

# Recommended Codes for Pest Organisms in Vegetable Crops

January 2022  
Subject to annual review

Adopted by the ISF Expert Group Disease Resistance Terminology

## CROPS

- [\*Abelmoschus esculentus\*](#) (Okra)  
[\*Allium ampeloprasum\*](#) and [\*A. cepa\*](#) (Leek and Onion)  
[\*Apium graveolens\*](#) (Celery and Celeriac)  
[\*Benincasa hispida\*](#) (Wax gourd)  
[\*Beta vulgaris\*](#) (Table beet and Swiss chard)  
[\*Brassicacae\*](#) (Cabbage, Broccoli, Cauliflower, Chinese cabbage...)  
[\*Capsicum annuum\*](#) (Pepper)  
[\*Citrullus lanatus\*](#) (Watermelon)  
[\*Cucumis melo\*](#) (Melon)  
[\*Cucumis sativus\*](#) (Cucumber)  
[\*Cucurbita pepo\*](#), [\*C. maxima\*](#), [\*C. moschata\*](#) (Squash and pumpkin)  
[\*Diptaxis tenuifolia\*](#) (Wild rocket)  
[\*Daucus carota\*](#) var. [\*sativa\*](#) (Carrot)  
[\*Eruca vesicaria\*](#) subsp. [\*sativa\*](#) (Arugula)  
[\*Lactuca sativa\*](#) (Lettuce)  
[\*Lagenaria siceraria\*](#) (Bottle gourd)  
[\*Luffa acutangula\*](#) (Ridge gourd)  
[\*Luffa cylindrica\*](#) (Sponge gourd)  
[\*Mormodica charantia\*](#) (Bittergourd)  
[\*Ocimum basilicum\*](#) (Basil)  
[\*Petroselinum crispum\*](#) (Parsley)  
[\*Phaseolus vulgaris\*](#) (Dwarf and climbing French bean)  
[\*Pisum sativum\*](#) (Garden pea)  
[\*Raphanus sativus\*](#) (Radish)  
[\*Solanum integrifolium\*](#) (Eggplant/Aubergine rootstock)  
[\*Solanum lycopersicum\*](#) (Ex *Lycopersicon esculentum*) (Tomato)  
[\*Solanum melongena\*](#) (Eggplant/Aubergine)  
[\*Solanum torvum\*](#) (Eggplant/Aubergine rootstock)  
[\*Spinacia oleracea\*](#) (Spinach)  
[\*Valerianella locusta\*](#) (Corn salad)  
[\*Zea mays\*](#) (sweet corn)

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**1. *Abelmoschus esculentus* (Okra)**

Scientific name	English common name	Code
<b>Viruses</b>		
<sup>1</sup> <i>Okra yellow vein mosaic virus (now Bhendi yellow vein mosaic virus) /2026</i>	Okra yellow vein mosaic/Bhendi yellow vein mosaic virus	OYVMV (now BYVMV)
<b>Insects</b>		
<i>Amarasca biguttula</i>	Leaf hopper	Ab

**2. *Alliums* - *A. ampeloprasum* and *A. cepa* (Leek and Onion)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Leek yellow stripe virus</i>	Leek yellow stripe	LYSV
<b>Bacteria</b>		
<i>Pseudomonas syringae</i> pv. <i>porri</i>	Pseudomonas leek blight	Psp
<b>Fungi</b>		
<i>Alternaria porri</i>	Purple blotch	Ap
<i>Botrytis allii</i>	Botrytis neck rot	Ba
<i>Botrytis squamosa (now Botryotinia squamosa) /2026</i>	Botrytis leaf blight	Bs
<i>Colletotrichum gloeosporioides</i>	Twister	Cg
<i>Fusarium oxysporum</i> f.sp. <i>cepae</i>	Basal rot	Foc
<i>Peronospora destructor</i>	Downy mildew	Pd
<i>Phytophthora nicotianae</i>	Phytophthora neck and bulb rot	Pn
<i>Phytophthora porri</i>	White tip of leek	Php
<i>Puccinia allii</i>	Rust	Pa
<i>Puccinia porri</i>	Rust	Pup
<i>Pyrenochaeta terrestris (now Setophoma terrestris)/2026</i>	Pink root	Pt (now St)
<i>Sclerotium cepivorum (now Stromatinia cepivora) /2026</i>	White rot	Sc
<b>Insects</b>		
<i>Thrips tabaci</i>	Onion thrips	Tt
<b>Nematodes</b>		
<i>Ditylenchus dipsaci</i>	Stem and bulb nematode	Dd

<sup>1</sup> **End of the transition period for the name change. The transition from one step to the next is three years to allow companies and their customers worldwide to become accustomed to the change.**

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**3. *Apium graveolens* (Celery and Celeriac)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Celery mosaic virus</i>	Celery mosaic	CeMV
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>apii</i>	Fusarium yellows and wilt	Foa
<i>Septoria apiicola</i>	Late blight	Sa

