

**Part 1:** **TITLE, AUTHORS, APPROVALS, etc**

|  |  |  |
| --- | --- | --- |
| **Code assigned:** | **2023.015P** |  |
| **Short title:** Rename 520 species (*Geplafuvirales*: *Geminiviridae*) | | |
|  | | |

**Author(s) and email address(es)**

|  |  |
| --- | --- |
| Roumagnac, Philippe  Ascencio-Ibanez, Jose  Lett, Jean-Michel  López-Lambertini, Paola M.  Martin, Darren P.  Navas-Castillo, Jesús  Ribeiro, Simone  Urbino, Cica  Varsani, Arvind  Zerbini, F. Murilo | philippe.roumagnac@cirad.fr  jtascenc@ncsu.edu  lett@cirad.fr  plopezlambertini@gmail.com  darrenpatrickmartin@gmail.com  jnavas@eelm.csic.es  simone.ribeiro@embrapa.br  cica.urbino@cirad.fr  Arvind.varsani@asu.edu  [zerbini@ufv.br](mailto:zerbini@ufv.br) |

**Author(s) institutional address(es) (optional)**

|  |
| --- |
| CIRAD, UMR PHIM, Montpellier, France [PR and CU]  North Carolina State University, Raleigh, USA [JAI]  CIRAD, UMR PVBMT, Saint Pierre de la Réunion, France [JML]  INTA-CIAP-IPAVE, Universidad Nacional de Córdoba, Córdoba, Argentina [PMLL]  Institute of Infectious Disease and Molecular Medicine, University of Cape Town, Cape Town, South Africa [DPM]  Instituto de Hortofruticultura Subtropical y Mediterránea “La Mayora” (IHSM-UMA-CSIC), Málaga, Spain [JNC]  Embrapa Recursos Genéticos e Biotecnologia, Brasília, Brazil [SR].  The Biodesign Center for Fundamental and Applied Microbiomics, Center for Evolution and Medicine, School of Life Sciences, Arizona State University, Tempe,  Arizona, USA [AV]  Universidade Federal de Viçosa, Viçosa, Brasil [FMZ] |

**Corresponding author**

|  |
| --- |
| Roumagnac, Philippe (philippe.roumagnac@cirad.fr) |

**List the ICTV Study Group(s) that have seen this proposal**

|  |
| --- |
| *Geminiviridae* and *Tolecusatellitidae* Study Group |

**ICTV Study Group comments and response of proposer**

|  |
| --- |
| Approved by the *Geminiviridae* and *Tolecusatellitidae* Study Group |

**ICTV Study Group votes on proposal**

|  |  |  |  |
| --- | --- | --- | --- |
| **Study Group** | **Number of members** | | |
| **Votes support** | **Votes against** | **No vote** |
| Roumagnac, Philippe  Ascencio-Ibanez, Jose  Lett, Jean-Michel  López-Lambertini, Paola M.  Martin, Darren  Navas-Castillo, Jesús  Ribeiro, Simone  Urbino, Cica  Varsani, Arvind  Zerbini, F. Murilo | Y  Y  Y  Y  Y  Y  Y  Y  Y  Y |  |  |
|  |  |  |  |

**Authority to use the name of a living person**

|  |  |
| --- | --- |
| **Is any taxon name used here derived from that of a living person (Y/N)** | Y |

|  |  |  |
| --- | --- | --- |
| **Taxon name** | **Person from whom the name is derived** | **Permission attached (Y/N)** |
| *Begomovirus stanleyi* | John Stanley | Y |
|  |  |  |
|  |  |  |

**Submission dates**

|  |  |
| --- | --- |
| Date first submitted to SC Chair | June 23th 2023 |
| Date of this revision (if different to above) |  |

**ICTV-EC comments and response of the proposer**

|  |
| --- |
|  |

**Part 2:** **NON-TAXONOMIC PROPOSAL**

**Text of proposal**

|  |
| --- |
|  |

**Part 3:** **TAXONOMIC PROPOSAL**

**Name of accompanying Excel module**

|  |
| --- |
| 2023.015P.N.v1.Geminiviridae\_rename\_sp.xlsx |

**Abstract**

|  |
| --- |
| The family *Geminiviridae* has fourteen genera and 520 species assigned to these genera. We propose to convert the names of the established species to the “Genus + freeform epithet” binomial system. |

**Text of proposal**

|  |  |
| --- | --- |
| |  | | --- | | The family *Geminiviridae* includes plant-infecting viruses with mono- or bipartite circular single-stranded DNA genomes of 2.5–5.2 kb [1]. Geminiviruses have a unique particle morphology of twinned (geminate) icosahedra [1]. Fourteen genera within the family *Geminiviridae* have so far been established [2], including:  *Becurtovirus* (3 species)  *Begomovirus* (445 species)  *Capulavirus* (4 species)  *Citlodavirus* (4 species)  *Curtovirus* (3 species)  *Eragrovirus* (1 species)  *Grablovirus* (3 species)  *Maldovirus* (3 species)  *Mastrevirus* (45 species)  *Mulcrilevirus* (2 species)  *Opunvirus* (1 species)  *Topilevirus* (2 species)  *Topocuvirus* (1 species)  *Turncurtovirus* (3 species)  Here we first propose to change the names of the currently established species adopting the binomial system using a “Genus + freeform epithet”. We have summarized the changes we propose to the names in Table 1. | |

