



## NSHS Methods List & Codes



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DATE: Current as of 03.12.2021

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		TS†	1.0	12/2012
	<i>Xanthomonas axonopodis</i> pv. <i>phaseoli</i>	ISTA Method (7-021: ver 3.2)	Be 3.1		TS†	1.4	1/1/2021
	<i>Curtobacterium flaccumfaciens</i> pv. <i>flaccumfaciens</i>	PCR	Be 4.1		TS†	1.0	12/2012

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	<i>Curtobacterium flaccumfaciens</i> pv. <i>flaccumfaciens</i>	Selective Media Assay (Maringoni et al., 2006)	Be 4.2		TSt	1.0	12/2012
	<i>Curtobacterium flaccumfaciens</i> pv. <i>flaccumfaciens</i>	Selective Media Assay (Univ. of Idaho)	Be 4.3		TSt	1.0	12/2012
	<i>Colletotrichum lindemuthianum</i>	ISTA Method (7-006: ver 1.3)	Be 5.1		TSt	1.1	1/1/2020
Pea	<i>Ascochyta pisi</i>	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
	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 <i>pisii</i>	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

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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
	<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
<b>Celery</b>	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
<b>Spinach</b>	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
	Verticillium dahliae	Freeze Blotter, ISTA Method 7-032: ver 1.1	Lcb 4.1		St	1.2	1/1/2021

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	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
	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

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	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
	Tobamoviruses (TMV, ToMV, PMMov)	ISTA Method (7-028: ver 1.3)- Tomato; ISF Jan 2007-Pepper	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
<b>Onion</b>	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
<b>Maize</b>	Stenocarpella maydis	ISU Culture plate	Mz 1.1	Cf 1.1	St	1.0	2001

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	<i>Cochliobolus carbonum</i>	ISU Freezing Blotter Method (McGee, 1994)	Mz 2.1	Cf 2.1	St	1.0	2001
	<i>Cochliobolus heterostrophus</i>	ISU Freezing Blotter Method (McGee, 1994)	Mz 3.1	Cf 3.1	St	1.0	2001
	<i>Ustilago maydis</i> / <i>Sphacelotheca reiliana</i>	Wash Test (McGee, 1988)	Mz 4.1	Cf 4.1	St	1.0	2001
	<i>Sclerophthora macrospora</i>	Direct Visual method (CIMMYT)	Mz 5.1	Cf 5.1	TSt	1.0	2001
	<i>Peronosclerospora sorghi</i>	Grow-out (Adenle and Cardwell, 2000)	Mz 6.1	Cf 6.1	St	1.0	2001
	<i>Fusarium</i>	Blotter (Singh et al., 1974)	Mz 7.1	Cf 8.2	St	1.0	2001
	<i>Penicillium oxalicum</i>	Blotter test (Handoo and Aulakh, 1979) sCNS	Mz 8.1	Cf 9.1	St	1.0	2001
	<i>Clavibacter michiganensis</i> ssp. <i>nebraskensis</i>	Culture Plate Method (Shepherd, 1999)	Mz 9.1	Cb 1.1	St	1.0	2001
	<i>Erwinia stewartii</i>	ELISA (Lamka et al., 1991)	Mz 10.1	Cb 2.1	St	1.2	10/2020

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	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
	<i>Cercospora zeae-maydis</i>	Culture Plate	Mz 13.1	Cf 10.1	RNSP	1.0	2001
	<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
<b>Soybean</b>	<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
	<i>Phomopsis/Diaporthe</i> spp.	Culture plate (McGee, 1986)	Sb 2.1	Sf 2.1	St	1.0	2001
	<i>Phomopsis/Diaporthe</i> spp.	Blotter (McGee and Nyvall, 1984)	Sb 2.2	Sf 2.2	St	1.0	2001

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	Sclerotinia sclerotiorum	Culture plate (Totir, 2000)	Sb 3.1	Sf 3.1	St	1.0	2001
	Pseudomonas syringae pv. glycinea	Soaked bulk seed – Biochemical confirmation	Sb 4.1	Sb 2.1	St	1.0	2001
	Pseudomonas syringae pv. glycinea	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
	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

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	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)

**TSt:** Temporary standard (B)

**RNSP:** Regulated non-seedborne pathogens

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