**4. *Benincasa hispida* (Wax gourd)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucurbit aphid-borne yellows virus</i>	Cucurbit aphid-borne yellows virus	CABYV
<i>Cucumber green mottle mosaic virus</i>	Cucumber green mottle mosaic virus	CGMMV
<i>Cucumber mosaic virus</i>	Cucumber virus 1	CMV
<i>Papaya ringspot virus</i>	Papaya ringspot virus	PRSV
<i>Tomato Leaf Curl New Delhi Virus</i>	Tomato leaf curl	ToLCNDV
<i>Watermelon silver mottle virus</i>	Watermelon silver mottle virus	WSMoV
<i>Zucchini yellow mosaic virus</i>	Zucchini yellow mosaic virus	ZYMV
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>lagenariae</i>	Fusarium wilt	Fol
<i>Fusarium oxysporum</i> f.sp. <i>niveum</i>	Fusarium wilt	Fon
<i>Fusarium oxysporum</i> f.sp. <i>radicis-cucumerinum</i>	Root and stem rot	For

**5. *Beta vulgaris* (Table beet and Swiss chard)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Beet curly top virus</i>	Beet curly top	BCTV
<i>Beet necrotic yellow vein virus</i>	Rhizomania	BNYVV
<b>Bacteria</b>		
<i>Pseudomonas syringae</i> pv. <i>aptata</i>	Bacterial blight	Psa
<i>Streptomyces scabies</i>	Common scab	Ss
<b>Fungi</b>		
<i>Cercospora beticola</i>	Leaf spot	Cb
<i>Colletotrichum dematium</i> f.sp. <i>spinaciae</i> (now <i>Colletotrichum dematium</i> ) / 2026	Anthracnose	Cds (now Cd)
<i>Fusarium oxysporum</i> f.sp. <i>betae</i>	Fusarium yellows	Fob

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<i>Pythium aphanidermatum</i>	Pythium root rot	Pa
<i>Phoma betae</i> (now <i>Pleospora bjoerlingii</i> )/2026	Phoma root rot, Leaf spot	Pb
<i>Peronospora farinosa</i> f.sp. <i>betae</i> (now <i>Peronospora schachtii</i> ) / 2026	Downy mildew	Pfb (now Ps)
<i>Ramularia beticola</i>	Ramularia leaf spot	Ra
<i>Rhizoctonia solani</i>	Rhizoctonia root and crown rot	Rs
<i>Verticillium albo-atrum</i>	Verticillium wilt	Va
<i>Verticillium dahliae</i>	Verticillium wilt	Vd

**6. Brassicas (Cabbage, Broccoli, Cauliflower, Chinese cabbage)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cauliflower mosaic virus</i>	Cauliflower mosaic	CaMV
<i>Turnip mosaic virus</i>	Turnip mosaic	TuMV
<b>Bacteria</b>		
<i>Pseudomonas syringae</i> pv. <i>maculicola</i>	Bacterial leaf spot, Peppery leaf spot	Psm
<i>Xanthomonas campestris</i> pv. <i>campestris</i>	Black rot	Xcc
<b>Fungi</b>		
<i>Albugo candida</i>	White rust	Ac
<i>Albugo macrospora</i> (now <i>Albugo candida</i> ) /2026	White rust	Am (now Ac)
<i>Alternaria brassicae</i>	Black spot	Abe
<i>Alternaria brassicicola</i>	Black spot	Aba
<i>Erysiphe cruciferarum</i>	Powdery mildew	Ec
<i>Fusarium oxysporum</i> f.sp. <i>conglutinans</i>	Fusarium yellows	Foc
<i>Fusarium oxysporum</i> f.sp. <i>rapae</i>	Fusarium yellows	Foa
<sup>2</sup> <i>Hyaloperonospora brassicae</i> (ex <i>Peronospora</i> / <i>Hyaloperonospora parasitica</i> subsp. <i>brassicae</i> /2023	Downy mildew	Hb (ex Pp/ Hp)
<i>Mycosphaerella brassicicola</i>	Ring spot	Mb
<i>Leptosphaeria maculans</i> (anamorph: <i>Phoma lingam</i> )	Black leg	Lm
<i>Plasmodiophora brassicae</i>	Clubroot	Pb
<i>Verticillium albo-atrum</i>	Verticillium wilt	Va
<i>Verticillium dahliae</i>	Verticillium wilt	Vd
<i>Verticillium longisporum</i>	Verticillium wilt	Vl
<b>Insects</b>		
<i>Brevicoryne brassicae</i>	Cabbage aphid	Bb
<i>Plutella xylostella</i>	Diamond back moth	Px
<i>Thrips tabaci</i>	Thrips	Tt

<sup>2</sup> *Hyaloperonospora parasitica* subs. *brassicae* is currently and widely known as *H. brassicae*. *H. parasitica* is a pathogen with a host range different to cultivated Brassicas.

