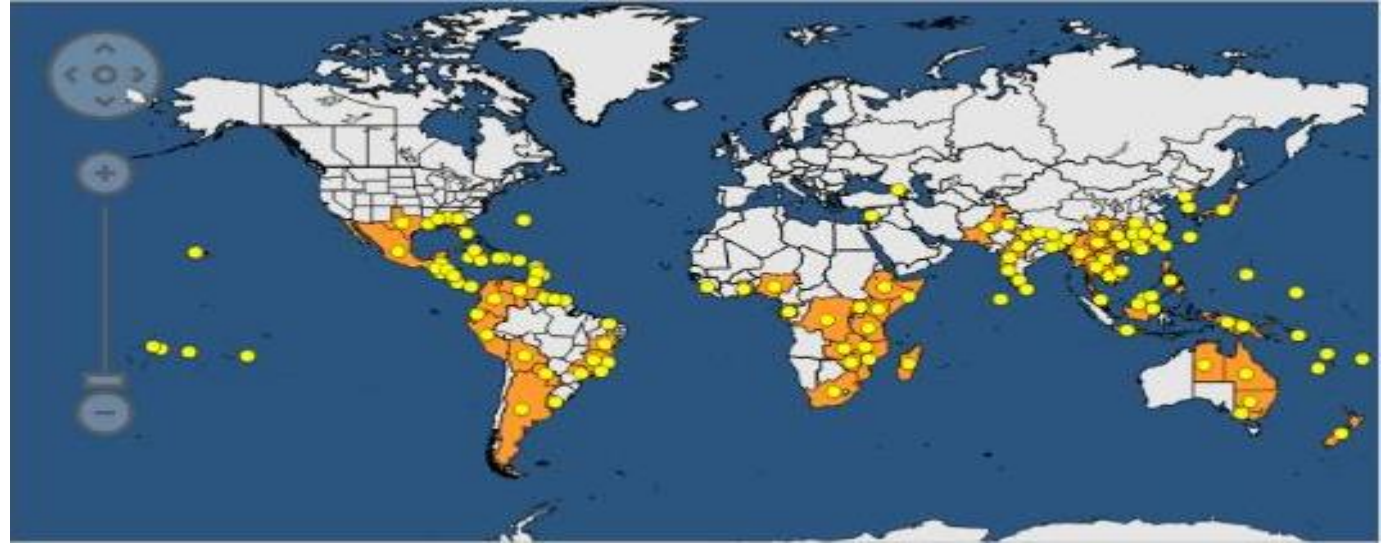


Elsinoë fawcettii & *Elsinoë australis* (Citrus Scab)

