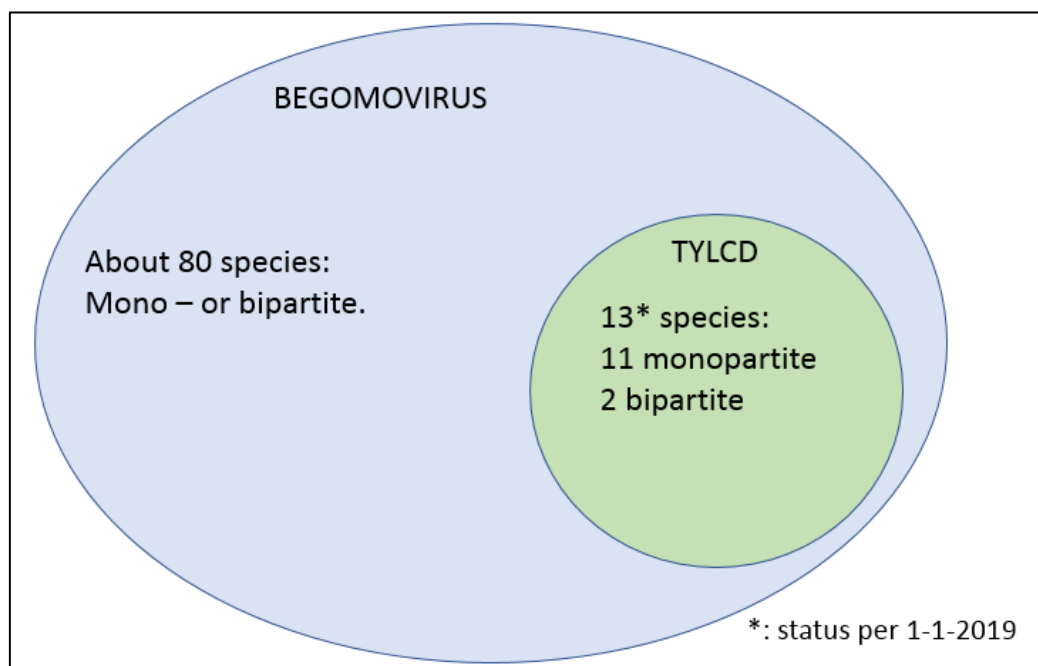


Explanatory notes

Tomato yellow leaf curl virus (TYLCV) and tomato yellow leaf curl disease (TYLCD)-associated viruses

The genus begomovirus, family Geminiviridae, consists of many virus species of which symptoms of leaf malformation are (often) very similar. Within this genus a group of viruses showing symptoms of leaf yellowing, curling and malformation in tomato have historically often been referred to as *Tomato yellow leaf curl virus* (TYLCV). Scientific research since 2006 has learned that different virus species, belonging to the genus Begomovirus, family Geminiviridae, can cause this type of symptoms. These species are referred to as Tomato yellow leaf curl disease (TYLCD). TYLCV is one of the virus species that can cause TYLCD.



Codes for TYLCD-associated species

There are at least 13 different Begomovirus species reported, associated with TYLCD. The International Committee on Taxonomy of Viruses (ICTV) is the standard reference for virus taxonomy. In the ICTV Master species list of 2018 (<https://talk.ictvonline.org/files/master-species-lists/m/msl/7992>) the following virus species are recognized as TYLCD-associated Begomovirus species, all of them monopartite except where indicated:

| |
|---|
| <i>Tomato yellow leaf curl Axarquia virus</i> (TYLCAxV) |
| <i>Tomato yellow leaf curl China virus</i> (TYLCCNV) |
| <i>Tomato yellow leaf curl Guangdong virus</i> (TYLCGuV) |
| <i>Tomato yellow leaf curl Indonesia virus</i> (TYLCIDV) |
| <i>Tomato yellow leaf curl Kanchanaburi virus</i> (TYLCKaV) (bipartite) |
| <i>Tomato yellow leaf curl Malaga virus</i> (TYLCMaV) |
| <i>Tomato yellow leaf curl Mali virus</i> (TYLCMLV) |
| <i>Tomato yellow leaf curl Sardinia virus</i> (TYLCSV) |
| <i>Tomato yellow leaf curl Shuangbai virus</i> (TYLCSHV) |
| <i>Tomato yellow leaf curl Thailand virus</i> (TYLCTHV) (bipartite) |
| <i>Tomato yellow leaf curl Vietnam virus</i> (TYLCVNV) |
| <i>Tomato yellow leaf curl virus</i> (TYLCV) |
| <i>Tomato yellow leaf curl Yunnan virus</i> (TYLCYnV) |

Note: different strains with specific characteristics (e.g. severity of symptom expression) exists for some of the species.

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