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**7. *Capsicum annuum* (Pepper)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Chili veinal mottle virus</i>	Chili veinal mottle	ChiVMV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Paprika mild mottle virus</i>	Paprika mild mottle	PaMMV
<i>Pepper mild mottle virus</i>	Pepper mild mottle	PMMoV
<i>Pepper mottle virus</i>	Pepper mottle	PepMoV
<i>Pepper yellow mosaic virus</i>	Pepper yellow mosaic	PepYMV
<i>Potato virus Y</i>	Potato virus Y	PVY
<i>Tomato brown rugose fruit virus</i>	Tomato brown rugose fruit	ToBRFV
<i>Tobacco etch virus</i>	Tobacco etch	TEV
<i>Tobacco mild green mosaic virus</i>	Tobacco mild green mosaic	TMGMV
<i>Tobacco mosaic virus</i>	Tobacco mosaic	TMV
<i>Tomato mosaic virus</i>	Tomato mosaic	ToMV
<i>Tomato spotted wilt virus</i>	Tomato spotted wilt	TSWV
<b>Bacteria</b>		
<sup>3</sup> <i>Ralstonia solanacearum</i>	Bacterial wilt	Rs
<sup>4</sup> <i>Xanthomonas campestris</i> pv. <i>vesicatoria</i> (now <i>Xanthomonas</i> spp) /2026	Bacterial spot	Xcv (now X spp)
<b>Fungi</b>		
<i>Colletotrichum acutatum</i>	Anthraxnose	Ca
<i>Colletotrichum capsici</i> (now <i>Colletotrichum truncatum</i> ) / 2026	Anthraxnose	Cc (now Ct)
<i>Colletotrichum gloeosporioides</i>	Anthraxnose	Cg
<i>Fusarium oxysporum</i> f.sp. <i>capsici</i>	Fusarium wilt	Foc
<i>Leveillula taurica</i> (anamorph: <i>Oidiopsis sicula</i> )	Powdery mildew	Lt
<i>Phytophthora capsici</i>	Phytophthora crown and root rot	Pc
<b>Nematodes</b>		
<i>Meloidogyne arenaria</i>	Root-knot	Ma
<i>Meloidogyne incognita</i>	Root-knot	Mi
<i>Meloidogyne javanica</i>	Root-knot	Mj

**8. *Citrullus lanatus* (Watermelon)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucumber vein yellowing virus</i>	Cucumber vein yellowing	CVYV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Papaya ringspot virus</i>	Papaya ringspot	PRSV

<sup>3</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

<sup>4</sup> Taxonomic studies on the bacteria causing bacterial spot on tomato and pepper have shown there are four different species (*Xanthomonas euvesicatoria*, *X. vesicatoria*, *X. perforans* and *X. gardneri*) that cannot be differentiated by pathogenicity as they all cause very similar symptoms. As resistance in tomato and pepper to bacterial spot is based on races that go across these species we proposed to not specify the species but to keep the general name-

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<i>Squash leaf curl virus</i>	Squash leaf curl	SLCV
<i>Watermelon mosaic virus</i>	Watermelon mosaic	WMV
<i>Zucchini yellow mosaic virus</i>	Zucchini yellow mosaic	ZYMV
<b>Fungi</b>		
<i>Colletotrichum orbiculare</i>	Anthraco-nose	Co
<i>Fusarium oxysporum</i> f.sp. <i>niveum</i>	Fusarium wilt	Fon
<i>Podosphaera xanthii</i>	Powdery mildew	Px

**9. Cucumis melo (Melon)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucumber green mottle mosaic virus</i>	Cucumber green mottle	CGMMV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Cucumber vein yellowing virus</i>	Cucumber vein yellowing	CVYV
<i>Cucurbit yellow stunting disorder virus</i>	Cucurbit yellow stunting disorder	CYSDV
<i>Melon necrotic spot virus</i>	Melon necrotic spot	MNSV
<i>Moroccan watermelon mosaic virus</i>	Moroccan watermelon mosaic	MWMV
<i>Papaya ringspot virus</i>	Papaya ringspot	PRSV
<i>Squash leaf curl virus</i>	Squash leaf curl	SLCV
<i>Squash mosaic virus</i>	Squash mosaic	SqMV
<i>Tomato leaf curl New Delhi virus</i>	Tomato leaf curl New Delhi	ToLCNDV
<i>Watermelon mosaic virus</i>	Watermelon mosaic	WMV
<i>Zucchini yellow mosaic virus</i>	Zucchini yellows	ZYMV
<b>Fungi</b>		
<i>Golovinomyces cichoracearum</i>	Powdery mildew	Gc
<i>Fusarium oxysporum</i> f.sp. <i>melonis</i>	Fusarium wilt	Fom
<i>Pseudoperonospora cubensis</i>	Downy mildew	Pcu
<i>Podosphaera xanthii</i>	Powdery mildew	Px
<b>Insects</b>		
<i>Aphis gossypii</i>	Cotton aphid	Ag

