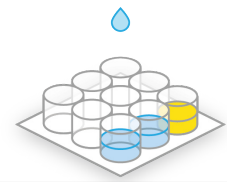


Validation Report: ELISA

PSA/SRA 39300 • Tomato spotted wilt virus (TSWV)



Test Characteristics

Test Name	Tomato spotted wilt virus	Capture Antibody	Monoclonal (Mouse)
Catalog Number	39300	Detection Antibody	Monoclonal (Mouse)
Acronym	TSWV	Format	DAS-ELISA
Genus	Orthospovirus	Diluents	GEB/ECI
		Sample Dilution	1:10

Summary

This ELISA test is a qualitative serological assay for the detection of Tomato spotted wilt virus (TSWV) in tomato and pepper leaves as well as other ornamental and vegetable species. TSWV is a member of the Orthospovirus genus known for their enveloped, spherical-shaped virus particles.

Diagnostic Sensitivity

True Positives	80
Correct Diagnoses	80
Percent	100%

Analytical Sensitivity

Limit of Detection: 1:24,300 dilution of infected tissue (pathogen titer unknown)

Analytical Specificity

Inclusivity:

Isolates and Geographic Regions Detected:

TSWV-BJFC-Hb (China) ¹	TSWV-CE (South Korea) ²
TSWV-MR-01 (CA, USA) ³	TSWV-WGK (South Korea) ⁴
TSWV-YN (China) ⁵	TSWV Brazil isolate
TSWV Italy isolate	TSWV New Zealand isolate
TSWV Spain isolate	TSWV Sw-5 resistance breaking isolate ⁶
TSWV USA isolate	

¹TSWV-BJFC-Hb has been externally [reported](#) to be detected.

²TSWV-CE has been externally [reported](#) to be detected.

³TSWV-MR-01 has been externally [reported](#) to be detected.

⁴TSWV-WGK has been externally [reported](#) to be detected.

⁵TSWV-YN has been externally [reported](#) to be detected.

⁶TSWV Sw-5 resistance breaking isolate has been externally [reported](#) to be detected.



Agdia, Inc.
52642 County Road 1
Elkhart, IN 46514
574-264-2014 / 800-622-4342
www.agdia.com / info@agdia.com

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Exclusivity:

Cross-reacts With:

Alstroemeria necrotic streak virus (ANSV) ¹	Groundnut ringspot virus (GRSV)
Tomato chlorotic spot virus (TCSV)	
¹ ANSV has been externally reported to be detected in 2017 and 2019 .	

Does Not Cross-reacts With:

Melon yellow spot virus (MYSV)	
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Diagnostic Specificity

True Negatives 75
Correct Diagnoses 75
Percent 100%

Selectivity:

No Matrix Effect Observed With:			
Alstroemeria leaves	Bean leaves	Beet roots	Blueberry leaves
Cucumber leaves	Cymbidium leaves	Dianthus leaves	Eggplant leaves
Hosta leaves	Impatiens leaves	Nandina leaves	Papaya leaves
Pepper leaves	Petunia leaves	Potato leaves	Soybean leaves
Strawberry leaves	Strawflower leaves	Tobacco leaves	Tomato leaves
Watermelon leaves			

Glossary

Diagnostic sensitivity¹:	The percentage of positive samples correctly identified in an experiment with known positive controls.
Diagnostic specificity¹:	The percentage of negative samples correctly identified in an experiment with known negative controls.
Analytical sensitivity²:	The smallest amount of target that can be detected reliably (this is sometimes referred to as the 'limit of detection')
Analytical specificity²:	(comprises inclusivity and exclusivity)
Inclusivity³:	The performance of a test with a range of target isolates covering genetic diversity, different geographical origin and/or hosts associated with the target organism.
Exclusivity³:	The performance of a test with a range of non-targets (e.g. cross-reaction with closely related organisms, contaminants)
Selectivity²:	The level of effect that matrices and relevant plant parts have on the performance of the assay.
Repeatability²:	The agreement between test replicates of the same sample tested by the same operator.
Reproducibility³:	The ability of a test to provide consistent results when applied to aliquots of the same sample tested under different conditions (e.g. time, users, equipment, location)
Robustness^{1,3}:	The extent to which varying test conditions (e.g. temperature, volume, change of buffers) affect the established test performance values. May also be referred to as planned deviation analysis.
Stability¹:	The performance of test reagents or controls over time.

References:

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- ³EPPO (2018) PM 7/76 (5) Use of EPPO Diagnostic Standards, EPPO Bulletin 48, 373– 377.



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