

POTATO DISEASE LIST

Name		Virus type	Symptoms	Diagnostic method	Anti-sera available and source	Bioassay - Host range	Factors affecting test reliability	Countries where pest found	Economic Significance	Means of transfer	Vegative material / Botanical seed
Virus/viroid											
Potato spindle tuber viroid	PSTVd	Order: Unassigned Family: Pospiviroidae Genus: Pospiviroid	Y	NASH	Not available				64 % (Pfannenstiel, 1980)	Contact	
Andean potato mottle virus	APMoV	Order: Picornvirales Family: Secoviridae Genus: Comovirus	Y	ELISA	Polyclonal / CIP	Y		S America	may be significant	Contact	
Andean potato latent virus	APLV	Order: Tymovirales Family: Tymoviridae Genus: Tymovirus	Y	ELISA	Polyclonal / CIP	Y		S America	Little damage	Beetles	TPS
Arracacha virus B-oca strain	AVB-O	Cheravirus (tentative), Sequiviridae	N	ELISA	Polyclonal / Agdia Inc. / CIP	Y		Peru, Bolivia	Unknown		TPS
Potato leaf roll virus	PLRV	Order: Unassigned Family: Luteoviridae Genus: Polerovirus	Y	ELISA	Polyclonal / CIP		GRAFT ON TO DATURA STRAMONUM & PHYSALIS PUBESENS	Worldwide	up to 90%	Aphid	
Potato virus A	PVA	Order: Unassigned Family: Potyviridae Genus: Potyvirus	Y	ELISA	Polyclonal / CIP / Agdia Inc. / Bioreba	Y	POSSIBLE USE OF RT PCR	Worldwide	Can be up to 40 %	Aphid	
Potato virus M	PVM	Order: Tymovirales Family: Betaflexiviridae Genus: Carlavirus	Y?	ELISA	Polyclonal / CIP	Y	OFTEN SYMPTOMLESS. POSSIBLE USE OF RT PCR	Worldwide	at worst 15 -45 %	Aphid	
Potato virus S	PVS	Order: Tymovirales Family: Betaflexiviridae Genus: Carlavirus		ELISA	Polyclonal / CIP	Y		Worldwide	At worst 10 - 20 %	Aphid	
Potato virus T	PVT	Order: Tymovirales Family: Betaflexiviridae Genus: Unassigned		NASH	Not available	Y		S America (Peru)	Unknown	Contact	TPS Pollen
Potato virus X	PVX	Order: Tymovirales Family: Alphaflexiviridae Genus: Potexvirus	Y	ELISA	Polyclonal / CIP	Y		Worldwide	Usually 15 -20 %	Contact	
Potato virus Y	PVY	Order: Unassigned Family: Potyviridae Genus: Potyvirus	Y	ELISA	Polyclonal / CIP	Y		Worldwide	Losses reach 10-80 %	Aphid	