**Supporting evidence**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Genus** | **Proposed species name** | **Current species name** | **Virus name** | Accession # |
| *Becurtovirus* | *Becurtovirus betae* | *Beet curly top Iran virus* | beet curly top Iran virus | NC\_010417 |
|  | *Becurtovirus exomis* | *Exomis microphylla latent virus* | Exomis microphylla associated virus | NC\_037065 |
|  | *Becurtovirus spinaciae* | *Spinach curly top Arizona virus* | spinach curly top Arizona virus | NC\_015051 |
| *Begomovirus* | *Begomovirus abutilonis* | *Abutilon golden mosaic virus* | Abutilon golden mosaic virus | NC\_038438 |
|  | *Begomovirus jeskei* | *Abutilon mosaic Bolivia virus* | Abutilon mosaic Bolivia virus | DNA-A: NC\_015045; DNA-B: NC\_015048 |
|  | *Begomovirus abutilonbrazilense* | *Abutilon mosaic Brazil virus* | Abutilon mosaic Brazil virus | DNA-A: NC\_016574; DNA-B: NC\_016577 |
|  | *Begomovirus bauri* | *Abutilon mosaic virus* | Abutilon mosaic virus | DNA-A: NC\_001928; DNA-B: NC\_001929 |
|  | *Begomovirus manihotisburkinafasoense* | *African cassava mosaic Burkina Faso virus* | African cassava mosaic Burkina Faso virus | DNA-A: NC\_055128; DNA-B: NC\_055127 |
|  | *Begomovirus manihotis* | *African cassava mosaic virus* | African cassava mosaic virus | DNA-A: NC\_001467; DNA-B: NC\_001468 |
|  | *Begomovirus agerati* | *Ageratum enation virus* | Ageratum enation virus | NC\_003434 |
|  | *Begomovirus agerasichuanense* | *Ageratum leaf curl Sichuan virus* | Ageratum leaf curl Sichuan virus | NC\_055492 |
|  | *Begomovirus agerainvolutionis* | *Ageratum leaf curl virus* | Ageratum leaf curl virus | NC\_006384 |
|  | *Begomovirus agerahualianense* | *Ageratum yellow vein Hualian virus* | Ageratum yellow vein Hualian virus | NC\_038913 |
|  | *Begomovirus agerasrilankaense* | *Ageratum yellow vein Sri Lanka virus* | Ageratum yellow vein Sri Lanka virus | NC\_002981 |
|  | *Begomovirus ageravenae* | *Ageratum yellow vein virus* | Ageratum yellow vein virus | NC\_004090 |
|  | *Begomovirus allamandae* | *Allamanda leaf curl virus* | Allamanda leaf curl virus | NC\_010947 |
|  | *Begomovirus catharticae* | *Allamanda leaf mottle distortion virus* | Allamanda leaf mottle distortion virus | DNA-A: NC\_024009; DNA-B: NC\_040180 |
|  | *Begomovirus alternantherae* | *Alternanthera yellow vein virus* | Alternanthera yellow vein virus | NC\_007211 |
|  | *Begomovirus andrographis* | *Andrographis yellow vein leaf curl virus* | Andrographis yellow vein leaf curl virus | NC\_028262 |
|  | *Begomovirus asystasiae* | *Asystasia mosaic Madagascar virus* | Asystasia mosaic Madagascar virus | DNA-A: NC\_026514; DNA-B: NC\_026513 |
|  | *Begomovirus phaseoliretorridi* | *Bean bushy stunt virus* | bean bushy stunt virus | DNA-A: NC\_055594; DNA-B: NC\_060095 |
|  | *Begomovirus phaseolicaliconis* | *Bean calico mosaic virus* | bean calico mosaic virus | DNA-A: NC\_003504; DNA-B: NC\_003505 |
|  | *Begomovirus phaseolichlorosis* | *Bean chlorosis virus* | bean chlorosis virus | DNA-A: NC\_019569; DNA-B: NC\_019568 |
|  | *Begomovirus moralesi* | *Bean dwarf mosaic virus* | bean dwarf mosaic virus | DNA-A: NC\_001931; DNA-B: NC\_001930 |
|  | *Begomovirus costai* | *Bean golden mosaic virus* | bean golden mosaic virus | DNA-A: NC\_004042; DNA-B: NC\_004043 |
|  | *Begomovirus birdi* | *Bean golden yellow mosaic virus* | bean golden yellow mosaic virus | DNA-A: NC\_038791; DNA-B: NC\_038790 |
|  | *Begomovirus phaseolilatens* | *Bean latent virus* | bean latent virus | DNA-A: NC\_055589; DNA-B: NC\_060091 |
|  | *Begomovirus phaseoli* | *Bean leaf crumple virus* | bean leaf crumple virus | DNA-A: NC\_043524; DNA-B: NC\_060104 |
|  | *Begomovirus phaseolichlorosis* | *Bean white chlorosis mosaic virus* | bean white chlorosis mosaic virus | DNA-A: NC\_022005; DNA-B: NC\_022003 |
|  | *Begomovirus phaseolimexicoense* | *Bean yellow mosaic Mexico virus* | bean yellow mosaic Mexico virus | NC\_015487 |
|  | *Begomovirus abelmoschusbhubhaneswarense* | *Bhendi yellow vein Bhubhaneswar virus* | bhendi yellow vein Bhubhaneswar virus | NC\_012041 |
|  | *Begomovirus abelmoschusharyanaense* | *Bhendi yellow vein Haryana virus* | bhendi yellow vein Haryana virus | NC\_043513 |
|  | *Begomovirus abelmoschusdelhiense* | *Bhendi yellow vein mosaic Delhi virus* | bhendi yellow vein mosaic Delhi virus | NC\_011919 |
|  | *Begomovirus abelmoschusflavi* | *Bhendi yellow vein mosaic virus* | bhendi yellow vein mosaic virus | NC\_003418 |
|  | *Begomovirus momordicae* | *Bitter gourd yellow mosaic virus* | bitter gourd yellow mosaic virus | DNA-A: NC\_055540; DNA-B: NC\_055539 |
|  | *Begomovirus blainvilleae* | *Blainvillea yellow spot virus* | Blainvillea yellow spot virus | DNA-A: NC\_010837; DNA-B: NC\_010838 |
|  | *Begomovirus blechi* | *Blechum interveinal chlorosis virus* | Blechum interveinal chlorosis virus | DNA-A: NC\_019035; DNA-B: NC\_019036 |
|  | *Begomovirus blechumflavi* | *Blechum yellow vein virus* | Blechum yellow vein virus | NC\_055132 |
|  | *Begomovirus boerhaviae* | *Boerhavia yellow spot virus* | Boerhavia yellow spot virus | NC\_038439 |
|  | *Begomovirus brassicajamaicaense* | *Cabbage leaf curl Jamaica virus* | cabbage leaf curl Jamaica virus | DNA-A: NC\_038792; DNA-B: NC\_038793 |
|  | *Begomovirus brassicae* | *Cabbage leaf curl virus* | cabbage leaf curl virus | DNA-A: NC\_003866; DNA-B: NC\_003887 |
|  | *Begomovirus caprariae* | *Capraria yellow spot virus* | Capraria yellow spot virus | DNA-A: NC\_022007; DNA-B: NC\_022008 |
|  | *Begomovirus manihotismadagascarense* | *Cassava mosaic Madagascar virus* | cassava mosaic Madagascar virus | DNA-A: NC\_017004; DNA-B: NC\_017005 |
|  | *Begomovirus catharanthi* | *Catharanthus yellow mosaic virus* | Catharanthus yellow mosaic virus | NC\_025964 |
|  | *Begomovirus centrosemae* | *Centrosema yellow spot virus* | Centrosema yellow spot virus | NC\_016998 |
|  | *Begomovirus chayotis* | *Chayote yellow mosaic virus* | chayote yellow mosaic virus | NC\_004618 |
|  | *Begomovirus chenopodii* | *Chenopodium leaf curl virus* | Chenopodium leaf curl virus | NC\_038440 |
|  | *Begomovirus capsiahmedabadense* | *Chilli leaf curl Ahmedabad virus* | chilli leaf curl Ahmedabad virus | NC\_028046 |
|  | *Begomovirus capsibhavanisagarense* | *Chilli leaf curl Bhavanisagar virus* | chilli leaf curl Bhavanisagar virus | NC\_055130 |
|  | *Begomovirus capsigondaense* | *Chilli leaf curl Gonda virus* | chilli leaf curl Gonda virus | NC\_055136 |
|  | *Begomovirus capsindiaense* | *Chilli leaf curl India virus* | chilli leaf curl India virus | NC\_038875 |
|  | *Begomovirus capsikanpurense* | *Chilli leaf curl Kanpur virus* | chilli leaf curl Kanpur virus | NC\_038441 |
|  | *Begomovirus capsisrilankaense* | *Chilli leaf curl Sri Lanka virus* | chilli leaf curl Sri Lanka virus | NC\_055131 |
|  | *Begomovirus capsivellanadense* | *Chilli leaf curl Vellanad virus* | chilli leaf curl Vellanad virus | NC\_038442 |
|  | *Begomovirus capsici* | *Chilli leaf curl virus* | chilli leaf curl virus | NC\_004628 |
|  | *Begomovirus solanumamazonasense* | *Chino del tomate Amazonas virus* | chino del tomate Amazonas virus | NC\_038443 |
|  | *Begomovirus solanumflavi* | *Chino del tomate virus* | chino del tomate virus | DNA-A: NC\_003830; DNA-B: NC\_003831 |
|  | *Begomovirus cleomaurei* | *Cleome golden mosaic virus* | Cleome golden mosaic virus | NC\_015397 |
|  | *Begomovirus cleomecrispi* | *Cleome leaf crumple virus* | Cleome leaf crumple virus | DNA-A: NC\_016578; DNA-B: NC\_016572 |
|  | *Begomovirus clerodendronis* | *Clerodendron golden mosaic virus* | Clerodendron golden mosaic virus | DNA-A: NC\_010713; DNA-B: NC\_010714 |
|  | *Begomovirus clerodendronflavi* | *Clerodendron yellow mosaic virus* | Clerodendron yellow mosaic virus | NC\_009451 |
|  | *Begomovirus clerodendrumchinaense* | *Clerodendrum golden mosaic China virus* | Clerodendrum golden mosaic China virus | DNA-A: NC\_011346; DNA-B: NC\_011347 |
|  | *Begomovirus clerodendrumjiangsuense* | *Clerodendrum golden mosaic Jiangsu virus* | Clerodendrum golden mosaic Jiangsu virus | NC\_038876 |
|  | *Begomovirus cnidoscoli* | *Cnidoscolus mosaic leaf deformation virus* | Cnidoscolus mosaic leaf deformation virus | DNA-A: NC\_038982; DNA-B: NC\_040184 |
|  | *Begomovirus cocciniae* | *Coccinia mosaic Tamil Nadu virus* | Coccinia mosaic Tamil Nadu virus | DNA-A: NC\_024810; DNA-B: NC\_024809 |
|  | *Begomovirus phaseovulgaris* | *Common bean mottle virus* | common bean mottle virus | DNA-A: NC\_038988; DNA-B: NC\_040189 |
|  | *Begomovirus vulgaris* | *Common bean severe mosaic virus* | common bean severe mosaic virus | DNA-A: NC\_031961; DNA-B: NC\_040190 |
|  | *Begomovirus corchori* | *Corchorus golden mosaic virus* | Corchorus golden mosaic virus | DNA-A: NC\_009644; DNA-B: NC\_009646 |
|  | *Begomovirus corchoflavi* | *Corchorus yellow spot virus* | Corchorus yellow spot virus | DNA-A: NC\_008492; DNA-B: NC\_008493 |
|  | *Begomovirus corchocubaense* | *Corchorus yellow vein Cuba virus* | Corchorus yellow vein Cuba virus | DNA-A: NC\_078184; DNA-B: NC\_078183 |
|  | *Begomovirus corchomusivi* | *Corchorus yellow vein mosaic virus* | Corchorus yellow vein mosaic virus | NC\_020473 |
|  | *Begomovirus corchovenae* | *Corchorus yellow vein virus* | Corchorus yellow vein virus | DNA-A: NC\_006358; DNA-B: NC\_006359 |
|  | *Begomovirus gossypimaculae* | *Cotton chlorotic spot virus* | cotton chlorotic spot virus | DNA-A: NC\_038794; DNA-B: NC\_038795 |
