



NSHS Methods List & Codes



DATE: Current as of 02.05.2021

Crop	Pathogen	Method	Code	Former Code	Class	NSHS Version	Date
Bean	<i>Pseudomonas syringae</i> pv. <i>phaseolicola</i>	Dilution and plating, followed by PCR (ISTA 7-023: ver 1.4)	Be 1.2		St	1.4	1/1/2021
	<i>Pseudomonas syringae</i> pv. <i>syringae</i>	Agar Plate Assay (Mohan and Schaad, 1987)	Be 2.1		TSt	1.0	12/2012

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	Xanthomonas axonopodis pv. phaseoli	ISTA Method (7-021: ver 3.2)	Be 3.1		TSt	1.4	1/1/2021
	Curtobacterium flaccumfaciens pv. flaccumfaciens	PCR	Be 4.1		TSt	1.0	12/2012
	Curtobacterium flaccumfaciens pv. flaccumfaciens	Selective Media Assay (Maringoni et al., 2006)	Be 4.2		TSt	1.0	12/2012
	Curtobacterium flaccumfaciens pv. flaccumfaciens	Selective Media Assay (Univ. of Idaho)	Be 4.3		TSt	1.0	12/2012
	Colletotrichum lindemuthianum	ISTA Method (7-006: ver 1.3)	Be 5.1		TSt	1.1	1/1/2020
Pea	Ascochyta pisi	ISTA Method (7-005: ver 1.3)	Pe 1.1		St	1.2	1/1/2021
	Pea Seedborne Mosaic Virus	ISTA Method (7-024: ver 1.4)	Pe 2.1		St	1.2	1/1/2021

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	Pea Early Browning Virus	ISTA Method (7-024: ver 1.4)	Pe 3.1		St	1.2	1/1/2021
	<i>Pseudomonas syringae</i> pv pisi	ISTA Method (7-029: ver 1.2)	Pe 4.1		St	1.2	1/1/2021
Brassica	<i>Xanthomonas campestris</i> pv. <i>campestris</i>	ISTA Method (7-019a: ver 6.0; 7-019b: ver 1.3)	Br 1.1		St	1.3	1/1/2021
	<i>Phoma lingam</i>	Freeze Blotter (ISTA 7-004: ver 2.1)	Br 2.1		St	1.3	1/1/2021
Carrots	<i>Xanthomonas campestris</i> pv. <i>carotae</i>	ISTA Method (7-020: ver 1.4)	Rb 1.1		St	1.1	1/1/2021
	<i>Alternaria dauci</i>	ISTA Method (7-001a: ver 1.5; 7-001b: ver 1.5)	Rb 2.1		St	1.2	1/1/2021

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	<i>Alternaria dauci</i>	Direct Plating/Blotter Method (Sunseeds)	Rb 2.2		St	1.0	2001
	<i>Alternaria radicina</i>	ISTA Method (7- 002a: ver 1.4)	Rb 3.1		St	1.2	1/1/2021
Cucurbits	<i>Acidovorax avenae</i> ssp. <i>citrulli</i>	Seedling grow-out	Cb 1.1		St	1.1	2017
	<i>Acidovorax avenae</i> ssp. <i>citrulli</i>	CSPL PCR Assay	Cb 1.5		TSt (oc)	1.0	12/2012
	<i>Acidovorax citrulli</i>	ISHI Method	Cb 1.6		St	1.0	07/2017
	<i>Didymella bryoniae</i>	PCR	Cb 2.1		TSt	1.0	12/2012
	<i>Didymella bryoniae</i>	Vegetables Blotter Assay	Cb 2.2		TSt	1.0	2001