**10. Cucumis sativus (Cucumber)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Beet pseudoyellows virus</i>	Beet pseudoyellows virus	BPYV
<i>Cucumber green mottle mosaic virus</i>	Cucumber green mottle	CGMMV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Cucumber vein yellowing virus</i>	Cucumber vein yellowing	CVYV
<i>Cucurbit yellow stunting disorder virus</i>	Cucurbit yellow stunting disorder	CYSDV
<i>Kyuri green mottle mosaic virus</i>	Kyuri green mottle	KGMMV
<i>Papaya ringspot virus</i>	Papaya ringspot	PRSV
<i>Squash leaf curl virus</i>	Squash leaf curl	SLCV
<i>Tomato leaf curl New Delhi virus</i>		ToLCNDV
<i>Watermelon mosaic virus</i>	Watermelon mosaic	WMV

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<i>Zucchini yellow mosaic virus</i>	Zucchini yellows	ZYMV
<b>Bacteria</b>		
<i>Erwinia tracheiphila</i>	Bacterial wilt	Et
<i>Pseudomonas syringae</i> pv. <i>lachrymans</i>	Angular leaf spot	PsI
<b>Fungi</b>		
<i>Cladosporium cucumerinum</i>	Scab and gummosis	Ccu
<i>Colletotrichum orbiculare</i>	Anthrachnose	Co
<i>Corynespora cassiicola</i>	Corynespora blight and target spot	Cca
<i>Golovinomyces cichoracearum</i>	Powdery mildew	Gc
<i>Fusarium oxysporum</i> f.sp. <i>radicis-cucumerinum</i>	Fusarium crown and root rot	For
<i>Pythium aphanidermatum</i>	Damping off , Pythium fruit rot (cottony leak)	Pa
<i>Pseudoperonospora cubensis</i>	Downy mildew	Pcu
<i>Podosphaera xanthii</i>	Powdery mildew	Px

**11. Cucurbita pepo, C. maxima, C. moschata (Squash and pumpkin)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Luffa yellow mosaic virus</i>	Luffa yellow mosaic	LYMV
<i>Papaya ringspot virus</i>	Papaya ringspot	PRSV
<i>Squash leaf curl virus</i>	Squash leaf curl	SLCV
<i>Squash mosaic virus</i>	Squash mosaic	SqMV
<i>Tomato leaf curl New Delhi virus</i>		ToLCNDV
<i>Watermelon mosaic virus</i>	Watermelon mosaic	WMV
<i>Moroccan watermelon mosaic virus</i>	Moroccan watermelon mosaic	MWMV
<i>Zucchini yellow mosaic virus</i>	Zucchini yellows	ZYMV
<b>Fungi</b>		
<i>Golovinomyces cichoracearum</i>	Powdery mildew	Gc
<i>Fusarium oxysporum</i> f.sp. <i>cucumerinum</i>	Fusarium wilt	Foc
<i>Fusarium oxysporum</i> f.sp. <i>lagenariae</i>	Fusarium wilt	Fol
<i>Fusarium oxysporum</i> f.sp. <i>melonis</i>	Fusarium wilt	Fom
<i>Fusarium oxysporum</i> f.sp. <i>niveum</i>	Fusarium wilt	Fon
<i>Fusarium oxysporum</i> f.sp. <i>radicis-cucumerinum</i>	Root and stem rot	For
<i>Fusarium solani</i> f.sp. <i>cucurbitae</i>	Crown and root rot	Fsc
<i>Phomopsis sclerotoides</i> (now <i>Diaporthe sclerotoides</i> ) /2026	Black root rot	Ps (now Ds)
<i>Pythium aphanidermatum</i>	Damping off, Pythium fruit rot (cottony leak)	Pa
<i>Phytophthora capsici</i>	Phytophthora crown and root rot	Pc
<i>Pseudoperonospora cubensis</i>	Downy mildew	Pcu
<i>Podosphaera xanthii</i>	Powdery mildew	Px

