



Ornamental solanums (left to right): *Solanum crispum*, *S. laxum* 'Coldham', *S. atropurpureum*, *S. laciniatum*.

How to send us your plant samples

To help with our research please send us your samples. Select several whole leaves from your chosen *Solanum* plant and put the fresh leaves in a slightly inflated sealed bag and post this to:

Anna Platoni
Plant Health
RHS Garden Wisley
Woking
Surrey GU23 6QB

Please include the **name of the plant** the sample was taken from (Latin name, common name and / or cultivar), the **postcode** for where the plant is growing as well as **date of planting** and **place of purchase** if known. Please also provide your **name and email** or **postal address**.

Further information

For more information on this project search for **survey of viruses affecting Solanum species in UK gardens** at rhs.org.uk

For general information about plant viruses search on **plant viruses** or **tomato viruses** at rhs.org.uk

About me

My name is Anna Platoni and I am a Plant Health Scientist in the laboratories at RHS Wisley. I am fascinated by gardens as an ecosystem and am especially interested in plant pests and diseases as well as ways to encourage garden wildlife. I am excited to be working on this project to survey viruses in UK gardens and am looking forward to receiving all your samples!



What viruses affect plants in UK gardens?



Sharing the best in Gardening

Help RHS scientists survey viruses of *Solanum* plants in UK gardens by sending us samples

Photos, cover: RHS / Tim Sandall (potato flower). Back cover (clockwise): RHS / Carol Sheppard, RHS / Tim Sandall, RHS / Neil Hepworth, RHS / Graham Titchmarsh, RHS / Anna McCarthy. Inside: RHS / Tim Sandall (tomato seedlings and tomatoes); © Edward Sikora, Auburn University, Bugwood.org (CMV on tomato); © Gerald Holmes, California Polytechnic State University, Bugwood.org (TSWV on potato); © Dr S. Sabaratnam, British Columbia Ministry of Agriculture (PepMV on tomato); © Eugene E. Nelson, Bugwood.org (PLRV on potato). All © RHS unless otherwise stated.

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Cucumber mosaic virus on tomato.



Tomato spotted wilt virus on potato.

The RHS Plant Health *Solanum* virus survey

The genus *Solanum* contains many popular garden plants, including potato, tomato and aubergine as well as ornamentals such as the potato tree, *S. crispum*. There has been much research into viruses that affect crop plants, but very little into ornamental *Solanum*.



Pepino mosaic virus on tomato.



Potato leafroll virus on potato.

Plant viruses

Plant viruses are minute parasitic organisms which infect plant cells, altering their chemistry and causing a wide range of symptoms including discoloration, distortion and loss of vigour and yield. Most plant viruses are transmitted by a vector that feeds on the plant or they are introduced during cultural operations (e.g. grafting, pruning). The most common vectors of plant viruses are insects (in particular aphids, leafhoppers, thrips and whiteflies), mites and nematodes. A smaller number are transmitted by seed or pollen.

Plants in the genus *Solanum* are affected by a wide range of virus and virus-like diseases. Some of these, such as *Cucumber mosaic virus*, are established in the UK but there are also many that are not here which may cause damage should they arrive.

Little is known about the viruses that occur in solanaceous plants grown in UK gardens. There have been many studies on the viruses that can affect crops (aubergine, potato and tomato) in commercial production but no surveys have ever been undertaken in gardens. There has also been very little research into viruses that affect ornamental *Solanum*.

It is possible that ornamental solanaceous plants may carry symptomless viruses that could cause disease in aubergine, potatoes and tomatoes.

What can you do?

- Send in samples of leaf material from ornamental species of *Solanum*, for example *S. crispum* and *S. laxum* (previously known as *S. jasminoides*), whether or not they look like they are virus-infected. This is because some viruses that affect these plants can be symptomless in ornamentals.



- Send in samples of leaves from tomato, aubergine and potato if they have virus symptoms.

See overleaf for details of how to send samples.

What will happen to the samples?

When we receive samples of your plants we will extract genetic material and look for evidence of viruses such as *Cucumber mosaic virus*. Other tests may be done to investigate the evolutionary relationship between the viruses found in garden hosts and those from crop hosts.

We will let you know if your plant tests positive for viruses and will post a report online so gardeners can see the overall results.

What are the benefits for gardeners?

The RHS will be able to improve the advice that we give to gardeners about plant viruses including improving the capability of our diagnostic service. We will be able to gauge the potential for diseases to move between crop and ornamental plants and contribute to protecting plants from viruses that are not currently established in the UK.