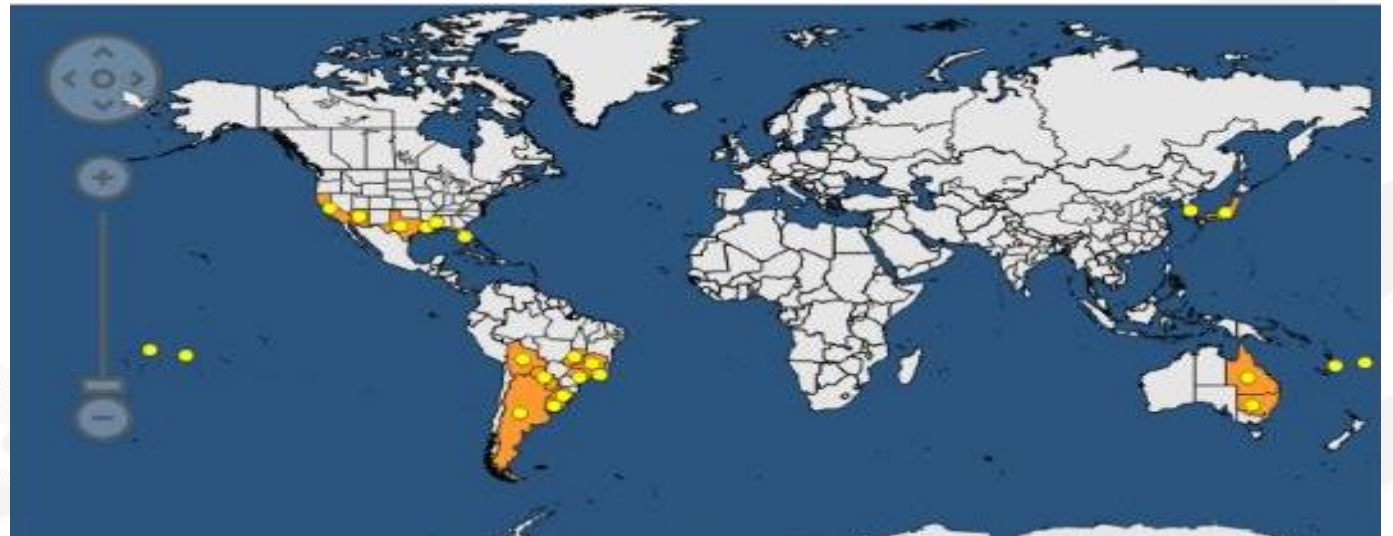
EU regulated fungal pathogens

Elsinoë spp. are only actionable from South from South America and only on *Citrus sinensis* and *C. reticulata*

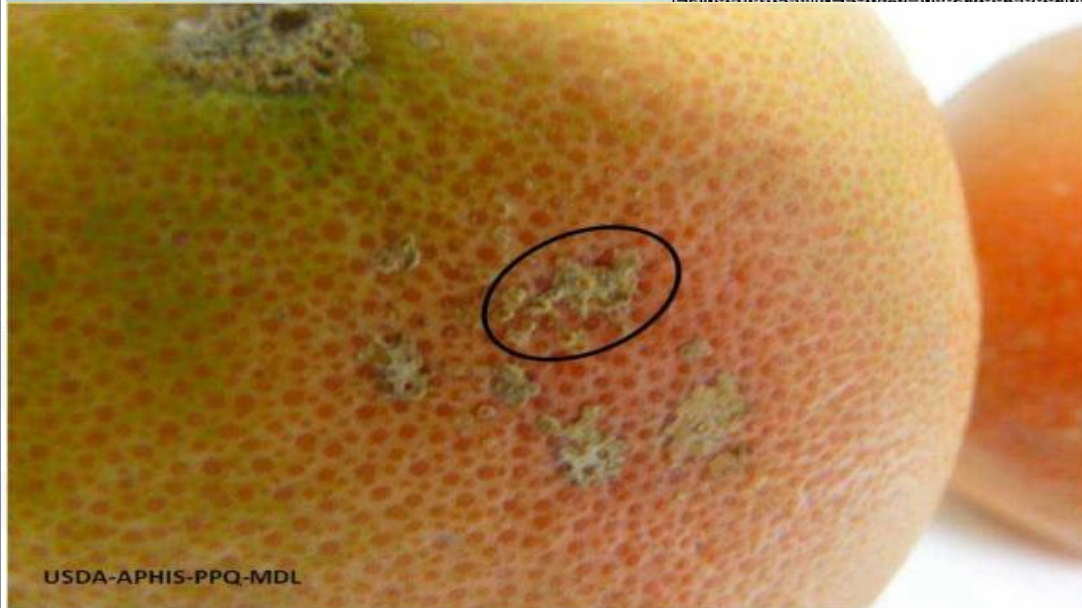
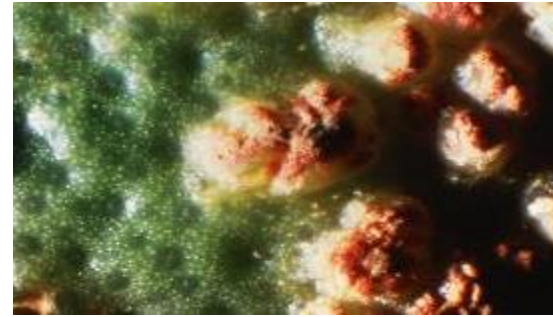
E. fawcettii is more widely distributed than *E.*