Potato mop top virus	PMTV	Order: Unassigned Family: Virgaviridae Genus: Pomovirus	Y	ELISA	Polyclonal / Bioreba	Y	NCM ELISA ON HOST RANGE PLANTS EXHIBITING SYMPTOMS. CAREFUL CHOICE OF INDICATOR SPP TO TEST. POSSIBLE VALIDATION OF RT PCR	N and C Europe Peru	Affect tuber quality	Fungi	
Potato yellow vein virus	PYVV	Order: Unassigned Family: Closteroviridae Genus: Crinivirus	Y	NASH	Not available		GRAFT TO S TUBEROSUM. NASH AVAILABLE, POSSIBLE USE OF RT PCR, VIRUS SPREADING INTO CIP REGION	S America (Columbia Venezuela, Peru and	More 50 %	Whitefly	
Potato black ringspot virus	PBRV	Order: Picornavirales Family: Secoviridae Genus: Nepovirus	Y	ELISA	Polyclonal / Acdia Inc.*	Y	SAP INOCULATION ONTO CHENOPODIUM AMARANTICOLOR AND C. QUINOA	Peru	Low importance in potato	Nematodes	
Potato latent virus	PotLV	Order: Tymovirales Family: Betaflexiviridae Genus: Carlavirus		ELISA	Polyclonal / C. Jeffries / Acdia Inc.	Y	INDICATOR PLANTS UNRELIABLE. POSSIBLE USE OF CARLAVIRUS AB MIX	N.America	Unknown	Aphid	
Tobacco rattle virus	TRV	Order: Unassigned Family: Virgaviridae Genus: Tobravirus	Y	RT PCR	Polyclonal / Acdia Inc.	Y	UNRELIABLE SYMPTOMS	Worldwide	May be appreciable loss	Nematodes	
Tomato black ring virus	TBRV	Order: Picornavirales Family: Secoviridae Genus: Nepovirus	Y?	ELISA	Polyclonal / Acdia Inc.	Y	PRIMARY INFECTED PLANTS USUALLY SYMPTOMLESS	Europe	Little significance	Nematodes	TPS
Alfalfa mosaic virus	AMV	Order: Unassigned Family: Bromoviridae Genus: Alfamovirus	Y	ELISA	Polyclonal / Bioreba / Acdia Inc.	Y	COMMON IN NATIVE POTATO SPP	Worldwide	Little economic importance	Aphid	
Beet curly top	BCTV	Order: Unassigned Family: Geminiviridae Genus: Curtovirus	Y		Not available	G	GRAFT ON TO BETA VULGARIS CUCUMIS SATIVAS	Arid areas Worldwide	Little economic importance	Leafhoppers	
Cucumber mosaic virus	CMV	Order: Unassigned Family: Bromoviridae Genus: Cucumovirus	Y	ELISA	Polyclonal / Acdia Inc.	Y		Worldwide	Little economic importance	Aphid	
Eggplant mottled dwarf virus	EMDV	Order: Mononegavirales Family: Rhabdoviridae Genus:	Y		Not available	Y		Iran	Rare in potatoes	Aphid	
Groundnut bud necrosis virus	GBNV	Order: Unassigned Family: Bunyaviridae Genus: Tospovirus			Not available			India		Thrips	
Groundnut ringspot virus	GRSV	Order: Unassigned Family: Bunyaviridae Genus: Tospovirus			Not available			Argentina			
Impatiens necrotic spot virus	INSV	Order: Unassigned Family: Bunyaviridae Genus: Tospovirus	Y		Not available	Y					

Potato aucuba mosaic virus	PAMV	Order: Tymovirales Family: Alphaflexiviridae Genus: Potexvirus	Y	ELISA	Polyclonal / CIP	Y	NOT COMMONLY FOUND IN POTATOES	Worldwide		Contact aphids	
Potato deforming mosaic virus	PDMV	Order: Unassigned Family: Geminiviridae Genus: Begomovirus	Y	ELISA / PCR - universal		Y	GRAFT ON TO LYCOPERSICUM ESCULENTUM	Brazil		Whitefly	
Potato virus P	PVP	Order: Tymovirales Family: Betaflexiviridae Genus: Carlavirus		ELISA	Polyclonal / CIP		NO SYMPTOMS ON INDICATOR PLANTS	Brasil	20 - 80 % importance local		
Potato virus U	PVU	Order: Picornavirales Family: Secoviridae Genus: Nepovirus			Not available	Y	ANTIBODY NOT AVAILABLE	Peru	Unknown	Nematodes ?	
Potato virus V	PVV	Order: Unassigned Family: Potyviridae Genus: Potyvirus		NCM-ELISA	Polyclonal / Agdia Inc.	Y	OCCURS IN BOLIVIA	N.America S.America	Damage severe c.native	Aphids	
Potato yellow dwarf virus	PYDV	Order: Mononegavirales Family: Rhabdoviridae Genus:	Y	ELISA	Not available	Y	OCCURS IN ARGENTINA	N.America	No economic importance	Leaf hopper	
Potato yellow mosaic virus	PYMV	Order: Unassigned Family: Geminiviridae Genus: Begomovirus	Y	PCR - universal primers WF-	Not available	Y	Lycopersicon esculentum, Nicotiana ssp., Petunia x hybrida — systemic leaf chlorosis. Virus is transmitted	Carribean region	Unknown	Whitefly	
Solanum apical leaf curling virus	SALCV	tentative Geminivirus	Y	Not available	Not available	Y (UNRELIABLE)	GRAFT TO DATURA STRAMONUM OR D TATULA	Peru	Significance in localized areas		
Sowbane mosaic virus	SoMV	Order: Unassigned Family: Unassigned Genus: Sobemovirus	Y	ELISA	Not available	Y	VERY MILD SYMPTOMS	Worldwide	Rare in potatoes		
Tobacco chlorotic spot virus	TCSV	Order: Unassigned Family: Bunyaviridae Genus: Tospovirus			Not available			Argentina Brazil?			
Tobacco mosaic virus	TMV	Order: Unassigned Family: Virgaviridae Genus: Tobamovirus	Y		Polyclonal / CIP	Y		Worldwide	Not problem in potatoes	Contact	
Tobacco necrosis virus	TNV	Order: Unassigned Family: Tombusviridae Genus: Necrovirus			Not available	Y	TUBER SYMPTOMS ONLY	Europe, N.America, Tunisia	Not significance in potatoes		
Tobacco streak virus	TSV	Order: Unassigned Family: Bromoviridae Genus: Ilarvirus	Y	ELISA	polyclonal / Agdia Inc.	Y		S America ?	Little significance in potatoes		
Tomato leaf curl New Dehli virus	ToLCNDV	Order: Unassigned Family: Geminiviridae Genus: Begomovirus			Not available			India			