|  | *Begomovirus gossypii* | *Cotton leaf crumple virus* | cotton leaf crumple virus | DNA-A: NC\_004580; DNA-B: NC\_004581 |
|  | *Begomovirus gossypialabadense* | *Cotton leaf curl Alabad virus* | cotton leaf curl Alabad virus | NC\_004582 |
|  | *Begomovirus gossypibangalorense* | *Cotton leaf curl Bangalore virus* | cotton leaf curl Bangalore virus | NC\_007290 |
|  | *Begomovirus gossypibarasatense* | *Cotton leaf curl Barasat virus* | cotton leaf curl Barasat virus | NC\_039003 |
|  | *Begomovirus gossypigeziraense* | *Cotton leaf curl Gezira virus* | cotton leaf curl Gezira virus | NC\_038444 |
|  | *Begomovirus gossypikokranense* | *Cotton leaf curl Kokhran virus* | cotton leaf curl Kokhran virus | NC\_004583 |
|  | *Begomovirus gossypimultanense* | *Cotton leaf curl Multan virus* | cotton leaf curl Multan virus | NC\_011804 |
|  | *Begomovirus gossypiflavi* | *Cotton yellow mosaic virus* | cotton yellow mosaic virus | DNA-A: NC\_030310; DNA-B: NC\_030311 |
|  | *Begomovirus vignaflavi* | *Cowpea bright yellow mosaic virus* | cowpea bright yellow mosaic virus | DNA-A: NC\_055489; DNA-B: NC\_055490 |
|  | *Begomovirus vignamusivi* | *Cowpea golden mosaic virus* | cowpea golden mosaic virus | NC\_038445 |
|  | *Begomovirus crassocephali* | *Crassocephalum yellow vein virus* | Crassocephalum yellow vein virus | NC\_008794 |
|  | *Begomovirus crotomusivi* | *Croton golden mosaic virus* | Croton golden mosaic virus | DNA-A: NC\_055464; DNA-B: NC\_055463 |
|  | *Begomovirus crotoflavi* | *Croton yellow vein mosaic virus* | croton yellow vein mosaic virus | NC\_004300 |
|  | *Begomovirus cucumis* | *Cucumber chlorotic leaf virus* | cucumber chlorotic leaf virus | DNA-A: NC\_055582; DNA-B: NC\_060103 |
|  | *Begomovirus cucurbitae* | *Cucurbit leaf crumple virus* | cucurbit leaf crumple virus | DNA-A: NC\_002984; DNA-B: NC\_002985 |
|  | *Begomovirus dalechampiae* | *Dalechampia chlorotic mosaic virus* | Dalechampia chlorotic mosaic virus | DNA-A: NC\_018716; DNA-B: NC\_018718 |
|  | *Begomovirus daturae* | *Datura leaf curl virus* | Datura leaf curl virus | NC\_043531 |
|  | *Begomovirus daturadistortionis* | *Datura leaf distortion virus* | Datura leaf distortion virus | DNA-A: NC\_018717; DNA-B: NC\_018715 |
|  | *Begomovirus deinbolliae* | *Deinbollia mosaic virus* | Deinbollia mosaic virus | DNA-A: NC\_029804; DNA-B: NC\_029803 |
|  | *Begomovirus desmodistortionis* | *Desmodium leaf distortion virus* | Desmodium leaf distortion virus | DNA-A: NC\_008494; DNA-B: NC\_008495 |
|  | *Begomovirus desmodii* | *Desmodium mottle virus* | Desmodium mottle virus | DNA-A: NC\_039001; DNA-B: NC\_040192 |
|  | *Begomovirus diclipteracubaense* | *Dicliptera yellow mottle Cuba virus* | Dicliptera yellow mottle Cuba virus | NC\_075049 |
|  | *Begomovirus diclipterae* | *Dicliptera yellow mottle virus* | Dicliptera yellow mottle virus | DNA-A: NC\_003856; DNA-B: NC\_003857 |
|  | *Begomovirus dolichoris* | *Dolichos yellow mosaic virus* | Dolichos yellow mosaic virus | DNA-A: NC\_005338; DNA-B: NC\_024779 |
|  | *Begomovirus durantae* | *Duranta leaf curl virus* | Duranta leaf curl virus | NC\_038980 |
|  | *Begomovirus manihotiscameroonense* | *East African cassava mosaic Cameroon virus* | East African cassava mosaic Cameroon virus | DNA-A: NC\_004625; DNA-B: NC\_004630 |
|  | *Begomovirus manihotiskenyaense* | *East African cassava mosaic Kenya virus* | East African cassava mosaic Kenya virus | DNA-A: NC\_011583; DNA-B: NC\_011584 |
|  | *Begomovirus manihotismalawiense* | *East African cassava mosaic Malawi virus* | East African cassava mosaic Malawi virus | NC\_038877 |
|  | *Begomovirus manihotisafricaense* | *East African cassava mosaic virus* | East African cassava mosaic virus | DNA-A: NC\_004674; DNA-B: NC\_004676 |
|  | *Begomovirus manihotiszanzibarense* | *East African cassava mosaic Zanzibar virus* | East African cassava mosaic Zanzibar virus | DNA-A: NC\_004655; DNA-B: NC\_004656 |
|  | *Begomovirus ecliptae* | *Eclipta yellow vein virus* | Eclipta yellow vein virus | NC\_016660 |
|  | *Begomovirus emiliafujianense* | *Emilia yellow vein Fujian virus* | Emilia yellow vein Fujian virus | NC\_055511 |
|  | *Begomovirus emiliathailandense* | *Emilia yellow vein Thailand virus* | Emilia yellow vein Thailand virus | NC\_035473 |
|  | *Begomovirus emiliae* | *Emilia yellow vein virus* | Emilia yellow vein virus | NC\_010307 |
|  | *Begomovirus erectitesis* | *Erectites yellow mosaic virus* | Erectites yellow mosaic virus | NC\_009549 |
|  | *Begomovirus kokenae* | *Eupatorium yellow vein mosaic virus* | Eupatorium yellow vein mosaic virus | NC\_038879 |
|  | *Begomovirus eupatorii* | *Eupatorium yellow vein virus* | Eupatorium yellow vein virus | NC\_003556 |
|  | *Begomovirus euphorbiaguangxiense* | *Euphorbia leaf curl Guangxi virus* | Euphorbia leaf curl Guangxi virus | NC\_038881 |
|  | *Begomovirus euphorbiae* | *Euphorbia leaf curl virus* | Euphorbia leaf curl virus | NC\_005319 |
|  | *Begomovirus euphorbiaperuense* | *Euphorbia mosaic Peru virus* | Euphorbia mosaic Peru virus | NC\_039082 |
|  | *Begomovirus euphorbiamusivi* | *Euphorbia mosaic virus* | Euphorbia mosaic virus | DNA-A: NC\_008304; DNA-B: NC\_008305 |
|  | *Begomovirus euphorbiaflavi* | *Euphorbia yellow leaf curl virus* | Euphorbia yellow leaf curl virus | NC\_038976 |
|  | *Begomovirus euphorbiamusiviflavi* | *Euphorbia yellow mosaic virus* | Euphorbia yellow mosaic virus | DNA-A: NC\_012553; DNA-B: NC\_012554 |
|  | *Begomovirus phaseoligallici* | *French bean leaf curl virus* | French bean leaf curl virus | NC\_018090 |
|  | *Begomovirus hedyotis* | *Hedyotis uncinella yellow mosaic virus* | Hedyotis uncinella yellow mosaic virus | NC\_038448 |
|  | *Begomovirus hemidesmi* | *Hemidesmus yellow mosaic virus* | Hemidesmus yellow mosaic virus | NC\_022073 |
|  | *Begomovirus hibisci* | *Hibiscus golden mosaic virus* | Hibiscus golden mosaic virus | DNA-A: NC\_055521; DNA-B: NC\_055522 |
|  | *Begomovirus hibiscusvenae* | *Hibiscus yellow vein leaf curl virus* | Hibiscus yellow vein leaf curl virus | NC\_075419 |
|  | *Begomovirus alceae* | *Hollyhock leaf curl virus* | hollyhock leaf curl virus | NC\_038884 |
|  | *Begomovirus alceamusivi* | *Hollyhock yellow vein mosaic virus* | hollyhock yellow vein mosaic virus | NC\_075412 |
|  | *Begomovirus alceavenae* | *Hollyhock yellow vein virus* | hollyhock yellow vein virus | NC\_055499 |
|  | *Begomovirus loniceravenae* | *Honeysuckle yellow vein virus* | honeysuckle yellow vein virus | NC\_005807 |
|  | *Begomovirus macrotylomae* | *Horsegram yellow mosaic virus* | horsegram yellow mosaic virus | DNA-A: NC\_005635; DNA-B: NC\_005636 |
|  | *Begomovirus hybanthi* | *Hybanthus yellow mosaic virus* | Hybanthus yellow mosaic virus | DNA-A: NC\_055543; DNA-B: NC\_060098 |
|  | *Begomovirus manihotisindianense* | *Indian cassava mosaic virus* | Indian cassava mosaic virus | DNA-A: NC\_001932; DNA-B: NC\_001933 |
|  | *Begomovirus jacquemontiayucatanense* | *Jacquemontia mosaic Yucatan virus* | Jacquemontia mosaic Yucatan virus | DNA-A: NC\_038796; DNA-B: NC\_038797 |
|  | *Begomovirus jacquemontiamusivi* | *Jacquemontia yellow mosaic virus* | Jacquemontia yellow mosaic virus | DNA-A: NC\_038960; DNA-B: NC\_040181 |
|  | *Begomovirus jacquemontiavenae* | *Jacquemontia yellow vein virus* | Jacquemontia yellow vein virus | DNA-A: NC\_043526; DNA-B: NC\_050697 |
|  | *Begomovirus jatrophagujaratense* | *Jatropha leaf curl Gujarat virus* | Jatropha leaf curl Gujarat virus | NC\_038962 |
|  | *Begomovirus jatrophae* | *Jatropha leaf curl virus* | Jatropha leaf curl virus | NC\_011268 |
|  | *Begomovirus jatrophaflavi* | *Jatropha leaf yellow mosaic virus* | Jatropha leaf yellow mosaic virus | NC\_038956 |
|  | *Begomovirus jatrophaindiaense* | *Jatropha mosaic India virus* | Jatropha mosaic India virus | NC\_038449 |
|  | *Begomovirus jatrophanigeriaense* | *Jatropha mosaic Nigeria virus* | Jatropha mosaic Nigeria virus | NC\_019034 |
|  | *Begomovirus jatrophamusivi* | *Jatropha mosaic virus* | Jatropha mosaic virus | DNA-A: NC\_024012; DNA-B: NC\_024013 |
|  | *Begomovirus jatrophaflavamusivi* | *Jatropha yellow mosaic virus* | Jatropha yellow mosaic virus | NC\_011309 |
|  | *Begomovirus puerariae* | *Kudzu mosaic virus* | kudzu mosaic virus | DNA-A: NC\_009645; DNA-B: NC\_009647 |
|  | *Begomovirus leonuri* | *Leonurus mosaic virus* | Leonurus mosaic virus | NC\_038450 |
|  | *Begomovirus linderniae* | *Lindernia anagallis yellow vein virus* | Lindernia anagallis yellow vein virus | NC\_009550 |
|  | *Begomovirus lisianthi* | *Lisianthus enation leaf curl virus* | Lisianthus enation leaf curl virus | NC\_031466 |
|  | *Begomovirus ludwigiavietnamense* | *Ludwigia yellow vein Vietnam virus* | Ludwigia yellow vein Vietnam virus | NC\_038451 |
|  | *Begomovirus ludwigiae* | *Ludwigia yellow vein virus* | Ludwigia yellow vein virus | NC\_007210 |
|  | *Begomovirus luffae* | *Luffa yellow mosaic virus* | Luffa yellow mosaic virus | DNA-A: NC\_004824; DNA-B: NC\_004825 |
|  | *Begomovirus lycianthesis* | *Lycianthes yellow mosaic virus* | Lycianthes yellow mosaic virus | DNA-A: NC\_038978; DNA-B: NC\_040187 |
|  | *Begomovirus macroptilimusivi* | *Macroptilium bright mosaic virus* | Macroptilium bright mosaic virus | NC\_031452 |
|  | *Begomovirus macroptilicommunis* | *Macroptilium common mosaic virus* | Macroptilium common mosaic virus | DNA-A: NC\_031448; DNA-B: NC\_031453 |