**12. Daucus carota var. sativa (Carrot)**

Scientific name	English common name	Code
<b>Bacteria</b>		

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<i>Xanthomonas hortorum</i> pv. <i>carotae</i>	Bacterial leaf blight	Xhc
<b>Fungi</b>		
<i>Alternaria dauci</i>	Alternaria leaf blight	Ad
<i>Alternaria radicina</i>	Black rot	Ar
<i>Cercospora carotae</i>	Cercospora leaf blight	Cc
<i>Erysiphe heraclei</i>	Powdery mildew	Eh
<i>Pythium sulcatum</i>	Cavity spot	Ps
<i>Pythium ultimum</i> (now <i>Globisporangium ultimum</i> ) /2026	Cavity spot	Pu (now Gu)
<i>Pythium violae</i> (now <i>Globisporangium violae</i> ) / 2026	Cavity spot	Pv (now Gv)
<b>Insects</b>		
<i>Psila rosae</i>	Carrot fly	Pr
<b>Nematodes</b>		
<i>Meloidogyne incognita</i>	Root-knot	Mi
<i>Meloidogyne javanica</i>	Root-knot	Mj
<b>Phytoplasmas</b>		
Aster yellows	Aster yellows	Ay
<b>13. <i>Diplotaxis tenuifolia</i> (Wild rocket)</b>		
<b>Scientific name</b>	<b>English common name</b>	<b>Code</b>
<b>Fungi</b>		
<i>Hyaloperonospora parasitica</i>	Downy mildew	Hp
<b>14. <i>Eruca vesicaria</i> subsp. <i>sativa</i> (Arugula)</b>		
<b>Scientific name</b>	<b>English common name</b>	<b>Code</b>
<b>Fungi</b>		
<i>Hyaloperonospora parasitica</i>	Downy mildew	Hp
<b>15. <i>Lactuca sativa</i> (Lettuce)</b>		
<b>Scientific name</b>	<b>English common name</b>	<b>Code</b>
<b>Viruses</b>		
<i>Beet western yellows virus</i>	Yellows	BWYV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Lettuce necrotic stunt virus</i> (now <i>Moroccan pepper virus</i> ) /2027	Lettuce die-back	LNSV (now MPV)
<i>Lettuce mosaic virus</i>	Lettuce mosaic	LMV
<i>Mirafiori lettuce big-vein virus</i>	Lettuce big vein	MLBVV
<i>Tomato bushy stunt virus</i>	Lettuce die-back	TBSV
<i>Tomato spotted wilt virus</i>	Spotted wilt	TSWV
<b>Bacteria</b>		
<i>Pseudomonas cichorii</i>	Bacterial rot	Pc
<sup>5</sup> <i>Rhizorhapis suberifaciens</i> (ex <i>Sphingomonas suberifaciens</i> ) /2025	Corky root	Ss (now Rs)

<sup>5</sup> A recent review article in 2015 uses the new genus name *Rhizorhapis* based on work published in 2014 on the reclassification of the pathogen causing lettuce corky root



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<i>Xanthomonas campestris</i> pv. <i>vitians</i> (now <i>Xanthomonas axonopodis</i> pv. <i>vitians</i> ) /2026	Bacterial spot	Xcv (now Xav)
<b>Fungi</b>		
<i>Bremia lactucae</i>	Downy mildew	Bl
<i>Fusarium oxysporum</i> f.sp. <i>lactucae</i>	Fusarium wilt	Fol
<i>Microdochium panattonianum</i>	Anthraco-nose	Mpa
<b>Insects</b>		
<i>Macrosiphum euphorbiae</i>	Potato aphid	Me
<i>Myzus persicae</i>	Green peach aphid	Mpe
<i>Nasonovia ribisnigri</i>	Lettuce leaf aphid	Nr
<i>Pemphigus bursarius</i>	Lettuce root aphid	Pb

**16. *Lagenaria siceraria* (Bottle gourd)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucumber green mottle mosaic virus</i>	Cucumber green mottle	CGMMV
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>lagenariae</i>	Fusarium wilt	Fol
<i>Fusarium oxysporum</i> f.sp. <i>niveum</i>	Fusarium wilt	Fon
<i>Fusarium oxysporum</i> f.sp. <i>radicis-cucumerinum</i>	Root and stem rot	For

**17. *Luffa acutangula* (Ridge gourd)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Tomato Leaf Curl New Delhi Virus</i>	Tomato Leaf Curl	ToLCNDV
<b>Bacteria</b>		
<sup>6</sup> <i>Ralstonia solanacearum</i> race 1, biovar 3	Bacterial wilt	Rs

**18. *Luffa cylindrica* (Sponge gourd)**

Scientific name	English common name	Code
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f. sp. <i>luffae</i>	Fusarium wilt	Fol
<i>Pseudoperonospora cubensis</i>	Downy mildew	Pc
<b>Bacteria</b>		
<sup>7</sup> <i>Ralstonia solanacearum</i>	Bacterial wilt	Rs

(<https://www.microbiologyresearch.org/content/journal/ijsem/10.1099/ijms.0.058909-0>,  
<http://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS-09-14-0953-FE>) .

<sup>6</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

<sup>7</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

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**19. Momordica charantia (Bittergourd)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucurbit aphid-borne yellows virus</i>	Cucurbit aphid-borne yellows virus	CABYV
<i>Cucumber mosaic virus</i>	Cucumber virus 1	CMV
<i>Papaya ring spot virus</i>	Papaya ringspot	PRSV
<i>Tomato Leaf Curl New Delhi Virus</i>	Tomato Leaf Curl	ToLCNDV
<i>Zucchini yellow mosaic virus</i>	Yellow mosaic	ZYMV
<b>Fungi</b>		
<i>Podosphaera xanthii</i>	Powdery Mildew	Px

**20. Ocimum basilicum (Basil)**

Scientific name	English common name	Code
<b>Fungi</b>		
<i>Fusarium oxysporum f.sp. basilicum (now Fusarium oxysporum f.sp. basilici) /2026</i>	Fusarium wilt	Fob
<i>Peronospora belbahrii</i>	Downy mildew	Pb