Tomato mosaic virus	ToMV	Order: Unassigned Family: Virgaviridae Genus: Tobamovirus		ELISA	polyclonal / Agdia Inc.	Y	MOSAIC MOTTLE IN S BULBO CASTANUM	Hungary	Not problem in potatoes		
Tomato mottle Taino virus	ToMoTV	Order: Unassigned Family: Geminiviridae Genus: Begomovirus			Not available			Cuba		Whitefly	
Tomato spotted wilt virus	TSWV	Order: Unassigned Family: Bunyaviridae Genus: Tospovirus	Y	ELISA	polyclonal / Agdia Inc.	Y	FALSE POSITIVES POSSIBLE FROM ELISA. BUFFER FOR SAP INOCULATION - PHOSPHATE DWD	Worldwidehot climates	Importance in localized areas	Thrips	
Wild potato mosaic virus	WPMV	Order: Unassigned Family: Potyviridae Genus: Potyvirus	Y		Not available	Y	SYMPTOMS ON S CHANCAYENSE S MURICATUM		Not problem in potatoes		

Viruses not listed on ICTV master list 10/09

Arracacha virus B-oca strain	AVB-O	Cheravirus (tentative), Sequiviridae	N	ELISA	Polyclonal / Agdia Inc. / CIP	Y		Peru, Bolivia	Unknown		TPS
Potato yellowing virus	PYV	tentative Alfamovirus	Y	ELISA	Polyclonal / CIP	Y	SAP INOCULATION ONTO CAPSICUM ANNUUM, N TOBACUM OR P PUBESENS USING MERCAPTO ETHANOL BUFFER OR GRAFT	S America	Unknown	Aphid	TPS
Potato rough dwarf virus	PRDV	tentative Carlavirus	Y	ELISA + PCR	Not available	Y (UNRELIABLE)	POSSIBLE USE OF DEGENERATE CARLAVIRUS PRIMERS	Argentina Uruguay	Little importance	Aphid	
Potato deforming mosaic (Argentina)	PDMV	Geminivirus, Begomovirus tentative, not included in the 7th / 8th report of the ICTV	Y	PCR - universal primers WF- Transmitted geminiviruses	Not available	Y (Grafting to D. stramonium and L. sculentum cv. Rutgers)	MORE INFORMATION REQUIRED (TAXONOMY)	Brasil	Up to 35 %	Whitefly	
Saq'O	PLRV??		Y		native strain PLRV		GRAFT ONTO D STRAMONUM + ELISA	BOLIVIA	40%		

Bacteria

Clavibacter michiganensis ssp. Sepedonicus							TEST ON REQUEST. MORE INFORMATION REQUIRED		Very destrutive on potatoes		
Ralstonia solanacearum							TEST ON REQUEST. MORE INFORMATION REQUIRED		Very destrutive on potatoes		

Phytoplasma

Stolbur				PCR			LOW TITRE UNEVEN DISTRIBUTION. NEED TO DEFINE A PROCEDURE FOR DETECTION, POSSIBLY RT PCR ON GRAFT		Up to 80 %		
Others							LOW TITRE UNEVEN DISTRIBUTION. NEED TO DEFINE A PROCEDURE FOR DETECTION, POSSIBLY RT PCR ON GRAFT				