

## Tomato Ringspot Virus (ToRSV)



**Oregon**  
Department  
of Agriculture

### Nepovirus

#### Synonyms

- blackberry Himalaya mosaic virus
- euonymus ringspot virus
- grape yellow vein virus
- grapevine yellow vein virus
- peach yellow bud mosaic virus
- prune brown line virus
- prunus stem-pitting virus
- red currant mosaic virus
- tobacco ringspot virus 2
- winter peach mosaic virus

#### Plant hosts

- Major hosts: *Fragaria chiloensis* (Chilean strawberry), *Malus domestica* (apple), *Nicotiana tabacum* (tobacco), *Pelargonium* (pelargoniums), *Prunus* (stone fruit), *Prunus armeniaca* (apricot), *Prunus avium* (sweet cherry), *Prunus cerasus* (sour cherry), *Prunus domestica* (plum), *Prunus persica* (peach), *Ribes* (currants), *Rubus* (blackberry, raspberry), *Rubus idaeus* (raspberry), *Vitis* (grape), *Vitis vinifera* (grapevine)
- Minor hosts: *Capsicum* (peppers), *Cornus* (Dogwood), *Gladiolus* hybrids (sword lily), *Hydrangea* (hydrangeas), *Lotus corniculatus* (bird's-foot trefoil), *Lycopersicon esculentum* (tomato), *Orchidaceae* (orchids), *Rubus procerus*, *Sambucus* (Elderberry), *Vaccinium corymbosum* (blueberry)
- Wild hosts: *Taraxacum officinale* complex (dandelion)
- Hosts where status is unknown: *Cucumis sativus* (cucumber), *Daphne mezereum* (mezereon), *Fraxinus americana* (white ash), *Lilium* (lily)

#### Symptoms

Tomato ringspot virus in *Prunus* spp. (peach, nectarine, sweet cherry, almond and plum) causes a range of fruit, bud, leaf, and stem symptoms. The first symptoms on newly infected peach or nectarine trees is the development of yellow blotches or spots on the leaf blades. These are irregular in outline, feather-edged and usually follow the main veins. The blotches commonly occur towards the base of the leaf and predominantly on one side of the midrib. Blotching is accompanied by leaf distortion, which takes the form of pinching, puckering, corkscrewing and lateral bending of the leaf blade towards the chlorotic areas. The chlorotic areas frequently die, resulting in holes and tattering. In chronically infected trees, the yellow bud-mosaic symptoms are most clearly expressed in the spring as the new leaves expand. Growth of some buds is severely retarded, producing tufts of pale yellow leaves. These tufts often turn brown and die, causing the affected buds to stand out in sharp contrast to normal-appearing leaves associated with other buds on the same branch or in other parts of the tree. With the death of the tufts, affected shoots have relatively sparse foliage, giving diseased trees an open, thin appearance. The virus moves slowly upwards so that, after several years, fruit is produced only at the branch extremities. Symptoms may vary depending on the age of the tree or the duration of the infection and on climate changes from year to year (Smith and Traylor, 1969; Smith et al., 1973; Schlocker and Traylor 1976).



Leaf showing symptoms of tomato ringspot virus.

### **Transmission**

The virus is transmitted by the nematode vector, *Xiphinema americanum sensulato* (Dorylaimidae), by mechanical inoculation, by grafting, by seeds, by pollen to the seeds, and by pollen to the pollinated plant.

### **Geographic distribution**

The virus had been found in North America, Australia, Bulgaria, Canada, Chile, China, Cyprus, Germany, Italy, Japan, Korean Republic, New Zealand, Peru, Puerto Rico, Turkey, the USA, the former USSR, and the former Yugoslavia.

### **Applicable regulations**

Tomato ringspot virus is a pathogen of concern to Oregon's interstate and international customers. The Commodity Inspection Division [tests](#) for this virus. Please visit [OAR 603-051-0855 through -0859](#) for more information.