|  | *Begomovirus macroptilaurei* | *Macroptilium golden mosaic virus* | Macroptilium golden mosaic virus | DNA-A: NC\_010952; DNA-B: NC\_010953 |
|  | *Begomovirus macroptilipuertoricoense* | *Macroptilium mosaic Puerto Rico virus* | Macroptilium mosaic Puerto Rico virus | DNA-A: NC\_004097; DNA-B: NC\_004098 |
|  | *Begomovirus macroptilifloridaense* | *Macroptilium yellow mosaic Florida virus* | Macroptilium yellow mosaic Florida virus | DNA-A: NC\_004099; DNA-B: NC\_004100 |
|  | *Begomovirus macroptilii* | *Macroptilium yellow mosaic virus* | Macroptilium yellow mosaic virus | DNA-A: NC\_010647; DNA-B: NC\_010648 |
|  | *Begomovirus macroptilimaculae* | *Macroptilium yellow spot virus* | Macroptilium yellow spot virus | NC\_016999 |
|  | *Begomovirus macroptilivenae* | *Macroptilium yellow vein virus* | Macroptilium yellow vein virus | NC\_017000 |
|  | *Begomovirus malvastrumflavi* | *Malvastrum bright yellow mosaic virus* | Malvastrum bright yellow mosaic virus | DNA-A: NC\_031458; DNA-B: NC\_031459 |
|  | *Begomovirus malvastrumphilippinesense* | *Malvastrum leaf curl Philippines virus* | Malvastrum leaf curl Philippines virus | NC\_021245 |
|  | *Begomovirus malvastri* | *Malvastrum leaf curl virus* | Malvastrum leaf curl virus | NC\_007724 |
|  | *Begomovirus malvastrumhelshirense* | *Malvastrum yellow mosaic Helshire virus* | Malvastrum yellow mosaic Helshire virus | NC\_038452 |
|  | *Begomovirus malvastrumjamaicaense* | *Malvastrum yellow mosaic Jamaica virus* | Malvastrum yellow mosaic Jamaica virus | DNA-A: NC\_038798; DNA-B: NC\_038799 |
|  | *Begomovirus malvastrummusivi* | *Malvastrum yellow mosaic virus* | Malvastrum yellow mosaic virus | NC\_008559 |
|  | *Begomovirus malvastrumcambodiaense* | *Malvastrum yellow vein Cambodia virus* | Malvastrum yellow vein Cambodia virus | NC\_026763 |
|  | *Begomovirus malvastrumhonghense* | *Malvastrum yellow vein Honghe virus* | Malvastrum yellow vein Honghe virus | NC\_030749 |
|  | *Begomovirus malvastrumlahorense* | *Malvastrum yellow vein Lahore virus* | Malvastrum yellow vein Lahore virus | NC\_055476 |
|  | *Begomovirus malvatrumvenae* | *Malvastrum yellow vein virus* | Malvastrum yellow vein virus | NC\_004634 |
|  | *Begomovirus malvastrumyunnanense* | *Malvastrum yellow vein Yunnan virus* | Malvastrum yellow vein Yunnan virus | NC\_006631 |
|  | *Begomovirus melochiae* | *Melochia mosaic virus* | Melochia mosaic virus | DNA-A: NC\_028140; DNA-B: NC\_028141 |
|  | *Begomovirus melochiaflavi* | *Melochia yellow mosaic virus* | Melochia yellow mosaic virus | DNA-A: NC\_028142; DNA-B: NC\_028143 |
|  | *Begomovirus cucumis* | *Melon chlorotic leaf curl virus* | melon chlorotic leaf curl virus | DNA-A: NC\_003865; DNA-B: NC\_003860 |
|  | *Begomovirus cucumismusivi* | *Melon chlorotic mosaic virus* | melon chlorotic mosaic virus | DNA-A: NC\_014380; DNA-B: NC\_014381 |
|  | *Begomovirus cucumisflavi* | *Melon yellow mosaic virus* | melon yellow mosaic virus | NC\_055525 |
|  | *Begomovirus merremiapuertoricoense* | *Merremia mosaic Puerto Rico virus* | Merremia mosaic Puerto Rico virus | DNA-A: NC\_015490; DNA-B: NC\_015491 |
|  | *Begomovirus merremiae* | *Merremia mosaic virus* | Merremia mosaic virus | DNA-A: NC\_007965; DNA-B: NC\_007966 |
|  | *Begomovirus mestae* | *Mesta yellow vein mosaic Bahraich virus* | Mesta yellow vein mosaic Bahraich virus | NC\_010818 |
|  | *Begomovirus mimosae* | *Mimosa yellow leaf curl virus* | Mimosa yellow leaf curl virus | NC\_009546 |
|  | *Begomovirus mirabilis* | *Mirabilis leaf curl virus* | Mirabilis leaf curl virus | NC\_024491 |
|  | *Begomovirus vignaradiataindiaense* | *Mungbean yellow mosaic India virus* | mungbean yellow mosaic India virus | DNA-A: NC\_004608; DNA-B: NC\_004609 |
|  | *Begomovirus vignaradiatae* | *Mungbean yellow mosaic virus* | mungbean yellow mosaic virus | DNA-A: NC\_001983; DNA-B: NC\_001984 |
|  | *Begomovirus ocimumaurei* | *Ocimum golden mosaic virus* | Ocimum golden mosaic virus | DNA-A: NC\_055591; DNA-B: NC\_060092 |
|  | *Begomovirus ocimummusivi* | *Ocimum mosaic virus* | Ocimum mosaic virus | DNA-A: NC\_055593; DNA-B: NC\_060094 |
|  | *Begomovirus ocimumvenae* | *Ocimum yellow vein virus* | Ocimum yellow vein virus | DNA-A: NC\_055592; DNA-B: NC\_060093 |
|  | *Begomovirus abelsmoschusenation* | *Okra enation leaf curl virus* | okra enation leaf curl virus | NC\_014894 |
|  | *Begomovirus abelsmoschusomanense* | *Okra leaf curl Oman virus* | okra leaf curl Oman virus | NC\_028985 |
|  | *Begomovirus abelsmoschusmaculae* | *Okra mottle virus* | okra mottle virus | DNA-A: NC\_011181; DNA-B: NC\_011182 |
|  | *Begomovirus abelsmoschusretorridi* | *Okra yellow crinkle virus* | okra yellow crinkle virus | NC\_008377 |
|  | *Begomovirus abelsmoschusmexicoense* | *Okra yellow mosaic Mexico virus* | okra yellow mosaic Mexico virus | DNA-A: NC\_014066; DNA-B: NC\_014067 |
|  | *Begomovirus oxalisflavi* | *Oxalis yellow vein virus* | Oxalis yellow vein virus | NC\_026253 |
|  | *Begomovirus papayae* | *Papaya leaf crumple virus* | papaya leaf crumple virus | NC\_014707 |
|  | *Begomovirus caricachinaense* | *Papaya leaf curl China virus* | papaya leaf curl China virus | NC\_005321 |
|  | *Begomovirus caricaguandongense* | *Papaya leaf curl Guandong virus* | papaya leaf curl Guandong virus | NC\_005844 |
|  | *Begomovirus caricae* | *Papaya leaf curl virus* | papaya leaf curl virus | NC\_004147 |
|  | *Begomovirus caricaprimi* | *Papaya severe leaf curl virus 1* | papaya severe leaf curl virus 1 | NC\_076291 |
|  | *Begomovirus caricasecundi* | *Papaya severe leaf curl virus 2* | papaya severe leaf curl virus 2 | NC\_076292 |
|  | *Begomovirus caricaflavi* | *Papaya yellow leaf curl virus* | papaya yellow leaf curl virus | NC\_076268 |
|  | *Begomovirus passiflorae* | *Passionfruit leaf curl virus* | passionfruit leaf curl virus | NC\_076047 |
|  | *Begomovirus passifloracontorsionis* | *Passionfruit leaf distortion virus* | passionfruit leaf distortion virus | DNA-A: NC\_031764; DNA-B: NC\_031765 |
|  | *Begomovirus passifloraseveri* | *Passionfruit severe leaf distortion virus* | passionfruit severe leaf distortion virus | DNA-A: NC\_012786; DNA-B: NC\_012787 |
|  | *Begomovirus pavoniae* | *Pavonia mosaic virus* | Pavonia mosaic virus | DNA-A: NC\_038981; DNA-B: NC\_040185 |
|  | *Begomovirus pavoniaflavi* | *Pavonia yellow mosaic virus* | Pavonia yellow mosaic virus | DNA-A: NC\_029105; DNA-B: NC\_037611 |
|  | *Begomovirus pisi* | *Pea leaf distortion virus* | pea leaf distortion virus | NC\_033554 |
|  | *Begomovirus pedilanthi* | *Pedilanthus leaf curl virus* | Pedilenthus leaf curl virus | NC\_012118 |
|  | *Begomovirus capsicumannui* | *Pepper blistering leaf virus* | pepper blistering leaf virus | DNA-A: NC\_055596; DNA-B: NC\_060096 |
|  | *Begomovirus capsicummusivi* | *Pepper golden mosaic virus* | pepper golden mosaic virus | DNA-A: NC\_004101; DNA-B: NC\_004096 |
|  | *Begomovirus capsicumhuastecoense* | *Pepper huasteco yellow vein virus* | pepper huasteco yellow vein virus | DNA-A: NC\_001359; DNA-B: NC\_001369 |
|  | *Begomovirus capsicumbangladeschense* | *Pepper leaf curl Bangladesh virus* | pepper leaf curl Bangladesh virus | NC\_004192 |
|  | *Begomovirus capsicumlahorense* | *Pepper leaf curl Lahore virus* | pepper leaf curl Lahore virus | NC\_074864 |
|  | *Begomovirus capsici* | *Pepper leaf curl virus* | pepper leaf curl virus | NC\_000882 |
|  | *Begomovirus capsicumyunnanense* | *Pepper leaf curl Yunnan virus* | pepper leaf curl Yunnan virus | NC\_010618 |
|  | *Begomovirus capsicumcontorsioris* | *Pepper leafroll virus* | pepper leafroll virus | DNA-A: NC\_043517; DNA-B: NC\_050698 |
|  | *Begomovirus capsicumacehense* | *Pepper yellow leaf curl Aceh virus* | pepper yellow leaf curl Aceh virus | DNA-A: NC\_055516; DNA-B: NC\_055517 |
|  | *Begomovirus capsicumindonesiaense* | *Pepper yellow leaf curl Indonesia virus* | pepper yellow leaf curl Indonesia virus | DNA-A: NC\_008283; DNA-B: NC\_008284 |
|  | *Begomovirus capsicumindonesiaenseduo* | *Pepper yellow leaf curl Indonesia virus 2* | pepper yellow leaf curl Indonesia virus 2 | NC\_055146 |
|  | *Begomovirus capsicumthailandense* | *Pepper yellow leaf curl Thailand virus* | pepper yellow leaf curl Thailand virus | DNA-A: [NC\_028989](https://www.ncbi.nlm.nih.gov/nuccore/NC_028989.1/); DNA-B: [NC\_040186](https://www.ncbi.nlm.nih.gov/nuccore/NC_040186.1/) |
|  | *Begomovirus capsicumchinaense* | *Pepper yellow leaf curl virus* | pepper yellow leaf curl virus | NC\_020236 |
|  | *Begomovirus capsicummaliense* | *Pepper yellow vein Mali virus* | pepper yellow vein Mali virus | NC\_005347 |
|  | *Begomovirus polygalae* | *Polygala garcinii virus* | Polygala garcinii virus | NC\_037068 |
|  | *Begomovirus tuberosumpanamaense* | *Potato yellow mosaic Panama virus* | potato yellow mosaic Panama virus | DNA-A: NC\_002048; DNA-B: NC\_002049 |
|  | *Begomovirus tuberosi* | *Potato yellow mosaic virus* | potato yellow mosaic virus | DNA-A: NC\_001934; DNA-B: NC\_001935 |
|  | *Begomovirus pouzolziae* | *Pouzolzia golden mosaic virus* | Pouzolzia golden mosaic virus | NC\_023849 |
|  | *Begomovirus pouzolziaguangdongense* | *Pouzolzia mosaic Guangdong virus* | Pouzolzia mosaic Guangdong virus | NC\_038453 |
|  | *Begomovirus pouzolziaflavi* | *Pouzolzia yellow mosaic virus* | Pouzolzia yellow mosaic virus | NC\_075413 |
