

VIRUS GROUPS

Group Name	Type Strain	Shape ¹	No. of Particles	Inclusions ²	Nucleic Acid	Vector	Features	Members in this Handbook
AMV	<i>Alfalfa mosaic virus</i>	Baciliform	4	+	ssRNA	Aphid (nonpersistent)		<i>Alfalfa mosaic virus</i>
Bromovirus	<i>Brome mosaic virus</i>	Isosahedral	3	+ crystalline	ssRNA	Some beetle		
Carlavirus	<i>Carnation latent virus</i>	Flexuous rod	1	+ various types	ssRNA	Aphid (nonpersistent)	Narrow host range	<i>Blackberry calico virus</i> <i>Lily symptomless virus</i> <i>Blueberry scorch virus</i> <i>Potato virus M</i> <i>Potato virus S</i>
Caulimovirus	<i>Cauliflower mosaic virus</i>	Isometric	1	+	dsDNA	Aphid (nonpersistent)	Narrow host range	<i>Blueberry red ringspot virus</i> <i>Dahlia mosaic virus</i> <i>Strawberry vein-banding virus</i>
Closterovirus	<i>Beet yellows virus</i>	Filamentous rod	1	+ in phloem	ssRNA	Aphid (semipersistent)		<i>Beet yellows virus</i>
Comovirus	<i>Cowpea mosaic virus</i>	Isometric	2	+ vacuolate and crystalloid	ssRNA	Beetle	Narrow host range	
Cucumovirus	<i>Cucumber mosaic virus</i>	Isometric	3	+ in mesophyll	sRNA	Aphid (nonpersistent), Sap		<i>Cucumber mosaic virus</i>
Dianthovirus	<i>Carnation ringspot virus</i>	Isometric	2	+	ssRNA			
Enamovirus	<i>Pea enation mosaic virus</i>	Isometric	2	+ in phloem	ssRNA	Aphid (persistent)		<i>Pea enation mosaic virus</i>
Geminivirus	<i>Maize streak virus</i>	Double particle	1	+ in phloem	ssDNA			<i>Beet curly top virus</i>
Hordeivirus	<i>Barley stripe mosaic</i>	Rod	3		ssRNA			<i>Barley stripe mosaic virus</i>
Ideaovirus	<i>Raspberry bushy dwarf virus</i>	Isometric	3		ssRNA	Pollen		<i>Raspberry bushy dwarf virus</i>
Ilarvirus	<i>Tobacco streak virus</i>	Isometric	3	+	ssRNA	Pollen, Seed (transmission mediated by honeybees)		<i>Apple mosaic virus</i> <i>Blueberry shock ilarvirus</i> <i>Prune dwarf virus</i> <i>Prunus necrotic ringspot virus</i> <i>Tobacco streak virus</i>
Luteovirus	<i>Barley Yellow Dwarf Virus</i>	Isometric	1	+ in phloem	ssRNA	Aphid (persistent)		<i>Barley yellow dwarf virus</i> <i>Bean leaf roll virus</i> <i>Beet western yellows virus</i> <i>Carrot red leaf virus</i> <i>Potato leafroll virus</i>
MCDV	<i>Maize Chlorotic Dwarf Virus</i>	Isometric	1		ssRNA			
Necrovirus	<i>Tobacco necrosis virus</i>	Isometric	1		ssRNA	Fungus		<i>Olpidium brassicae</i>
Nepovirus	<i>Tobacco ringspot virus</i>	Isometric	3		ssRNA	Nematode (<i>Xiphinema</i> , <i>Longidorus</i>), Seed, Pollen		<i>Cherry leafroll virus</i> <i>Cherry rasp leaf virus</i> <i>Grapevine fanleaf virus</i> <i>Tobacco ringspot virus</i> <i>Tomato ringspot virus</i>
						Aphid		<i>Strawberry mottle virus</i>

VIRUS GROUPS—CONTINUED

Group Name	Type Strain	Shape ¹	No. of Particles	Inclusions ²	Nucleic Acid	Vector	Features	Members in this Handbook
Potexvirus	<i>Potato virus X</i>	Flexuous rod	1	+ <i>large-banded or dense bodies and paracrystals</i>	ssRNA	None (may be fungal)	Narrow host range	<i>Cymbidium mosaic virus</i> <i>Hydrangea ringspot virus</i> <i>Potato virus X</i>
						Aphid		<i>Strawberry mild yellow-edge potexvirus</i>
Potyvirus	<i>Potato virus Y</i>	Flexuous rod	1	+ <i>conical or cylindrical (pinwheel)</i>	ssRNA	Aphid (nonpersistent)		<i>Bean common mosaic virus</i> <i>Bean yellow mosaic virus</i> <i>Dasheen mosaic virus</i> <i>Lettuce mosaic virus</i> <i>Maize dwarf mosaic virus</i> <i>Potato virus A</i> <i>Potato virus Y</i> <i>Tobacco etch virus</i> <i>Tulip breaking virus</i> <i>Zucchini yellow mosaic virus</i>
						Mite (eriophyid)		<i>Wheat streak mosaic virus</i>
Reoviridae	<i>Wound tumor virus</i>	Isometric	1	+	dsRNA			
Rhabdoviridae	<i>Lettuce necrotic yellows virus</i>	Bacilliform	1	+	ssRNA (-)	Aphid, Leafhopper	Envelope	
Sobemovirus	<i>Southern bean mosaic virus</i>	Isometric	1		ssRNA	Beetle		<i>Cocksfoot mottle virus</i>
Tobamovirus	<i>Tobacco mosaic virus</i>	Tubular rod	1	+ <i>hexagonal, stacked, or rounded plates</i>	ssRNA	None	Mechanical transmission	<i>Tobacco mosaic virus</i>
Tobravirus	<i>Tobacco rattle virus</i>	Rod	2	(+) <i>disappears in older infections</i>	ssRNA	Nematode	Wide host range	<i>Tobacco rattle virus</i>
Tombusvirus	<i>Tomato bushy stunt virus</i>	Isometric	1	+	ssRNA	Unknown, but soilborne	Narrow natural host range	
Tospovirus	<i>Tomato spotted wilt virus</i>	Isometric	1	+	ssRNA	Thrips	Envelope; wide host range	<i>Tomato spotted wilt virus</i> <i>Impatiens necrotic spot virus</i>
Tymovirus	<i>Turnip yellow mosaic virus</i>	Isometric	1	+	ssRNA	Beetle (leaf-eating)	Narrow host range	

¹ Possible EM diagnosis if rod-shaped.

² Possible EM or Light Microscope diagnosis if present and stained correctly.

Reference Christie, R.G. and Edwardson, J.R. 1994. Light and Electron Microscopy of Plant Virus Inclusions. Florida Agricultural Experiment Station Monograph Series, No. 9, rev.