

Validation report

DAS-ELISA MDMV

Article No.: 140377 (MDMV Complete kit 96) / 140375 (MDMV Complete kit 480) / 140372 (MDMV Complete kit 960)

General information:

Target Pathogen	MDMV (Maize dwarf mosaic virus / Potyvirus zeae virus)
Genus	<i>Potyvirus</i>
Method	DAS-ELISA

Technical information:

Antibodies	Polyclonal antibodies developed against MDMV isolates from maize plants in Germany and the US.
Sampling	Leaf samples: 1:20 (w/v) in extraction buffer "General" Seed samples: 1:25 (w/v) in extraction buffer "General" Seed lots testing: 100 corn seeds in 100 ml extraction buffer "General". Dry grinding and then addition of 100 ml extraction buffer.
Controls	Negative control (NC): lyophilized extracts from healthy plants Positive control (PC): lyophilized MDMV infected plant extracts
Working volume	200 µl / well

Host matrix:

Tested plant material	Leaf, Seeds (Maize) Seed transmission is possible. Virus can be transmitted by vectors (aphids).
Tested species infected	<i>Zea mays</i> (Maize)

Specificity:

Analytical Specificity	100%
Number of tested samples from target organism (True Positives)	>100
Diagnostic Specificity	100%
Number of tested samples non-target organism (True Negatives)	36
Detected isolates / geographic regions (Inclusivity)	MDMV 1370 (Switzerland, Maize) MDMV 2122-106-3 (Chile, Maize) MDMV 091203 (Germany, Maize) MDMV 200115 (Switzerland, Maize) MDMV 091014 (Switzerland, Maize) MDMV 270710 (Switzerland, Maize) MDMV 300610 (Switzerland, Maize)
Cross reaction with (Exclusivity)	Very weak cross-reaction: SCMV (Sugarcane mosaic virus) Cross-reaction with other potyviruses cannot be excluded.
No cross reaction tested with (Exclusivity)	BYNVV (Beet necrotic yellow vein virus) MCMV (Maize chlorotic mottle virus) PMTV (Potato mop-top virus)

	PVX (Potato virus X)
No matrix effect observed with (Selectivity)	<i>Hordeum vulgare</i> (Barley) <i>Saccharum officinarum</i> (Sugar cane) <i>Zea mays</i> (Maize)

Sensitivity:

Diagnostic Sensitivity	100%
Analytical Sensitivity / LoD	10 ⁻³ dilution of infected tissue (pathogen titer unknown)
Sensitivity on host matrix	MDMV on leaves of maize: 1: 6'250 dilution Pathogen titer unknown
Other sensitivity characteristics	-

Validation:

Internal validation	2017, 2023-2024 (last internal validation)
External validation	-
Reproducibility	100%
Repeatability	100%
Validation information	Internally, the reagents have been validated with the BIOREBA isolate collection composed of various samples collected within the last 30 years.

Validation release Date:
July 23rd, 2024

QC manager:



Version: 2 – 28.04.2025 – Additional validation information on analytical sensitivity and sensitivity on host matrix.