|  | *Begomovirus premnae* | *Premna leaf curl virus* | Premna leaf curl virus | NC\_038454 |
|  | *Begomovirus cucurbitamaximae* | *Pumpkin yellow mosaic virus* | pumpkin yellow mosaic virus | NC\_010946 |
|  | *Begomovirus ramiis* | *Ramie mosaic Yunnan virus* | ramie mosaic Yunnan virus | NC\_030699 |
|  | *Begomovirus rhynchosiahavanaense* | *Rhynchosia golden mosaic Havana virus* | Rhynchosia golden mosaic Havana virus | DNA-A: NC\_038800; DNA-B: NC\_038801 |
|  | *Begomovirus rhynchosiasinaloaense* | *Rhynchosia golden mosaic Sinaloa virus* | Rhynchosia golden mosaic Sinaloa virus | DNA-A: NC\_038802; DNA-B: NC\_038803 |
|  | *Begomovirus rhynchosiaurei* | *Rhynchosia golden mosaic virus* | Rhynchosia golden mosaic virus | DNA-A: NC\_037306; DNA-B: NC\_037305 |
|  | *Begomovirus rhynchosiamusivi* | *Rhynchosia mild mosaic virus* | Rhynchosia mild mosaic virus | DNA-A: NC\_015488; DNA-B: NC\_015489 |
|  | *Begomovirus rhynchosiarugosi* | *Rhynchosia rugose golden mosaic virus* | Rhynchosia rugose golden mosaic virus | DNA-A: NC\_038805; DNA-B: NC\_038804 |
|  | *Begomovirus rhynchosiaindiaense* | *Rhynchosia yellow mosaic India virus* | Rhynchosia yellow mosaic India virus | DNA-A: NC\_014902; DNA-B: NC\_014903 |
|  | *Begomovirus rhynchosiaflavi* | *Rhynchosia yellow mosaic virus* | Rhynchosia yellow mosaic virus | DNA-A: NC\_038885; DNA-B: NC\_038886 |
|  | *Begomovirus rosae* | *Rose leaf curl virus* | rose leaf curl virus | NC\_024687 |
|  | *Begomovirus sauropi* | *Sauropus leaf curl virus* | Sauropus leaf curl virus | NC\_038455 |
|  | *Begomovirus senecionis* | *Senecio yellow mosaic virus* | Senecio yellow mosaic virus | NC\_006995 |
|  | *Begomovirus sennae* | *Senna leaf curl virus* | Senna leaf curl virus | NC\_030748 |
|  | *Begomovirus sidamusivi* | *Sida angular mosaic virus* | Sida angular mosaic virus | DNA-A: NC\_031456; DNA-B: NC\_031457 |
|  | *Begomovirus sidaflavi* | *Sida bright yellow mosaic virus* | Sida bright yellow mosaic virus | DNA-A: NC\_038991; DNA-B: NC\_040191 |
|  | *Begomovirus sidapallidi* | *Sida chlorotic leaf virus* | Sida chlorotic leaf virus | DNA-A: NC\_055581; DNA-B: NC\_060102 |
|  | *Begomovirus sidapallivariati* | *Sida chlorotic mottle virus* | Sida chlorotic mottle virus | NC\_038990 |
|  | *Begomovirus sidavenae* | *Sida chlorotic vein virus* | Sida chlorotic vein virus | DNA-A: NC\_031455; DNA-B: NC\_031454 |
|  | *Begomovirus sidaciliaris* | *Sida ciliaris golden mosaic virus* | Sida ciliaris golden mosaic virus | DNA-A: NC\_038456; DNA-B: NC\_049200 |
|  | *Begomovirus sidavulgaris* | *Sida common mosaic virus* | Sida common mosaic virus | NC\_038457 |
|  | *Begomovirus sidaureibracoense* | *Sida golden mosaic Braco virus* | Sida golden mosaic Braco virus | NC\_038458 |
|  | *Begomovirus sidaureibrazilense* | *Sida golden mosaic Brazil virus* | Sida golden mosaic Brazil virus | NC\_038887 |
|  | *Begomovirus sidaureibuckupense* | *Sida golden mosaic Buckup virus* | Sida golden mosaic Buckup virus | DNA-A: NC\_014794; DNA-B: NC\_014795 |
|  | *Begomovirus sidaureicostaricaense* | *Sida golden mosaic Costa Rica virus* | Sida golden mosaic Costa Rica virus | DNA-A: NC\_004657; DNA-B: NC\_004658 |
|  | *Begomovirus sidaureifloridaense* | *Sida golden mosaic Florida virus* | Sida golden mosaic Florida virus | DNA-A: NC\_014446; DNA-B: NC\_014447 |
|  | *Begomovirus sidaureilaraense* | *Sida golden mosaic Lara virus* | Sida golden mosaic Lara virus | NC\_038459 |
|  | *Begomovirus sidaureidis* | *Sida golden mosaic virus* | Sida golden mosaic virus | DNA-A: NC\_002046; DNA-B: NC\_002047 |
|  | *Begomovirus sidaureivariati* | *Sida golden mottle virus* | Sida golden mottle virus | DNA-A: NC\_014130; DNA-B: NC\_014128 |
|  | *Begomovirus sidaureimaculae* | *Sida golden yellow spot virus* | Sida golden yellow spot virus | NC\_038992 |
|  | *Begomovirus sidaureivenae* | *Sida golden yellow vein virus* | Sida golden yellow vein virus | NC\_038460 |
|  | *Begomovirus sidaintervenae* | *Sida interveinal bright yellow virus* | Sida interveinal bright yellow virus | DNA-A: NC\_055602; DNA-B: NC\_060097 |
|  | *Begomovirus sidacontorsionis* | *Sida leaf curl virus* | Sida leaf curl virus | NC\_007638 |
|  | *Begomovirus sidamicranthae* | *Sida micrantha mosaic virus* | Sida micrantha mosaic virus | DNA-A: NC\_005330; DNA-B: NC\_005331 |
|  | *Begomovirus sidaalagoasense* | *Sida mosaic Alagoas virus* | Sida mosaic Alagoas virus | DNA-A: NC\_016573; DNA-B: NC\_016579 |
|  | *Begomovirus sidaboliviaenseprimi* | *Sida mosaic Bolivia virus 1* | Sida mosaic Bolivia virus 1 | DNA-A: NC\_015046; DNA-B: NC\_015044 |
|  | *Begomovirus sidaboliviaensecundi* | *Sida mosaic Bolivia virus 2* | Sida mosaic Bolivia virus 2 | DNA-A: NC\_015043; DNA-B: NC\_015047 |
|  | *Begomovirus sidasinaloaense* | *Sida mosaic Sinaloa virus* | Sida mosaic Sinaloa virus | DNA-A: NC\_008059; DNA-B: NC\_008056 |
|  | *Begomovirus sidavariatialagoense* | *Sida mottle Alagoas virus* | Sida mottle Alagoas virus | NC\_020256 |
|  | *Begomovirus sidavariati* | *Sida mottle virus* | Sida mottle virus | NC\_004637 |
|  | *Begomovirus sidaflavamaculae* | *Sida yellow blotch virus* | Sida yellow blotch virus | NC\_020254 |
|  | *Begomovirus sidaflavaureimusivi* | *Sida yellow golden mosaic virus* | Sida yellow golden mosaic virus | DNA-A: NC\_055548; DNA-B: NC\_060100 |
|  | *Begomovirus sidaflavacontorsionis* | *Sida yellow leaf curl virus* | Sida yellow leaf curl virus | NC\_038461 |
|  | *Begomovirus sidaflavalagoense* | *Sida yellow mosaic Alagoas virus* | Sida yellow mosaic Alagoas virus | NC\_020255 |
|  | *Begomovirus sidaflavachinaense* | *Sida yellow mosaic China virus* | Sida yellow mosaic China virus | NC\_017987 |
|  | *Begomovirus sidaflavamusivi* | *Sida yellow mosaic virus* | Sida yellow mosaic virus | NC\_004639 |
|  | *Begomovirus sidaflavayucatanense* | *Sida yellow mosaic Yucatan virus* | Sida yellow mosaic Yucatan virus | DNA-A: NC\_008779; DNA-B: NC\_008780 |
|  | *Begomovirus sidaflavavariati* | *Sida yellow mottle virus* | Sida yellow mottle virus | DNA-A: NC\_016082; DNA-B: NC\_016083 |
|  | *Begomovirus sidaflavaneti* | *Sida yellow net virus* | Sida yellow net virus | NC\_020253 |
|  | *Begomovirus sidaflavavietnamense* | *Sida yellow vein Vietnam virus* | Sida yellow vein Vietnam virus | NC\_009547 |
|  | *Begomovirus sidaflavavenae* | *Sida yellow vein virus* | Sida yellow vein virus | DNA-A: NC\_004661; DNA-B: NC\_004662 |
|  | *Begomovirus sidastri* | *Sidastrum golden leaf spot virus* | Sidastrum golden leaf spot virus | NC\_038462 |
|  | *Begomovirus siegesbeckiaguangxiense* | *Siegesbeckia yellow vein Guangxi virus* | Siegesbeckia yellow vein Guangxi virus | NC\_008317 |
|  | *Begomovirus siegesbeckiae* | *Siegesbeckia yellow vein virus* | Siegesbeckia yellow vein virus | NC\_008236 |
|  | *Begomovirus solanumboliviense* | *Solanum mosaic Bolivia virus* | Solanum mosaic Bolivia virus | DNA-A: NC\_024304; DNA-B: NC\_024305 |
|  | *Begomovirus warburgi* | *South African cassava mosaic virus* | South African cassava mosaic virus | DNA-A: NC\_003803; DNA-B: NC\_003804 |
|  | *Begomovirus glycinis* | *Soybean blistering mosaic virus* | soybean blistering mosaic virus | NC\_038463 |
|  | *Begomovirus glycinepallidi* | *Soybean chlorotic blotch virus* | soybean chlorotic blotch virus | DNA-A: NC\_014141; DNA-B: NC\_014142 |
|  | *Begomovirus glycinevariati* | *Soybean mild mottle virus* | soybean mild mottle virus | NC\_014140 |
|  | *Begomovirus spilanthis* | *Spilanthes yellow vein virus* | Spilanthes yellow vein virus | NC\_009545 |
|  | *Begomovirus spinaciae* | *Spinach yellow vein virus* | spinach yellow vein virus | NC\_023023 |
|  | *Begomovirus cucurbitachinaense* | *Squash leaf curl China virus* | squash leaf curl China virus | DNA-A: NC\_007339; DNA-B: NC\_007338 |
|  | *Begomovirus cucurbitaphilippinense* | *Squash leaf curl Philippines virus* | squash leaf curl Philippines virus | DNA-A: NC\_005845; DNA-B: NC\_005846 |
|  | *Begomovirus cucurbitapeponis* | *Squash leaf curl virus* | squash leaf curl virus | DNA-A: NC\_001936; DNA-B: NC\_001937 |
|  | *Begomovirus cucurbitayunnanense* | *Squash leaf curl Yunnan virus* | squash leaf curl Yunnan virus | NC\_004651 |
|  | *Begomovirus cucurbitatenuis* | *Squash mild leaf curl virus* | squash mild leaf curl virus | DNA-A: NC\_004645; DNA-B: NC\_004646 |
|  | *Begomovirus stanleyi* | *Sri Lankan cassava mosaic virus* | Sri Lankan cassava mosaic virus | DNA-A: NC\_003861; DNA-B: NC\_003862 |
|  | *Begomovirus stachytarphetae* | *Stachytarpheta leaf curl virus* | Stachytarpheta leaf curl virus | NC\_004091 |
|  | *Begomovirus crotalariae* | *Sunn hemp leaf distortion virus* | sunn hemp leaf distortion virus | NC\_013019 |
|  | *Begomovirus ipomoeakoreanense* | *Sweet potato golden vein Korea virus* | sweet potato golden Korea vein virus | NC\_043433 |
|  | *Begomovirus ipomoeacanaryense* | *Sweet potato leaf curl Canary virus* | sweet potato leaf curl Canary virus | NC\_013465 |
|  | *Begomovirus ipomoeachinaense* | *Sweet potato leaf curl China virus* | sweet potato leaf curl China virus | NC\_038464 |
|  | *Begomovirus ipomoeageorgiaense* | *Sweet potato leaf curl Georgia virus* | sweet potato leaf curl Georgia virus | NC\_004640 |
|  | *Begomovirus ipomoeaguangxiense* | *Sweet potato leaf curl Guangxi virus* | sweet potato leaf curl Guangxi virus | NC\_024693 |
