

Viroids

Genus: Pospiviroid

Crops affected: Capsicum, Eggplant, Tomato

What are they?

Pospiviroidae are a family of viroids and are the smallest known plant pathogens. The first viroid to be discovered was Potato spindle tuber viroid (PSTVd, see Exotic Pest Fact Sheet 8 for information on PSTVd). This fact sheet covers Pepper chat fruit viroid (PCFVd), Tomato apical stunt viroid (TASVd), Tomato chlorotic dwarf viroid (TCDVd), Tomato planta macho viroid (TPMVd), Columnea latent viroid (CLVd), Citrus exocortis viroid (CEVd) and others.

What should I look for?

Symptoms include stunting and shortening of internodes (Fig 1, 2 & 3). Other symptoms include leaf discolouration, distortion, necrotic or chlorotic lesion on plants or leaves, yellowing of leaves and epinasty (bending outwards and downwards). Fruit may not form or are reduced in size (Fig 4) and remain discoloured.

How are they transmitted?

Viroids are transmitted in a variety of ways. For example, TASVd can be transmitted via seed, mechanically, and by bumblebees from infected to healthy plants during pollination. TPMVd is transmitted mechanically and by aphids but has not been shown to be transmitted by seed. Viroids are thought to be present in wild plants and ornamentals (but do not show symptoms) and may transfer to crops.

Why are they important?

Although there is little specific information available on the economic impact of viroids, it can be assumed production volumes and quality will be affected due to the effect they have on foliage and fruit development.

Where are they present?

As a group, Pospiviroids have been found in virtually all major regions throughout the world although not all are present in every region, for example, PSTVd and CEVd are widespread across most continents while other viroids such as PCFVd, TCDVd and CLVd are reported to occur in a few countries.

How can I protect my industry?

Check your production site frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common pests of your industry so you can recognise something different.



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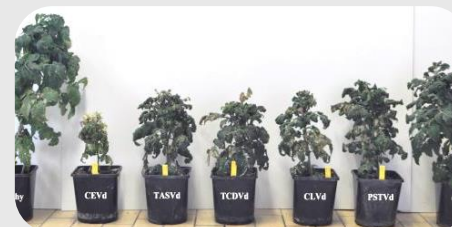


Fig 1. Viroid symptoms on tomato plants. Photo credit: © 2017 cra.wallonie.be all rights reserved



Fig 3. PCFVd symptoms on glasshouse capsicum. Photo credit: NPPO Netherlands

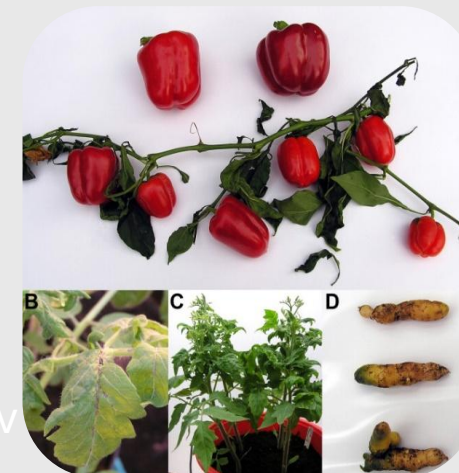


Fig 2. PCFVd symptoms on a range of plants including tomato plants. Photo credit: © Elsevier (Verhoeven, 2009)



Fig 4. PCFVd symptoms on capsicum. Photo credit: NPPO Netherlands