



RESISTANCE TERMINOLOGY AND CODES

Definitions of the terms describing the reaction of plants to pests¹

In the information provided by the Seller, the following meaning is given to the terms below:

- 'Susceptibility': the inability of a plant variety to restrict the growth and/or development of a specified pest.
- 'Resistance': the ability of a plant variety to restrict the growth and/or development of a specified pest and/or the damage it causes when compared to susceptible plant varieties under similar environmental conditions and pest pressure.

Resistant varieties may exhibit some disease symptoms or damage under heavy pest pressure.

Two levels of resistance are defined:

- i. High resistance (HR): plant varieties that highly restrict the growth and/or development of the specified pest and/or the damage it causes under normal pest pressure when compared to susceptible varieties. These plant varieties may, however, exhibit some symptoms or damage under heavy pest pressure.
- ii. Intermediate resistance (IR): plant varieties that restrict the growth and/or development of the specified pest and/or the damage it causes, but may exhibit a greater range of symptoms or damage compared to high resistant varieties. Intermediate resistant plant varieties will still show less severe symptoms or damage than susceptible plant varieties when grown under similar environmental conditions and/or pest pressure.

Varieties claiming the same level of resistance against a specific pest may exhibit a different resistance response due to a different genetic background of a variety.

It is to be noted that if a resistance is claimed in a plant variety it is limited to the specified biotypes, pathotypes, races or strains of the pest.

If no biotypes, pathotypes, races or strains are specified in the resistance claim for a variety, it is because no generally accepted or relevant classification of the biotypes, pathotypes, races or strains of the cited pest exists. New biotypes, pathotypes, races or strains that may emerge are not covered by the original resistance claim.

- 'Immunity': a plant variety is not subject to attack or infection by a specified pest.

¹ FAO defines a pest as: any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products.

Pathogens (microorganisms such as bacteria, viruses and fungi that cause a disease) are, therefore, included in the term 'pest'.

Resistance codes

Resistances in our varieties are coded with a crop-specific resistance code (see the coding list on this page for the explanations), unless indicated otherwise. In situations where a variety is resistant to more than one pest, the individual resistance codes are separated by a semicolon (;).

		Code	Scientific name	English common name
Asparagus	Fungi	Pa	<i>Puccinia asparagi</i>	Rust
		Bc	<i>Botrytis cinerea</i>	Botrytis blight
		Sv	<i>Stemphylium vesicarium</i>	Purple spot
Brassicas	Bacteria	Xcc	<i>Xanthomonas campestris</i> pv. <i>campestris</i>	Black rot
	Fungi	Ac	<i>Albugo candida</i>	White rust
		Foc	<i>Fusarium oxysporum</i> f. sp. <i>conglutinans</i>	Fusarium yellows
		Hb	<i>Hyaloperonospora brassicae</i>	Downy mildew
		Pyb	<i>Pyrenopeziza brassicae</i>	Light leaf spot
		Mb	<i>Mycosphaerella brassicicola</i>	Ring spot
		Ss	<i>Sclerotinia sclerotiorum</i>	White mold
		Pb	<i>Plasmodiophora brassicae</i>	Clubroot
		Vd	<i>Verticillium dahliae</i>	Verticillium wilt
		Vi	<i>Verticillium longisporum</i>	Verticillium wilt
	Insect	Tt	<i>Thrips tabaci</i>	Thrips
Carrot	Fungi	Ad	<i>Alternaria dauci</i>	Alternaria leaf blight
		Ar	<i>Alternaria radicina</i>	Black rot
		Cc	<i>Cercospora carotae</i>	Cercospora leaf blight
		Eh	<i>Erysiphe heraclei</i>	Powdery mildew
		Ma	<i>Mycocentrospora acerina</i>	Liquorice rot
		Ps	<i>Pythium sulcatum</i>	Cavity spot
		Pv	<i>Pythium violae</i>	Cavity spot
		Rc	<i>Rhexocercosporidium carotae</i>	Black spot
	Virus	CtRLV	Carrot red leaf virus	Carrot red leaf
		CMoV	Carrot mottle virus	Carrot mottle
Celery, Celeriac	Fungi	Foa	<i>Fusarium oxysporum</i> f. sp. <i>apii</i>	Fusarium yellows and wilt
		Sa	<i>Septoria apiicola</i>	Late blight
	Virus	CeMV	Celery mosaic virus	Celery mosaic
Chicory (Radicchio Rosso / Green Hearted Chicory / Endive)	Virus	TSWV	Tomato spotted wilt virus	Tomato spotted wilt
Climbing Bean	Virus	BCMNV	Bean common mosaic necrosis virus	Bean common mosaic necrosis
		SBMV	Southern bean mosaic virus	Southern bean mosaic
		BCMV	Bean common mosaic virus	Bean common mosaic
	Fungi	Ep	<i>Erysiphe polygoni</i>	Powdery mildew
Courgette (Zucchini)	Viruses	CMV	Cucumber mosaic virus	Cucumber mosaic
		PRSV	Papaya ringspot virus	Papaya ringspot
		WMV	Watermelon mosaic virus	Watermelon mosaic
		ZYMV	Zucchini yellow mosaic virus	Zucchini yellows
Cucumber, Gherkin	Bacteria	Psi	<i>Pseudomonas syringae</i> pv. <i>lachrymans</i>	Angular leaf spot
	Viruses	CABYV	Cucurbit aphid borne yellows virus	Cucurbit aphid borne yellows
		CMV	Cucumber mosaic virus	Cucumber mosaic
		CVYV	Cucumber vein yellowing virus	Cucumber vein yellowing
		CYSDV	Cucurbit yellow stunting disorder virus	Cucurbit yellow stunting disorder
		PRSV	Papaya ringspot virus	Papaya ringspot
		ZYMV	Zucchini yellow mosaic virus	Zucchini yellows
		WMV	Watermelon mosaic virus	Watermelon mosaic
	Fungi	Ccu	<i>Cladosporium cucumerinum</i>	Scab and gummosis
		Cca	<i>Corynespora cassicola</i>	Corynespora blight and target spot
		Gc	<i>Golovinomyces cichorarearum</i>	Powdery mildew
		Pcu	<i>Pseudoperonospora cubensis</i>	Downy mildew
		Px	<i>Podosphaera xanthii</i>	Powdery mildew