Distribution of *E. fawcettii* (above) and *E. australis* (below)



Citrus scab symptoms



Top left and centre:
Warty irregular scabs
caused by *E. fawcettii*.
The image in the centre
shows the scab close up.
Top right: Disease can
just be on one side of
the fruit – can look like
scorch, wind scarring or
mechanical damage
Bottom left: This could
also be *Citrus canker*



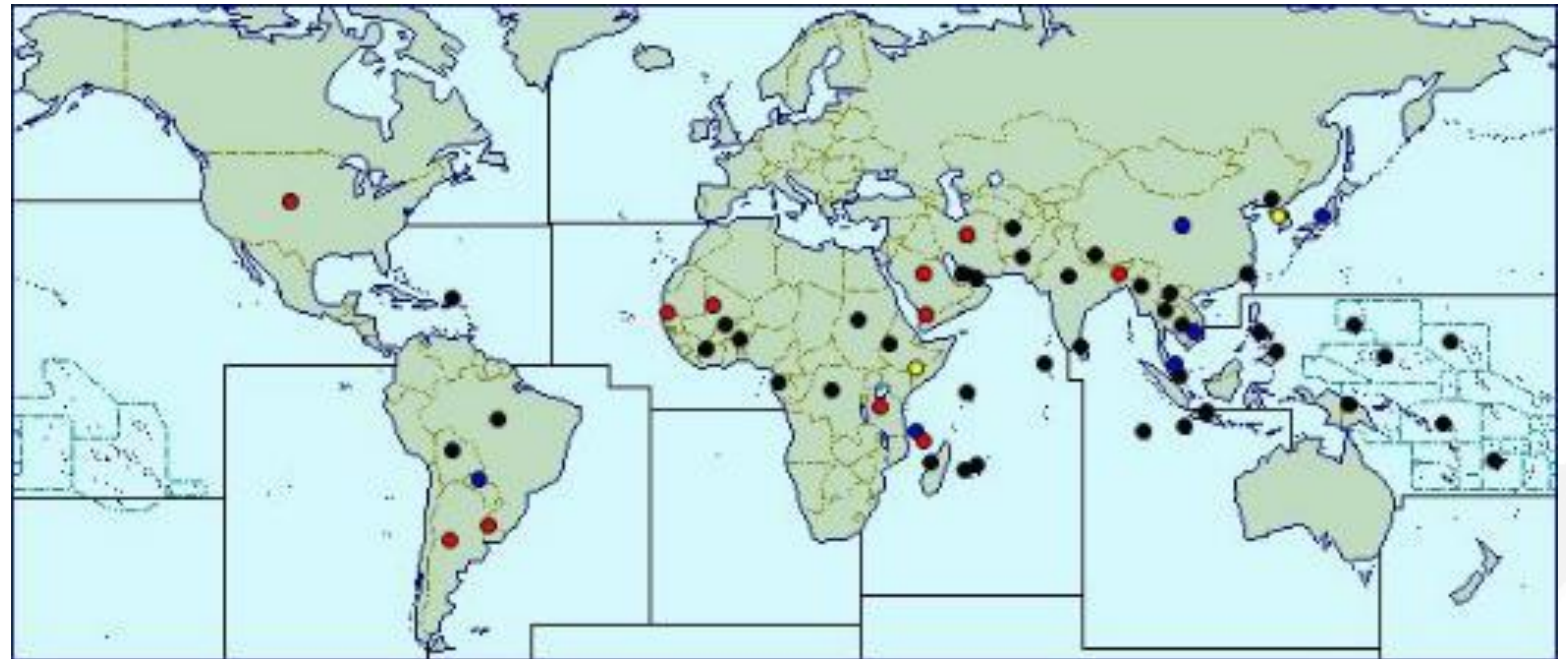
Xanthomonas axonopodis pv. *citri* (Citrus canker)

EU Regulated bacterial pathogen

Distribution is wide-spread throughout Asia, South America, Africa and Oceania

Potential to infect all *Citrus* species with varying degrees of susceptibility

Causes raised, corky/spongy looking cankers on fruit which can be easily confused with *Elsinoë* (Citrus scab) or physical damage.