**21. Petroselinum crispum (Parsley)**

Scientific name	English common name	Code
<b>Fungi</b>		
<i>Plasmopara petroselini</i>	Downy mildew	Pp
<i>Septoria petroselini</i>	Septoria blight	Sp

**22. Phaseolus vulgaris (Dwarf and climbing French bean)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Bean common mosaic virus</i>	Bean common mosaic	BCMV
<i>Bean common mosaic necrosis virus</i>	Bean common mosaic necrosis	BCMNV
<i>Beet curly top virus</i>	Beet curly top	BCTV
<i>Bean golden mosaic virus</i>	Bean golden mosaic	BGMV
<i>Bean golden yellow mosaic virus</i>	Bean golden yellow mosaic	BGYMV
<i>Beet mild curly top virus (now Beet curly top virus) /2026</i>	Beet curly top	BMCTV (now BCTV)
<i>Beet severe curly top virus (now Beet curly top virus) /2026</i>	Beet curly top	BSCTV (now BCTV)
<i>Bean yellow disorder virus</i>	Bean yellow disorder virus	BnYDV
<i>Bean yellow mosaic virus</i>	Bean yellow mosaic	BYMV
<i>Southern bean mosaic virus</i>	Bean southern virus	SBMV
<i>Cucumber mosaic virus</i>	Cucumber virus	CMV
<b>Bacteria</b>		
<i>Pseudomonas savastanoi pv. phaseolicola</i>	Halo blight	Psp
<i>Pseudomonas syringae pv. syringae</i>	Bacterial brown spot	Pss

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<sup>8</sup> <i>Xanthomonas axonopodis</i> pv. <i>phaseoli</i>	Common or fuscous blight	Xap
<b>Fungi</b>		
<i>Aphanomyces euteiches</i>	Root rot	Ae
<i>Colletotrichum lindemuthianum</i>	Anthraco-nose	Cl
<i>Fusarium oxysporum</i> f.sp. <i>phaseoli</i>	Fusarium wilt	Fop
<i>Fusarium solani</i> f.sp. <i>phaseoli</i>	Fusarium root rot	Fsp
<i>Sclerotinia sclerotiorum</i>	White mold	Ss
<i>Uromyces appendiculatus</i>	Rust	Ua

**23. *Pisum sativum* (Garden pea)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Bean leafroll virus</i>	Pea leaf roll, pea top yellows	BLRV
<i>Bean yellow mosaic virus</i>	Bean yellow mosaic	BYMV
<i>Pea enation mosaic virus</i>	Pea enation mosaic	PEMV
<i>Pea seed-borne mosaic virus</i>	Pea seed-borne mosaic	PSbMV
<b>Bacteria</b>		
<i>Pseudomonas syringae</i> pv. <i>pisi</i>	Bacterial blight	Psp
<b>Fungi</b>		
<i>Aphanomyces euteiches</i>	Aphanomyces root rot	Ae
<i>Ascochyta pisi</i> (now <i>Didymella pisi</i> ) /2026	Ascochyta leaf and pod spot	Aps (now Dp)
<i>Ascochyta pinodella</i> (now <i>Didymella pinodella</i> ) /2026	Leaf spot and foot rot	Apn (now Dpn)
<i>Botrytis cinerea</i>	Grey mold	Bc
<i>Erysiphe pisi</i>	Powdery mildew	Ep
<i>Fusarium oxysporum</i> f.sp. <i>pisi</i>	Near wilt	Fop
<i>Fusarium solani</i> (now <i>Neocosmospora solani</i> ) / 2026	Fusarium root rot	Fs (now Ns)
<i>Mycosphaerella pinodes</i> (now <i>Didymella pinodes</i> ) /2026	Ascochyta blight	Mp (now Dp)
<i>Peronospora viciae</i>	Downy mildew	Pv

**24. *Raphanus sativus* (Radish)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Turnip mosaic virus</i>	Turnip mosaic	TuMV
<b>Bacteria</b>		

<sup>8</sup> Although *Xanthomonas axonopodis* pv. *phaseoli* and *X. fuscans* subsp. *fuscans* (Xff) (formely *X. axonopodis* pv. *phaseoli* var. *fuscans*) are taxonomically different bacterial species that are the causal agents of common bacterial blight, it is not possible to differentiate them based on symptoms under natural conditions and there is no evidence that resistance to these two species in bean differ.