|  | *Begomovirus ipomoeahenanense* | *Sweet potato leaf curl Henan virus* | sweet potato leaf curl Henan virus | NC\_021719 |
|  | *Begomovirus ipomoeahubeiense* | *Sweet potato leaf curl Hubei virus* | sweet potato leaf curl Hubei virus | NC\_055494 |
|  | *Begomovirus ipomoeasaopauloense* | *Sweet potato leaf curl Sao Paulo virus* | sweet potato leaf curl Sao Paulo virus | NC\_025681 |
|  | *Begomovirus ipomoeashandongense* | *Sweet potato leaf curl Shandong virus* | sweet potato leaf curl Shandong virus | NC\_075421 |
|  | *Begomovirus ipomoeasichuanprimi* | *Sweet potato leaf curl Sichuan virus 1* | sweet potato leaf curl Sichuan virus 1 | NC\_038465 |
|  | *Begomovirus ipomoeasichuansecundi* | *Sweet potato leaf curl Sichuan virus 2* | sweet potato leaf curl Sichuan virus 2 | NC\_022586 |
|  | *Begomovirus ipomoeasouthcarolinaense* | *Sweet potato leaf curl South Carolina virus* | sweet potato leaf curl South Carolina virus | NC\_015317 |
|  | *Begomovirus ipomoeae* | *Sweet potato leaf curl virus* | sweet potato leaf curl virus | NC\_004650 |
|  | *Begomovirus ipomoeamusivi* | *Sweet potato mosaic virus* | sweet potato mosaic virus | NC\_038466 |
|  | *Begomovirus synedrellae* | *Synedrella yellow vein clearing virus* | Synedrella yellow vein clearing virus | NC\_038994 |
|  | *Begomovirus telfairiae* | *Telfairia golden mosaic virus* | Telfairia golden mosaic virus | NC\_030403 |
|  | *Begomovirus nicotianae* | *Tobacco curly shoot virus* | tobacco curly shoot virus | NC\_003722 |
|  | *Begomovirus nicotianacomorosense* | *Tobacco leaf curl Comoros virus* | tobacco leaf curl Comoros virus | NC\_038888 |
|  | *Begomovirus nicotianacubaense* | *Tobacco leaf curl Cuba virus* | tobacco leaf curl Cuba virus | DNA-A: NC\_035887; DNA-B: NC\_035888 |
|  | *Begomovirus nicotianadominicanense* | *Tobacco leaf curl Dominican Republic virus* | tobacco leaf curl Dominican Republic virus | DNA-A: NC\_055514; DNA-B: NC\_055515 |
|  | *Begomovirus nicotianapusaense* | *Tobacco leaf curl Pusa virus* | tobacco leaf curl Pusa virus | NC\_014596 |
|  | *Begomovirus nicotianathailandense* | *Tobacco leaf curl Thailand virus* | tobacco leaf curl Thailand virus | NC\_009553 |
|  | *Begomovirus nicotianayunnanense* | *Tobacco leaf curl Yunnan virus* | tobacco leaf curl Yunnan virus | NC\_004356 |
|  | *Begomovirus nicotianazimbabwense* | *Tobacco leaf curl Zimbabwe virus* | tobacco leaf curl Zimbabwe virus | NC\_002817 |
|  | *Begomovirus nicotianarugosi* | *Tobacco leaf rugose virus* | tobacco leaf rugose virus | NC\_038890 |
|  | *Begomovirus nicotianavariati* | *Tobacco mottle leaf curl virus* | tobacco mottle leaf curl virus | NC\_038893 |
|  | *Begomovirus nicotianaparvi* | *Tobacco yellow crinkle virus* | tobacco yellow crinkle virus | NC\_015627; DNA-B: NC\_015628 |
|  | *Begomovirus solanummusivi* | *Tomato bright yellow mosaic virus* | tomato bright yellow mosaic virus | NC\_038467 |
|  | *Begomovirus solanumflavariati* | *Tomato bright yellow mottle virus* | tomato bright yellow mottle virus | NC\_038468 |
|  | *Begomovirus solanumlapazense* | *Tomato chino La Paz virus* | tomato chino La Paz virus | NC\_005843 |
|  | *Begomovirus solanumpallidi* | *Tomato chlorotic leaf curl virus* | tomato chlorotic leaf curl virus | DNA-A: NC\_055472; DNA-B: NC\_055471 |
|  | *Begomovirus solanumpallidicontorsionis* | *Tomato chlorotic leaf distortion virus* | tomato chlorotic leaf distortion virus | DNA-A: NC\_015962; DNA-B: NC\_015961 |
|  | *Begomovirus solanumpallidiguyanense* | *Tomato chlorotic mottle Guyane virus* | tomato chlorotic mottle Guyane virus | DNA-A: NC\_038965; DNA-B: NC\_040183 |
|  | *Begomovirus solanumpallidivariati* | *Tomato chlorotic mottle virus* | tomato chlorotic mottle virus | DNA-A: NC\_003664; DNA-B: NC\_003665 |
|  | *Begomovirus solanumvulgarismusivi* | *Tomato common mosaic virus* | tomato common mosaic virus | DNA-A: NC\_010835; DNA-B: NC\_010836 |
|  | *Begomovirus solanumretorridi* | *Tomato curly stunt virus* | tomato curly stunt virus | NC\_004675 |
|  | *Begomovirus solanumparvi* | *Tomato dwarf leaf virus* | tomato dwarf leaf virus | DNA-A: NC\_016580; DNA-B: NC\_016581 |
|  | *Begomovirus solanumtumoris* | *Tomato enation leaf curl virus* | tomato enation leaf curl virus | NC\_026761 |
|  | *Begomovirus solanumaureicontorsionis* | *Tomato golden leaf distortion virus* | tomato golden leaf distortion virus | NC\_043122 |
|  | *Begomovirus solanumaureimaculae* | *Tomato golden leaf spot virus* | tomato golden leaf spot virus | NC\_021579 |
|  | *Begomovirus solanumaureimusivi* | *Tomato golden mosaic virus* | tomato golden mosaic virus | DNA-A: NC\_001507; DNA-B: NC\_001508 |
|  | *Begomovirus solanumaureivariati* | *Tomato golden mottle virus* | tomato golden mottle virus | DNA-A: NC\_008058; DNA-B: NC\_008057 |
|  | *Begomovirus solanumaureivenae* | *Tomato golden vein virus* | tomato golden vein virus | DNA-A: NC\_038807; DNA-B: NC\_038806 |
|  | *Begomovirus solanumintervenae* | *Tomato interveinal chlorosis virus* | tomato interveinal chlorosis virus | NC\_038469 |
|  | *Begomovirus solanumlatentis* | *Tomato latent virus* | tomato latent virus | NC\_038963 |
|  | *Begomovirus solanumanjouanense* | *Tomato leaf curl Anjouan virus* | tomato leaf curl Anjouan virus | NC\_038894 |
|  | *Begomovirus solanumarushaense* | *Tomato leaf curl Arusha virus* | tomato leaf curl Arusha virus | NC\_009030 |
|  | *Begomovirus solanumbangalorense* | *Tomato leaf curl Bangalore virus* | tomato leaf curl Bangalore virus | NC\_003891 |
|  | *Begomovirus solanumbangladeshense* | *Tomato leaf curl Bangladesh virus* | tomato leaf curl Bangladesh virus | NC\_004614 |
|  | *Begomovirus solanumburkinafasoense* | *Tomato leaf curl Burkina Faso virus* | tomato leaf curl Burkina Faso virus | NC\_033779 |
|  | *Begomovirus solanumcebuense* | *Tomato leaf curl Cebu virus* | tomato leaf curl Cebu virus | NC\_010439 |
|  | *Begomovirus solanumchinaense* | *Tomato leaf curl China virus* | tomato leaf curl China virus | NC\_005320 |
|  | *Begomovirus solanumcomorosense* | *Tomato leaf curl Comoros virus* | tomato leaf curl Comoros virus | NC\_006876 |
|  | *Begomovirus solanumdianaense* | *Tomato leaf curl Diana virus* | tomato leaf curl Diana virus | NC\_038896 |
|  | *Begomovirus solanumghanaense* | *Tomato leaf curl Ghana virus* | tomato leaf curl Ghana virus | NC\_010313 |
|  | *Begomovirus solanumguangdongense* | *Tomato leaf curl Guangdong virus* | tomato leaf curl Guangdong virus | NC\_008373 |
|  | *Begomovirus solanumguangxiense* | *Tomato leaf curl Guangxi virus* | tomato leaf curl Guangxi virus | NC\_008329 |
|  | *Begomovirus solanumgujaratense* | *Tomato leaf curl Gujarat virus* | tomato leaf curl Gujarat virus | DNA-A: NC\_004558; DNA-B: NC\_004559 |
|  | *Begomovirus solanumhainanense* | *Tomato leaf curl Hainan virus* | tomato leaf curl Hainan virus | NC\_013102 |
|  | *Begomovirus solanumhanoiense* | *Tomato leaf curl Hanoi virus* | tomato leaf curl Hanoi virus | NC\_015124 |
|  | *Begomovirus solanumhsinchuense* | *Tomato leaf curl Hsinchu virus* | tomato leaf curl Hsinchu virus | DNA-A: NC\_010791; DNA-B: NC\_010792 |
|  | *Begomovirus solanumiranense* | *Tomato leaf curl Iran virus* | tomato leaf curl Iran virus | NC\_005842 |
|  | *Begomovirus solanumjapanense* | *Tomato leaf curl Japan virus* | tomato leaf curl Japan virus | NC\_055124 |
|  | *Begomovirus solanumjavaense* | *Tomato leaf curl Java virus* | tomato leaf curl Java virus | NC\_005031 |
|  | *Begomovirus solanumjoydebpurense* | *Tomato leaf curl Joydebpur virus* | tomato leaf curl Joydebpur virus | NC\_007723 |
|  | *Begomovirus solanumkarnatakaense* | *Tomato leaf curl Karnataka virus* | tomato leaf curl Karnataka virus | NC\_003897 |
|  | *Begomovirus solanumkarnatakasecundi* | *Tomato leaf curl Karnataka virus 2* | tomato leaf curl Karnataka virus 2 | NC\_055133 |
|  | *Begomovirus solanumkarnatakatertii* | *Tomato leaf curl Karnataka virus 3* | tomato leaf curl Karnataka virus 3 | NC\_055134 |
|  | *Begomovirus solanumkeralaense* | *Tomato leaf curl Kerala virus* | tomato leaf curl Kerala virus | NC\_011135 |
|  | *Begomovirus solanumkunenense* | *Tomato leaf curl Kunene virus* | tomato leaf curl Kunene virus | NC\_076485 |
|  | *Begomovirus solanumlaosense* | *Tomato leaf curl Laos virus* | tomato leaf curl Laos virus | NC\_004613 |
|  | *Begomovirus solanumliwaense* | *Tomato leaf curl Liwa virus* | tomato leaf curl Liwa virus | NC\_023312 |
|  | *Begomovirus solanummadagascarense* | *Tomato leaf curl Madagascar virus* | tomato leaf curl Madagascar virus | NC\_006874 |
|  | *Begomovirus solanummahense* | *Tomato leaf curl Mahe virus* | tomato leaf curl Mahé virus | NC\_055498 |
|  | *Begomovirus solanummalaysiaense* | *Tomato leaf curl Malaysia virus* | tomato leaf curl Malaysia virus | NC\_004648 |
|  | *Begomovirus solanummaliense* | *Tomato leaf curl Mali virus* | tomato leaf curl Mali virus | NC\_005348 |
|  | *Begomovirus solanummindanaoense* | *Tomato leaf curl Mindanao virus* | tomato leaf curl Mindanao virus | NC\_010440 |
|  | *Begomovirus solanummoheliense* | *Tomato leaf curl Moheli virus* | tomato leaf curl Moheli virus | NC\_038897 |
|  | *Begomovirus solanumnamakelyense* | *Tomato leaf curl Namakely virus* | tomato leaf curl Namakely virus | NC\_038899 |
|  | *Begomovirus solanumdelhiense* | *Tomato leaf curl New Delhi virus* | tomato leaf curl New Delhi virus | DNA-A: NC\_004611; DNA-B: NC\_004612 |