Citrus canker symptoms

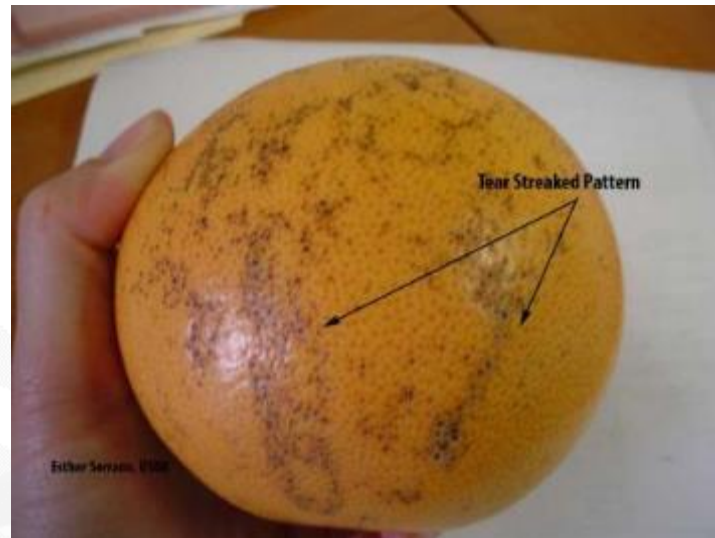
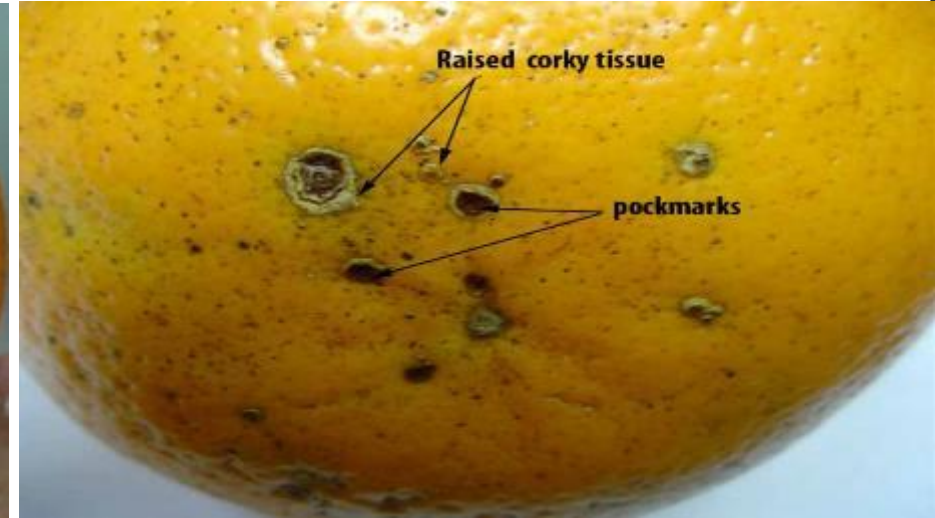


What can these diseases be confused with?

Top left: Physiological – associated with high humidity around time of harvest. Oil gland ruptures and damage the skin.

Top right: *Alternaria alternata* (fungus)

Bottom left and right: Melanose caused by *Diaporthe citri* (fungus) (fungus)





Original thinking... applied

Regulated viruses on *Capsicum*

In recent years we've seen an increase in consignments of *Capsicum* showing a range of potential virus symptoms.

When tested we've found a proportion of samples to contain regulated viruses.

The majority of findings on imported chillies and peppers have been of non-European isolates of Potato virus Y from Africa, but we've also found chilli vein mottle virus on chilli samples from China and Pakistan.

Infected consignments have been destroyed.



Viruses on Capsicum – peppers and chillies

A range of symptoms, including mottling, discolouration and distortion of fruits can occur but are not diagnostic of a particular virus.

Be on the look out for any of these symptoms and be aware that they could well be caused by a regulated virus.