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<i>Pseudomonas syringae</i> pv. <i>maculicola</i>	Bacterial leaf spot, Peppery leaf spot	Psm
<b>Fungi</b>		
<i>Albugo candida</i>	White rust	Ac
<i>Aphanomyces raphani</i>	Black root	Ar
<i>Fusarium oxysporum</i> f.sp. <i>raphani</i>	Yellows	For
<i>Hyaloperonospora brassicae</i> (ex <i>Peronospora</i> / <i>Hyaloperonospora parasitica</i> ) / 2027	Downy mildew	Hb (ex Pp/ Hp)
<i>Plasmodiophora brassicae</i>	Clubroot	Pb
<i>Rhizoctonia solani</i>	Rhizoctonia scurf	Rs

**25. *Solanum integrifolium* (Eggplant rootstock)**

Scientific name	English common name	Code
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>melongenae</i>	Fusarium wilt	Fom

**26. <sup>9</sup>*Solanum lycopersicum* (ex *Lycopersicon esculentum*) (Tomato)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Beet curly top virus</i>	Curly top	BCTV
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<i>Groundnut ringspot virus</i>	Groundnut ringspot	GRSV
<i>Pepino mosaic virus</i>	Pepino mosaic	PepMV
<i>Tobacco mosaic virus</i>	Tobacco mosaic	TMV
<i>Tomato apex necrosis virus</i> (now <i>Tomato marchitez virus</i> ) /2026	Tomato apex necrosis	ToANV (now ToMarV)
<i>Tomato brown rugose fruit virus</i>	Tomato brown rugose fruit	ToBRFV
<i>Tomato chlorotic spot virus</i>	Tomato chlorotic spot	TCSV
<i>Tomato mosaic virus</i>	Tomato mosaic	ToMV
<i>Tomato torrado virus</i>	Tomato torrado	ToTV
<i>Tomato spotted wilt virus</i>	Tomato spotted wilt	TSWV
<i>Tomato yellow leaf curl virus</i>	Tomato yellow leaf curl	TYLCV <sup>10</sup>
<b>Bacteria</b>		
<i>Clavibacter michiganensis</i> subsp. <i>michiganensis</i>	Bacterial canker	Cmm

<sup>9</sup> Some of the codes also apply for tomato rootstocks.

<sup>10</sup> [Explanatory note to clarify the situation of TYLCV and TYLCD associated viruses](#)

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<i>Pseudomonas corrugata</i>	Pith necrosis	Pc
<i>Pseudomonas syringae</i> pv. <i>tomato</i>	Bacterial speck	Pst
<sup>11</sup> <i>Ralstonia solanacearum</i>	Bacterial wilt	Rs
<sup>12</sup> <i>Xanthomonas campestris</i> pv. <i>vesicatoria</i> (now <i>Xanthomonas</i> spp) /2026	Bacterial spot	Xcv (now X spp)
<b>Fungi</b>		
<i>Alternaria alternata</i> f.sp. <i>lycopersici</i>	Alternaria stem canker	Aal
<i>Alternaria solani</i>	Early blight	As
<i>Corynespora cassiicola</i>	Target spot	Cc
<sup>13</sup> <i>Passalora fulva</i> (ex <i>Fulvia fulva</i> ) /2022	Leaf mold	Pf (ex Ff)
<i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i>	Fusarium wilt	Fol
<i>Fusarium oxysporum</i> f.sp. <i>radicis-lycopersici</i>	Fusarium crown and root rot	For
<i>Leveillula taurica</i> (anamorph: <i>Oidiopsis sicula</i> )	Powdery mildew	Lt
<i>Oidium neolycopersici</i> (now <i>Pseudoidium neolycopersici</i> ) /2026	Powdery mildew	On (now Pn)
<i>Phytophthora infestans</i>	Late blight	Pi
<i>Pyrenochaeta lycopersici</i> (now <i>Pseudopyrenochaeta lycopersici</i> ) /2026	Corky root rot	Pl
<i>Stemphylium botryosum</i> f.sp. <i>lycopersici</i>	Gray leaf spot	Sbl
<i>Stemphylium lycopersici</i>	Gray leaf spot	Sl
<i>Stemphylium solani</i>	Gray leaf spot	Ss
<i>Verticillium albo-atrum</i>	Verticillium wilt	Va
<i>Verticillium dahliae</i>	Verticillium wilt	Vd
<b>Nematodes</b>		
<i>Meloidogyne arenaria</i>	Root-knot	Ma
<i>Meloidogyne incognita</i>	Root-knot	Mi
<i>Meloidogyne javanica</i>	Root-knot	Mj
<b>27. <i>Solanum melongena</i> (Eggplant/Aubergine)</b>		
<b>Scientific name</b>	<b>English common name</b>	<b>Code</b>
<b>Viruses</b>		
<i>Tomato mosaic virus</i>	Tomato mosaic	ToMV
<i>Tomato spotted wilt virus</i>	Tomato spotted wilt	TSWV
<b>Bacteria</b>		
<sup>14</sup> <i>Ralstonia solanacearum</i>	Bacterial wilt	Rs
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>melongenae</i>	Fusarium wilt	Fom
<i>Verticillium albo-atrum</i>	Verticillium wilt	Va
<i>Verticillium dahliae</i>	Verticillium wilt	Vd

<sup>11</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

<sup>12</sup> Taxonomic studies on the bacteria causing bacterial spot on tomato and pepper have shown there are four different species (*X. euvesicatoria*, *X. vesicatoria*, *X. perforans* and *X. gardneri*) that cannot be differentiated by pathogenicity as they all cause very similar symptoms. As resistance in tomato and pepper to bacterial spot is based on races that go across these species we proposed to not specify the species but to keep the general name.