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	Cucumber green mottle mosaic virus	ISTA Method (7-026: ver 1.4)	Cb 3.1		TSt	1.2	1/1/2021
	Melon necrotic spot virus	ISTA Method (7-026: ver 1.4)	Cb 4.1		TSt	1.2	1/1/2021
	Squash mosaic virus (SMV)	ISTA Method (7-026: ver 1.4)	Cb 5.1		TSt	1.2	1/1/2021
	Fusarium oxysporum f.sp. niveum	Freeze Blotter (Syngenta)	Cb 6.1		TSt	1.0	11/2014
Celery	Septoria apiicola	Seed Wash (STA Laboratories)	Lcb 1.1		St	1.0	2001
	Phoma apiicola	Grow-out (Hewitt, 1971)	Lcb 2.1		TSt	1.0	2001
Spinach	Peronospora farinosa f.sp. spinaciae	Wash Test (Inaba et al., 1983)	Lcb 3.1		TSt	1.0	12/2012
	Peronospora farinosa f.sp. spinaciae	Wash Test (CDFA)	Lcb 3.2		St	1.0	12/2012

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	Verticillium dahliae	Freeze Blotter, ISTA Method 7-032: ver 1.1	Lcb 4.1		St	1.2	1/1/2021
	Verticillium dahliae	NP-10 Agar, ISTA Method 7-032: ver 1.1	Lcb 4.2		St	1.2	1/1/2021
	Cucumber mosaic virus	Seedling grow-out and ELISA	Lcb 5.1		St	1.0	12/2012
	Stemphylium botryosum f. sp. spinacia	Freeze Blotter	Lcb 6.1		St	1.0	12/2012
Coriander	Pseudomonas syringae pv. coriandricola	Selective Media Test (STA Laboratories)	Lcb 7.1		St	1.0	2001
Lettuce	Lettuce mosaic virus	Chenopodium (Kimble et al., 1975)	Lcb 8.1	Cv 1.1	St	1.0	2001

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	Lettuce mosaic virus	ISHI-Vegetables Method (version 4.3, Feb 2017)	Lcb 8.2	Cv 1.2	St	1.1	5/11/2017
Corn Salad	Acidovorax valerianellae	ISTA Method (7-030: ver 1.2)	Lcb 9.1		St	1.1	1/1/2021
Solanaceae (Tomato/Pepper)	Xanthomonas spp.	ISHI-Vegetables Method (pepper, version 5, 2013)	So 1.1		TSt	1.1	05/2020
	Xanthomonas spp.	ISHI-Vegetables Method (tomato, version 4, 2011)	So 1.2		TSt	1.1	05/2020
	Clavibacter michiginensis ssp. michiginensis	ISHI-Vegetables Method (version 4.3, 2015)	So 2.1		St	1.0	12/2015
	Pseudomonas syringae pv. tomato	CDFA Method	So 3.1		St	1.0	2001
	Pepino Mosaic Virus	ISHI Method (version 4, 2011)	So 4.1		TSt	1.0	12/2013

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	Tobamoviruses (TMV, ToMV, PMMov)	ISTA Method (7-028: ver 1.3)	So 5.1		TSt	1.3	1/1/2021
	Pospiviroids (CLVd, PCFVd, PSTVd, TASVd, TCDVd and TPMVd)	TaqMan RT-PCR Method, National Seed Health System (NSHS)	So 6.1		St	1.2	11/2020
	Tomato Brown Rugose (ToBRFV)	TaqMan RT-PCR Method, National Seed Health System (NSHS)	So 7.1		St	1.1	11/2020
Onion	Alternaria porri	Agar Plate Method	On 1.1		TSt	1.0	12/2013
	Stemphylium vesicarium	S. vesicarium	On 2.1		TSt	1.0	12/2013
Maize	Stenocarpella maydis	ISU Culture plate	Mz 1.1	Cf 1.1	St	1.0	2001

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	Cochliobolus carbonum	ISU Freezing Blotter Method (McGee, 1994)	Mz 2.1	Cf 2.1	St	1.0	2001
	Cochliobolus heterostrophus	ISU Freezing Blotter Method (McGee, 1994)	Mz 3.1	Cf 3.1	St	1.0	2001
	Ustilago maydis/Sphacelotheca reiliana	Wash Test (McGee, 1988)	Mz 4.1	Cf 4.1	St	1.0	2001
	Sclerophthora macrospora	Direct Visual method (CIMMYT)	Mz 5.1	Cf 5.1	TSt	1.0	2001
	Peronosclerospora sorghi	Grow-out (Adenle and Cardwell, 2000)	Mz 6.1	Cf 6.1	St	1.0	2001
	Fusarium	Blotter (Singh et al., 1974)	Mz 7.1	Cf 8.2	St	1.0	2001