|  | *Begomovirus solanumdelhisecundi* | *Tomato leaf curl New Delhi virus 2* | tomato leaf curl New Delhi virus 2 | NC\_038470 |
|  | *Begomovirus solanumdelhiquarti* | *Tomato leaf curl New Delhi virus 4* | tomato leaf curl New Delhi virus 4 | NC\_038471 |
|  | *Begomovirus solanumdelhiquinti* | *Tomato leaf curl New Delhi virus 5* | tomato leaf curl New Delhi virus 5 | NC\_055126 |
|  | *Begomovirus solanumnigeriaense* | *Tomato leaf curl Nigeria virus* | tomato leaf curl Nigeria virus | NC\_012206 |
|  | *Begomovirus solanumpalampurense* | *Tomato leaf curl Palampur virus* | tomato leaf curl Palampur virus | DNA-A: NC\_010840; DNA-B: NC\_010839 |
|  | *Begomovirus solanumpatnaense* | *Tomato leaf curl Patna virus* | tomato leaf curl Patna virus | NC\_012492 |
|  | *Begomovirus solanumphilippinense* | *Tomato leaf curl Philippines virus* | tomato leaf curl Philippines virus | NC\_005032 |
|  | *Begomovirus solanumpunense* | *Tomato leaf curl Pune virus* | tomato leaf curl Pune virus | NC\_008517 |
|  | *Begomovirus solanumviolavenae* | *Tomato leaf curl purple vein virus* | tomato leaf curl purple vein virus | NC\_035481 |
|  | *Begomovirus solanumrajasthanense* | *Tomato leaf curl Rajasthan virus* | tomato leaf curl Rajasthan virus | NC\_038472 |
|  | *Begomovirus solanumseychellesense* | *Tomato leaf curl Seychelles virus* | tomato leaf curl Seychelles virus | NC\_009031 |
|  | *Begomovirus solanumsinaloaense* | *Tomato leaf curl Sinaloa virus* | tomato leaf curl Sinaloa virus | DNA-A: NC\_009606; DNA-B: NC\_009605 |
|  | *Begomovirus solanumsrilankaense* | *Tomato leaf curl Sri Lanka virus* | tomato leaf curl Sri Lanka virus | NC\_004647 |
|  | *Begomovirus solanumsudanense* | *Tomato leaf curl Sudan virus* | tomato leaf curl Sudan virus | NC\_005855 |
|  | *Begomovirus solanumsulawesiense* | *Tomato leaf curl Sulawesi virus* | tomato leaf curl Sulawesi virus | NC\_013413 |
|  | *Begomovirus solanumtaiwanense* | *Tomato leaf curl Taiwan virus* | tomato leaf curl Taiwan virus | NC\_003898 |
|  | *Begomovirus solanumtanzaniaense* | *Tomato leaf curl Tanzania virus* | tomato leaf curl Tanzania virus | NC\_075410 |
|  | *Begomovirus solanumtoliaraense* | *Tomato leaf curl Toliara virus* | tomato leaf curl Toliara virus | NC\_038901 |
|  | *Begomovirus solanumugandaense* | *Tomato leaf curl Uganda virus* | tomato leaf curl Uganda virus | NC\_038473 |
|  | *Begomovirus solanumvietnamense* | *Tomato leaf curl Vietnam virus* | tomato leaf curl Vietnam virus | NC\_004153 |
|  | *Begomovirus solanumaustraliaense* | *Tomato leaf curl virus* | tomato leaf curl virus | NC\_003896 |
|  | *Begomovirus solanumdepravationis* | *Tomato leaf deformation virus* | tomato leaf deformation virus | NC\_014510 |
|  | *Begomovirus solanumcontorsionis* | *Tomato leaf distortion virus* | tomato leaf distortion virus | NC\_038474 |
|  | *Begomovirus solanumtenuimusivi* | *Tomato mild mosaic virus* | tomato mild mosaic virus | DNA-A: NC\_010833; DNA-B: NC\_010834 |
|  | *Begomovirus solanumaraguaense* | *Tomato mild yellow leaf curl Aragua virus* | tomato mild yellow leaf curl Aragua virus | DNA-A: NC\_009490; DNA-B: NC\_009491 |
|  | *Begomovirus solanumhavanaense* | *Tomato mosaic Havana virus* | tomato mosaic Havana virus | DNA-A: NC\_003867; DNA-B: NC\_003868 |
|  | *Begomovirus solanumseverparvi* | *Tomato mosaic severe dwarf virus* | tomato mosaic severe dwarf virus | DNA-A: NC\_055587; DNA-B: NC\_060090 |
|  | *Begomovirus solanumvariatuminvolutionis* | *Tomato mottle leaf curl virus* | tomato mottle leaf curl virus | NC\_032006 |
|  | *Begomovirus solanumtainoense* | *Tomato mottle Taino virus* | tomato mottle Taino virus | DNA-A: NC\_001828; DNA-B: NC\_001917 |
|  | *Begomovirus solanumvariati* | *Tomato mottle virus* | tomato mottle virus | DNA-A: NC\_001938; DNA-B: NC\_001939 |
|  | *Begomovirus solanumargentinaense* | *Tomato mottle wrinkle virus* | tomato mottle wrinkle virus | DNA-A: NC\_025265; DNA-B: NC\_025266 |
|  | *Begomovirus solanumrugosi* | *Tomato rugose mosaic virus* | tomato rugose mosaic virus | DNA-A: NC\_002555; DNA-B: NC\_002556 |
|  | *Begomovirus solanumrugosiflavi* | *Tomato rugose yellow leaf curl virus* | tomato rugose yellow leaf curl virus | DNA-A: NC\_020257; DNA-B: NC\_038234 |
|  | *Begomovirus solanumkalakadaense* | *Tomato severe leaf curl Kalakada virus* | tomato severe leaf curl Kalakada virus | NC\_055140 |
|  | *Begomovirus solanumseveri* | *Tomato severe leaf curl virus* | tomato severe leaf curl virus | NC\_004642 |
|  | *Begomovirus solanumseverugosi* | *Tomato severe rugose virus* | tomato severe rugose virus | DNA-A: NC\_009607; DNA-B: NC\_009612 |
|  | *Begomovirus solanumtortilis* | *Tomato twisted leaf virus* | tomato twisted leaf virus | NC\_055524 |
|  | *Begomovirus solanumvenadepravationis* | *Tomato vein clearing leaf deformation virus* | tomato vein clearing leaf deformation virus | DNA-A: NC\_055570; DNA-B: NC\_060101 |
|  | *Begomovirus solanumcrispi* | *Tomato wrinkled mosaic virus* | tomato wrinkled mosaic virus | DNA-A: NC\_055157; DNA-B: NC\_055158 |
|  | *Begomovirus solanumflavusaxarquiaense* | *Tomato yellow leaf curl Axarquia virus* | tomato yellow leaf curl Axarquia virus | NC\_011024 |
|  | *Begomovirus solanumflavuschinaense* | *Tomato yellow leaf curl China virus* | tomato yellow leaf curl China virus | NC\_004044 |
|  | *Begomovirus solanumflavusguangdongense* | *Tomato yellow leaf curl Guangdong virus* | tomato yellow leaf curl Guangdong virus | NC\_008374 |
|  | *Begomovirus solanumflavusindonesiaense* | *Tomato yellow leaf curl Indonesia virus* | tomato yellow leaf curl Indonesia virus | NC\_008267 |
|  | *Begomovirus solanumflavuskanchanaburiense* | *Tomato yellow leaf curl Kanchanaburi virus* | tomato yellow leaf curl Kanchanaburi virus | DNA-A: NC\_005812; DNA-B: NC\_005811 |
|  | *Begomovirus solanumflavusmalacitanum* | *Tomato yellow leaf curl Malaga virus* | tomato yellow leaf curl Malaga virus | NC\_004569 |
|  | *Begomovirus solanumflavusmaliense* | *Tomato yellow leaf curl Mali virus* | tomato yellow leaf curl Mali virus | NC\_027215 |
|  | *Begomovirus solanumflavusardiniaense* | *Tomato yellow leaf curl Sardinia virus* | tomato yellow leaf curl Sardinia virus | NC\_003828 |
|  | *Begomovirus solanumflavushuangbaiense* | *Tomato yellow leaf curl Shuangbai virus* | tomato yellow leaf curl Shuangbai virus | NC\_029995 |
|  | *Begomovirus solanumflavusthailandense* | *Tomato yellow leaf curl Thailand virus* | tomato yellow leaf curl Thailand virus | DNA-A: NC\_000869; DNA-B: NC\_000870 |
|  | *Begomovirus solanumflavusvietnamense* | *Tomato yellow leaf curl Vietnam virus* | tomato yellow leaf curl Vietnam virus | NC\_009548 |
|  | *Begomovirus coheni* | *Tomato yellow leaf curl virus* | tomato yellow leaf curl virus | NC\_004005 |
|  | *Begomovirus solanumflavusyunnanense* | *Tomato yellow leaf curl Yunnan virus* | tomato yellow leaf curl Yunnan virus | NC\_021341 |
|  | *Begomovirus solanumflavusdepravationis* | *Tomato yellow leaf deformation dwarf virus* | tomato yellow leaf deformation dwarf virus | DNA-A: NC\_055586; DNA\_B: NC\_060089 |
|  | *Begomovirus solanumflavuscontorsionis* | *Tomato yellow leaf distortion virus* | tomato yellow leaf distortion virus | DNA-A: NC\_011348; DNA-B: NC\_017913 |
|  | *Begomovirus solanumflavusmarginis* | *Tomato yellow margin leaf curl virus* | tomato yellow margin leaf curl virus | DNA-A: NC\_005852; DNA-B: NC\_005853 |
|  | *Begomovirus solanumflavusvariati* | *Tomato yellow mottle virus* | tomato yellow mottle virus | DNA-A: NC\_019946; DNA-B: NC\_019947 |
|  | *Begomovirus solanumflavusmaculae* | *Tomato yellow spot virus* | tomato yellow spot virus | DNA-A: NC\_007726; DNA-B: NC\_007727 |
|  | *Begomovirus solanumflavusvenae* | *Tomato yellow vein streak virus* | tomato yellow vein streak virus | DNA-A: NC\_010949; DNA-B: NC\_010950 |
|  | *Begomovirus triumfettae* | *Triumfetta yellow mosaic virus* | Triumfetta yellow mosaic virus | DNA-A: NC\_038983; DNA-B: NC\_040188 |
|  | *Begomovirus mucunaflavi* | *Velvet bean golden mosaic virus* | velvet bean golden mosaic virus | NC\_038985 |
|  | *Begomovirus mucunae* | *Velvet bean severe mosaic virus* | velvet bean severe mosaic virus | DNA-A: NC\_013414; DNA-B: NC\_013415 |
|  | *Begomovirus verbenae* | *Verbena mottle virus* | Verbena mottle virus | DNA-A: NC\_055544; DNA-B: NC\_060099 |
|  | *Begomovirus vernoniae* | *Vernonia crinkle virus* | Vernonia crinkle virus | NC\_032118 |
|  | *Begomovirus vernoniafujianense* | *Vernonia yellow vein Fujian virus* | Vernonia yellow vein Fujian virus | NC\_043514 |
|  | *Begomovirus vernoniavenae* | *Vernonia yellow vein virus* | Vernonia yellow vein virus | NC\_007730 |
|  | *Begomovirus vignae* | *Vigna yellow mosaic virus* | Vigna yellow mosaic virus | NC\_038475 |
|  | *Begomovirus vincae* | *Vinca leaf curl virus* | Vinca leaf curl virus | NC\_028124 |
|  | *Begomovirus citrulli* | *Watermelon chlorotic stunt virus* | watermelon chlorotic stunt virus | DNA-A: NC\_003708; DNA-B: NC\_003709 |
|  | *Begomovirus asystasiaprimi* | *West African Asystasia virus 1* | West African Asystasia virus 1 | DNA-A: NC\_016575; DNA-B: NC\_016576 |
|  | *Begomovirus asystasiasecundi* | *West African Asystasia virus 2* | West African Asystasia virus 2 | NC\_038476 |
|  | *Begomovirus asystasiatertii* | *West African Asystasia virus 3* | West African Asystasia virus 3 | DNA-A: NC\_077803; DNA-B: NC\_077802 |