<sup>13</sup> Both *Cladosporium fulvum* and *Fulvia fulva* are still in use. The current name has changed from *Fulvia fulva* to *Passalora fulva* (See [https://rvpadmin.cce.cornell.edu/uploads/doc\\_128.pdf](https://rvpadmin.cce.cornell.edu/uploads/doc_128.pdf)).

<sup>14</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

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<b>Nematodes</b>		
<i>Meloidogyne incognita</i>	Root-knot	Mi

**28. *Solanum torvum* (Eggplant rootstock)**

Scientific name	English common name	Code
<b>Bacteria</b>		
<sup>15</sup> <i>Ralstonia solanacearum</i>	Bacterial wilt	Rs
<b>Fungi</b>		
<i>Fusarium oxysporum</i> f.sp. <i>melongenae</i>	Fusarium wilt	Fom
<i>Verticillium albo-atrum</i>	Verticillium wilt	Va
<i>Verticillium dahliae</i>	Verticillium wilt	Vd
<b>Nematodes</b>		
<i>Meloidogyne incognita</i>	Root knot	Mi
<i>Meloidogyne mayaguensis</i> (Syn. <i>M. enterolobii</i> )	Root knot	Me
<i>Meloidogyne arenaria</i>	Root knot	Ma
<i>Meloidogyne javanica</i>	Root knot	Mj

**29. *Spinacia oleracea* (Spinach)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Cucumber mosaic virus</i>	Cucumber mosaic	CMV
<b>Fungi</b>		
<i>Albugo occidentalis</i> (now <i>Wilsoniana occidentalis</i> ) /2026	White rust	Ao (now Wo)
<i>Cladosporium variabile</i>	Leaf spot	Cv
<sup>16</sup> <i>Colletotrichum dematium</i>	Anthraxnose	Cd
<i>Fusarium oxysporum</i> f. sp. <i>spinaciae</i>	Fusarium wilt	Fos
<i>Peronospora effusa</i> (ex <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> ) /2023	Downy mildew	Pe (ex Pfs)
<sup>17</sup> <i>Stemphylium botryosum</i> (now <i>Stemphylium beticola</i> ) /2027	Stemphylium leaf spot	Sb
<sup>18</sup> <i>Stemphylium vesicarium</i>	Stemphylium leaf spot	Sv
<i>Verticillium dahliae</i>	Verticillium wilt	Vd
<b>Insects</b>		
<i>Liriomyza langei</i>	Leaf miner	LI

**30. *Valerianella locusta* (Corn salad)**

Scientific name	English common name	Code
<b>Bacteria</b>		
<i>Acidovorax valerianellae</i>	Bacterial spot	Av

<sup>15</sup> *Ralstonia solanacearum* species complex comprises of three different species see Prior *et al.*, 2016.

<sup>16</sup> As per *Index Fungorum* this is the correct name for this pathogen, Syn. *Colletotrichum dematium* f. *spinaciae*; *Colletotrichum spinaciae*.

<sup>17</sup> As per Woudenberg *et al.*, 2017 and Liu *et al.*, 2020 *Stemphylium botryosum* will be renamed as *Stemphylium beticola* based on ITS rDNA, gapdh and cmdA sequences.

<sup>18</sup> *S. botryosum* isolates from WSU were analyzed as *S. beticola*. Majority of new isolates were analyzed as *S. vesicarium*. It is proposed to breeding companies to identify their isolates based on 'new' sequence analysis. Resistance is published for *S. vesicarium* (Liu *et al.*, 2020; du Toit, 2020).

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<b>Fungi</b>		
<i>Thielaviopsis basicola</i> (now <i>Berkeleyomyces basicola</i> ) /2026	Root rot	Tb (now Bb)

**31. Zea mays (Sweet corn)**

Scientific name	English common name	Code
<b>Viruses</b>		
<i>Maize dwarf mosaic virus</i>	Maize dwarf mosaic	MDMV
<i>Sugarcane mosaic virus</i>	Sugarcane mosaic	SCMV
<b>Bacteria</b>		
<i>Pantoea stewartii</i> subsp. <i>stewartii</i>	Stewart's wilt	Pst
<b>Fungi</b>		
<i>Bipolaris maydis</i>	Southern corn leaf blight	Bm
<i>Colletotrichum graminicola</i>	Anthraco nose leaf blight	Cg
<i>Exserohilum turcicum</i>	Northern leaf blight	Et
<i>Puccinia polysora</i>	Southern rust	Pp
<i>Puccinia sorghi</i>	Common rust	Ps
<i>Ustilago maydis</i>	Common smut	Um



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