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	Penicillium oxalicum	Blotter test (Handoo and Aulakh, 1979) sCNS	Mz 8.1	Cf 9.1	St	1.0	2001
	Clavibacter michiganensis ssp. nebraskensis	Culture Plate Method (Shepherd, 1999)	Mz 9.1	Cb 1.1	St	1.0	2001
	Erwinia stewartii	ELISA (Lamka et al., 1991)	Mz 10.1	Cb 2.1	St	1.2	10/2020
	Maize Dwarf Mosaic Virus	ELISA (Iowa State University/Agdia Inc kit)	Mz 11.1	Cb 3.1	TSt	1.2	10/2020
	Maize Chlorotic Mottle Virus	ELISA (Iowa State University/Agdia Inc kit)	Mz 12.1	Cb 4.1	TSt	1.2	10/2020
	Cercospora zeae-maydis	Culture Plate	Mz 13.1	Cf 10.1	RNSP	1.0	2001

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	<i>Kabateilla zeae</i>	Culture Plate	Mz 14.1	Cf 11.1	RNSP	1.0	2001
	<i>Phyllosticta maydis</i>	Culture Plate	Mz 15.1	Cf 12.1	RNSP	1.0	2001
Soybean	<i>Cercospora kikuchii</i>	Culture Plate (Jordan et al., 1986)	Sb 1.1	Sf 1.1	St	1.0	2001
	<i>Cercospora kikuchii</i>	Culture Plate (McGee and Nyvall, 1984)	Sb 1.2	Sf 1.2	St	1.0	2001
	Phomopsis/Diaporthe spp.	Culture plate (McGee, 1986)	Sb 2.1	Sf 2.1	St	1.0	2001
	Phomopsis/Diaporthe spp.	Blotter (McGee and Nyvall, 1984)	Sb 2.2	Sf 2.2	St	1.0	2001
	<i>Sclerotinia sclerotiorum</i>	Culture plate (Totir, 2000)	Sb 3.1	Sf 3.1	St	1.0	2001

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	<i>Pseudomonas syringae</i> pv. <i>glycinea</i>	Soaked bulk seed – Biochemical confirmation	Sb 4.1	Sb 2.1	St	1.0	2001
	<i>Pseudomonas syringae</i> pv. <i>glycinea</i>	Ground bulk seed – Serological and pathogenicity	Sb 4.2	Sb 2.2	St	1.0	2001
	Tobacco Ringspot Virus	ELISA (Iowa State University/Agdia Inc kit)	Sb 5.1	Sv 1.1	TSt	1.2	10/2020
	Tomato Ringspot Virus	ELISA (Iowa State University/Agdia Inc kit)	Sb 6.1	Sv 2.1	TSt	1.2	10/2020
	Soybean Mosaic Virus	ELISA (Iowa State University/Agdia Inc kit)	Sb 7.1	Sv 3.1	TSt	1.2	10/2020
	Bean Pod Mottle Virus	ELISA (Iowa State University/Agdia Inc kit)	Sb 8.1	Sv 4.1	TSt	1.2	10/2020

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	Phakopsora pachyrhizi	Wash test	Sb 9.1	Sf 4.1	RNSP	1.0	2001
	Phialophora gregatum	Culture Plate	Sb 10.1	Sf 5.1	RNSP	1.0	2001
	Phytophthora megasperma var. glycinea	Culture Plate	Sb 11.1	Sf 6.1	RNSP	1.0	2001


Approved methods are classified as follows:

St: Standard (A)

TS: Temporary standard (B)

RNSP: Regulated non-seedborne pathogens

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