		Code	Scientific name	English common name
Leek, (Bunching) Onion, Shallot	Fungi	Ap	<i>Alternaria porri</i>	Purple blotch
		Foc	<i>Fusarium oxysporum</i> f. sp. <i>cepae</i>	Basal rot
		Pd	<i>Peronospora destructor</i>	Downy mildew
		Pp	<i>Phytophthora porri</i>	White tip of leek
		Pa	<i>Puccinia allii</i>	Rust
	Insects	Tt	<i>Thrips tabaci</i>	Thrips
Lettuce	Fungi	Bl	<i>Bremia lactucae</i>	Downy mildew
		Fol	<i>Fusarium oxysporum</i> f. sp. <i>lactucae</i>	Fusarium wilt
	Viruses	LMV	Lettuce mosaic virus	Lettuce mosaic
		TBSV	Tomato bushy stunt virus	Lettuce die-back
Insect	Nr	<i>Nasonovia ribisnigri</i>	Lettuce leaf aphid	
Melon	Fungus	Fom	<i>Fusarium oxysporum</i> f. sp. <i>melonis</i>	Fusarium wilt
(Rooted) Parsley	Fungus	Pc	<i>Plasmopara crustosa</i>	Downy mildew
Hot and Sweet Pepper	Bacteria	Xcv	<i>Xanthomonas campestris</i> pv. <i>vesicatoria</i>	Bacterial spot
	Fungus	Pc	<i>Phytophthora capsici</i>	Phytophthora blight
	Viruses	CMV	Cucumber mosaic virus	Cucumber mosaic
		PVY	Potato Y virus	Potato Y
		BPMoV*	Bell pepper mottle virus	Bell pepper mottle
		PaMMV*	Paprika mild mottle virus	Paprika mild mottle
		PMMoV *	Pepper mild mottle virus	Pepper mild mottle
		TMGMV*	Tobacco mild green mosaic virus	Tobacco mild green mosaic
		TMV*	Tobacco mosaic virus	Tobacco mosaic
	ToMV*	Tomato mosaic virus	Tomato mosaic	
Virus group code	Tm	Tobamo = viruses marked with *	variety is resistant to specified Tm codes	
Radish	Fungi	Ac	<i>Albugo candida</i>	White rust/blister
		For	<i>Fusarium oxysporum</i> f. sp. <i>raphani</i>	Yellows
		Hb	<i>Hyaloperonospora brassicae</i>	Downy mildew
Red Beet	Virus	BNYVV	Beet necrotic yellow vein virus	Rhizomania
Spinach	Virus	CMV	Cucumber mosaic virus	Cucumber mosaic
	Fungi	Cv	<i>Cladosporium variable</i>	Leaf spot
		Pfs	<i>Peronospora farinosa</i> f. sp. <i>spinaciae</i>	Downy mildew
Tomato	Viruses	Pst	<i>Pseudomonas syringae</i> pv. <i>tomato</i>	Bacterial speck
		TLCV	Tomato leaf curl virus	Tomato leaf curl
		TMV	Tobacco mosaic virus	Tobacco mosaic
		ToMV	Tomato mosaic virus	Tomato mosaic
		TSWV	Tomato spotted wilt virus	Tomato spotted wilt
		TYLCV	Tomato yellow leaf curl virus	Tomato yellow leaf curl
		Fungi	Pf (ex Ff)	<i>Passalora fulva</i> (ex <i>Fulvia fulva</i>)
	Fol		<i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i>	Fusarium wilt
	For		<i>Fusarium oxysporum</i> f. sp. <i>radicis-lycopersici</i>	Crown and root rot
	Pi		<i>Phytophthora infestans</i>	Late blight
	Ss		<i>Stemphylium solani</i>	Gray leaf spot
	Nematodes	Va	<i>Verticillium albo-atrum</i> and/or <i>Verticillium dahlia</i>	Verticillium wilt
		Ma	<i>Meloidogyne arenaria</i>	Root-knot nematode
Mi		<i>Meloidogyne incognita</i>	Root-knot nematode	
		Mj	<i>Meloidogyne javanica</i>	Root-knot nematode
Watermelon	Fungi	Fon	<i>Fusarium oxysporum</i> f. sp. <i>niveum</i>	Fusarium wilt