|  | *Begomovirus bemisiaprimi* | *Whitefly-associated begomovirus 1* | whitefly-asssociated begomovirus 1 | NC\_038967 |
|  | *Begomovirus bemisiasecundi* | *Whitefly-associated begomovirus 2* | whitefly-asssociated begomovirus 2 | NC\_038968 |
|  | *Begomovirus bemisiatertii* | *Whitefly-associated begomovirus 3* | whitefly-asssociated begomovirus 3 | NC\_038969 |
|  | *Begomovirus bemisiaquarti* | *Whitefly-associated begomovirus 4* | whitefly-asssociated begomovirus 4 | NC\_038970 |
|  | *Begomovirus bemisiasexti* | *Whitefly-associated begomovirus 6* | whitefly-asssociated begomovirus 6 | NC\_038971 |
|  | *Begomovirus bemisiaseptimi* | *Whitefly-associated begomovirus 7* | whitefly-asssociated begomovirus 7 | NC\_038972 |
|  | *Begomovirus wissadulae* | *Wissadula golden mosaic virus* | Wissadula golden mosaic virus | DNA-A: NC\_010948; DNA-B: NC\_010951 |
|  | *Begomovirus wissadulaflavi* | *Wissadula yellow mosaic virus* | Wissadula yellow mosaic virus | NC\_031451 |
| *Capulavirus* | *Capulavirus medicagonis* | *Alfalfa leaf curl virus* | Alfalfa leaf curl virus | NC\_027714 |
|  | *Capulavirus euphorbiae* | *Euphorbia caput-medusae latent virus* | Euphorbia caput-medusae latent virus | NC\_075080 |
|  | *Capulavirus phaseoli* | *French bean severe leaf curl virus* | French bean severe leaf curl virus | NC\_018453 |
|  | *Capulavirus plantagonis* | *Plantago lanceolata latent virus* | Plantago lanceolata latent virus | NC\_038477 |
| *Citlodavirus* | *Citlodavirus camelliae* | *Camellia chlorotic dwarf-associated virus* | Camellia chlorotic dwarf-associated virus | NC\_040817 |
|  | *Citlodavirus citri* | *Citrus chlorotic dwarf associated virus* | citrus chlorotic dwarf associated virus | NC\_018151 |
|  | *Citlodavirus broussonetiae* | *Paper mulberry leaf curl virus 2* | paper mulberry leaf curl virus 2 | NC\_076465 |
|  | *Citlodavirus passiflorae* | *Passion fruit chlorotic mottle virus* | passion fruit chlorotic mottle virus | NC\_040706 |
| *Curtovirus* | *Curtovirus betae* | *Beet curly top virus* | beet curly top virus | NC\_001412 |
|  | *Curtovirus armoraciae* | *Horseradish curly top virus* | horseradish curly top virus | NC\_002543 |
|  | *Curtovirus spinaciae* | *Spinach severe curly top virus* | spinach severe curly top virus | NC\_014631 |
| *Eragrovirus* | *Eragrovirus curvulae* | *Eragrostis curvula streak virus* | Eragrostis curvula streak virus | NC\_012664 |
| *Grablovirus* | *Grablovirus vitis* | *Grapevine red blotch virus* | grapevine red blotch virus | NC\_017918 |
|  | *Grablovirus pruni* | *Prunus latent virus* | Prunus geminivirus A | NC\_043533 |
|  | *Grablovirus silvestris* | *Wild Vitis latent virus* | wild Vitis virus 1 | NC\_075437 |
| *Maldovirus* | *Maldovirus mali* | *Apple geminivirus 1* | apple geminivirus 1 | NC\_026760 |
|  | *Maldovirus vitis* | *Grapevine geminivirus A* | grapevine geminivirus A | NC\_031340 |
|  | *Maldovirus junci* | *Juncus maritimus geminivirus 1* | Juncus maritimus geminivirus 1 | NC\_037066 |
| *Mastrevirus* | *Mastrevirus axonopi* | *Axonopus compressus streak virus* | Axonopus compressus streak virus | NC\_023864 |
|  | *Mastrevirus bromi* | *Bromus catharticus striate mosaic virus* | Bromus catharticus striate mosaic virus | NC\_014822 |
|  | *Mastrevirus arietini* | *Chickpea chlorosis Australia virus* | chickpea chlorosis Australia virus | NC\_022131 |
|  | *Mastrevirus cicerosis* | *Chickpea chlorosis virus* | chickpea chlorosis virus | NC\_014740 |
|  | *Mastrevirus cicerparvi* | *Chickpea chlorotic dwarf virus* | chickpea chlorotic dwarf virus | NC\_003493 |
|  | *Mastrevirus rubrumprimi* | *Chickpea redleaf virus* | chickpea redleaf virus | NC\_014739 |
|  | *Mastrevirus rubrumsecundi* | *Chickpea redleaf virus 2* | chickpea redleaf virus 2 | NC\_055579 |
|  | *Mastrevirus flavaparvi* | *Chickpea yellow dwarf virus* | chickpea yellow dwarf virus | NC\_025475 |
|  | *Mastrevirus flavi* | *Chickpea yellows virus* | chickpea yellows virus | NC\_038478 |
|  | *Mastrevirus chloris* | *Chloris striate mosaic virus* | Chloris striate mosaic virus | NC\_001466 |
|  | *Mastrevirus ciliaris* | *Digitaria ciliaris striate mosaic virus* | Digitaria ciliaris striate mosaic virus | NC\_018579 |
|  | *Mastrevirus didactylae* | *Digitaria didactyla striate mosaic virus* | Digitaria didactyla striate mosaic virus | NC\_014547 |
|  | *Mastrevirus digitariae* | *Digitaria streak virus* | Digitaria streak virus | NC\_001478 |
|  | *Mastrevirus erythrodiplaxis* | *Dragonfly-associated mastrevirus* | dragonfly-associated mastrevirus | NC\_075106 |
|  | *Mastrevirus eleusinae* | *Eleusine indica associated virus* | Eleusine indica associated virus | NC\_055572 |
|  | *Mastrevirus eragrostisminoris* | *Eragrostis minor streak virus* | Eragrostis minor streak virus | NC\_015553 |
|  | *Mastrevirus eragrostis* | *Eragrostis streak virus* | Eragrostis streak virus | NC\_010352 |
|  | *Mastrevirus fulleri* | *Maize streak dwarfing virus* | maize streak dwarfing virus | NC\_055519 |
|  | *Mastrevirus bourbonense* | *Maize streak Reunion virus* | maize streak Reunion virus | NC\_017917 |
|  | *Mastrevirus storeyi* | *Maize streak virus* | maize streak virus | NC\_001346 |
|  | *Mastrevirus striatis* | *Maize striate mosaic virus* | maize striate mosaic virus | NC\_040541 |
|  | *Mastrevirus melenis* | *Melenis repens associated virus* | Melenis repens associated virus | NC\_076373 |
|  | *Mastrevirus miscanthi* | *Miscanthus streak virus* | Miscanthus streak virus | NC\_003379 |
|  | *Mastrevirus avenae* | *Oat dwarf virus* | oat dwarf virus | NC\_010799 |
|  | *Mastrevirus panici* | *Panicum streak virus* | Panicum streak virus | NC\_001647 |
|  | *Mastrevirus dilatati* | *Paspalum dilatatum striate mosaic virus* | Paspalum dilatatum striate mosaic virus | NC\_018576 |
|  | *Mastrevirus paspali* | *Paspalum striate mosaic virus* | Paspalum striate mosaic virus | NC\_018530 |
|  | *Mastrevirus oryzaprimi* | *Rice latent virus 1* | rice latent virus 1 | NC\_075432 |
|  | *Mastrevirus oryzasecundi* | *Rice latent virus 2* | rice latent virus 2 | NC\_040537 |
|  | *Mastrevirus sacchari* | *Saccharum streak virus* | Saccharum streak virus | NC\_013464 |
|  | *Mastrevirus sorghi* | *Sorghum arundinaceum associated virus* | Sorghum arundinaceum associated virus | NC\_055573 |
|  | *Mastrevirus sporoboprimi* | *Sporobolus striate mosaic virus 1* | Sporolobus striate mosaic virus 1 | NC\_018577 |
|  | *Mastrevirus sporobosecundi* | *Sporobolus striate mosaic virus 2* | Sporolobus striate mosaic virus 2 | NC\_018578 |
|  | *Mastrevirus saccharumpallidi* | *Sugarcane chlorotic streak virus* | sugarcane chlorotic streak virus | NC\_032004 |
|  | *Mastrevirus saccharumegyptense* | *Sugarcane streak Egypt virus* | sugarcane streak Egypt virus | NC\_001868 |
|  | *Mastrevirus saccharumbourbonense* | *Sugarcane streak Reunion virus* | sugarcane streak Reunion virus | NC\_004755 |
|  | *Mastrevirus saccharofficinari* | *Sugarcane streak virus* | sugarcane streak virus | NC\_003744 |
|  | *Mastrevirus saccharumstriati* | *Sugarcane striate virus* | sugarcane striate virus | NC\_075107 |
|  | *Mastrevirus saccharumalbusvenae* | *Sugarcane white streak virus* | sugarcane white streak virus | NC\_023989 |
|  | *Mastrevirus ipomoeae* | *Sweet potato symptomless virus 1* | sweet potato symptomless virus 1 | NC\_034630 |
|  | *Mastrevirus virgati* | *Switchgrass mosaic-associated virus* | switchgrass mosaic-associated virus | NC\_025834 |
|  | *Mastrevirus tabaci* | *Tobacco yellow dwarf virus* | tobacco yellow dwarf virus | NC\_003822 |
|  | *Mastrevirus urochloae* | *Urochloa streak virus* | Urochloa streak virus | NC\_010797 |
|  | *Mastrevirus tritici* | *Wheat dwarf India virus* | wheat dwarf India virus | NC\_017828 |
|  | *Mastrevirus hordei* | *Wheat dwarf virus* | wheat dwarf virus | NC\_003326 |
| *Mulcrilevirus* | *Mulcrilevirus mori* | *Mulberry crinkle leaf virus* | mulberry crinkle leaf virus | NC\_076144 |
|  | *Mulcrilevirus broussonetiae* | *Paper mulberry leaf curl virus 1* | paper mulberry leaf curl virus 1 | NC\_076464 |
| *Opunvirus* | *Opunvirus opuntiae* | *Opuntia virus 1* | Opuntia virus 1 | NC\_055584 |
| *Topilevirus* | *Topilevirus solani* | *Tomato apical leaf curl virus* | tomato apical leaf curl virus | NC\_076213 |
|  | *Topilevirus lycopersici* | *Tomato geminivirus 1* | tomato geminivirus 1 | NC\_035676 |
| *Topocuvirus* | *Topocuvirus solani* | *Tomato pseudo-curly top virus* | tomato pseudo-curly top virus | NC\_003825 |
| *Turncurtovirus* | *Turncurtovirus sesami* | *Sesame curly top virus* | sesame curly top virus | NC\_076020 |
|  | *Turncurtovirus brassicae* | *Turnip curly top virus* | turnip curly top virus | NC\_014324 |
|  | *Turncurtovirus rapae* | *Turnip leaf roll virus* | turnip leaf roll virus | NC\_029117 |

**References**

1. Fiallo-Olivé E, Lett JM, Martin DP, Roumagnac P, Varsani A, Zerbini FM, Navas-Castillo J (2021) ICTV Virus Taxonomy Profile: Geminiviridae 2021. J Gen Virol 102: 001696.. doi: [10.1099/jgv.0.001696](https://doi.org/10.1099%2Fjgv.0.001696). PMID: [34919512](https://pubmed.ncbi.nlm.nih.gov/34919512)

2. Roumagnac P, Lett JM, Fiallo-Olivé E, Navas-Castillo J, Zerbini FM, Martin DP, Varsani A (2021) Establishment of five new genera in the family Geminiviridae: Citlodavirus, Maldovirus, Mulcrilevirus, Opunvirus, and Topilevirus. Arch Virol 167: 695-710. DOI: [10.1007/s00705-021-05309-2](https://doi.org/10.1007/s00705-021-05309-2) . PMID: **34837111**