
Potato Virus S (PVS) Rapid Test

Cat.No: DTSPV8

Lot. No. (See product label)

Size

100 Tests

Intended Use

The test can be simply used to on-site and rapid detect PVS in suspicious plant samples, without requiring any special equipment or expertise to run.

General Description

Potato virus S (PVS) is of increasing importance in potato. PVS can cause yield loss up to 20%. Most potato cultivars are symptomless, so it is very difficult to detect using visual cues. PVS is non-persistently transmitted by aphids.

Principle of The Test

The development of rapid test strips is based on Lateral Flow Device (LFD) technology using specific antibodies. A LFD format consists of antibody-coated latex beads latex (or colloidal gold) which will bind the specific pathogen antigen absorbed from the plant extract. The agglutination is accumulated at a specific location by the presence of a line of target specific antibody, which immobilises the agglutinated latex whilst allowing the background reagents to be washed away by continued flow along the membrane. The membrane contains a strip of target-specific antibody, test strip and a strip of another antibody that binds to the specific antibody, control strip. Latex beads containing bound antigen are trapped on the test strip leaving a visible line. Surplus latex beads that do not contain antigen are trapped on the control strip showing that the assay has worked. This provides a non-subjective and clear read out of a positive result against a low background.

Reagents and Materials Provided

1. 100 strips packed in a tube with desiccant bags
2. 400 ml ImmunoStrip Extraction buffer, ready-to-use
3. 100 disposable pipettes
4. 100 extraction bags
5. 100 disposable cuvettes
6. 1 cuvette rack

Storage

1) Store the strips and the extraction buffer at 4°C. However, exposure to ambient temperature (10 - 30°C), such as during transport and use in the field, does not affect the quality. Keep the packaging (containing desiccant bags) always hermetically closed. Absorbed moisture by the strips can lead to poor results or even complete failure of the test.

2) Strips must be used before the expiration date indicated on the label of the packaging.

Plate Preparation

Note:

Not all ImmunoStrip are run with the same extraction buffer or the same dilution. Refer to the indications on the specific Product information and use the buffer which is part of the complete kit.

Assay Procedure

- 1) Place approx. 0.1 g of leaf (corresponds to the size of 1 coin or about 5 cm² into an extraction bag and add 3 ml of ImmunoStrip extraction buffer A with a disposable pipette (1:30 w/v).
- 2) Homogenize the tissue with a handheld homogenizer with a few movements for not more than 2-3 seconds
- 3) Transfer 2 drops of extract and 2 drops of extraction buffer into a cuvette.
- 4) Insert the end of the strip marked sample into the extract and observe formation of colored bands.

Calculation

Sensitivity was comparable to the DAS-ELISA format and strongest coloration of testbands was obtained with a 1:60 to 1:120 (w/v) dilution of an extract of infected potato leaves.

Interpretation of Results

- 1) Both a strong test line and a strong control line are obtained with samples containing a high pathogen concentration.
- 2) A test line which appears weaker than the control line is typical for samples with low antigen (pathogen) concentration.
- 3) If only the control line appears, no detectable antigen is present in the sample. A very faint test line occasionally observed after 10-15 minutes should be interpreted as negative reaction.
- 4) If neither test line nor control line become visible, the test is invalid and should be repeated with a fresh strip.
- 5) A green test line without red component, which might be occasionally observed, should be interpreted as negative result. Repeat the test with a more diluted sample.

Performance Characteristics

Note:

Not all ImmunoStrip are run with the same extraction buffer or the same dilution. Refer to the indications on the specific Product information and use the buffer which is part of the complete kit.

Sensitivity

Sensitivity was comparable to the DAS-ELISA format and strongest coloration of testbands was obtained with a 1:60 to 1:120 (w/v) dilution of an extract of infected potato leaves.

Specificity

The antibodies used for this ImmunoStrip assay were made against a potato isolate of PVS and specifically react with PVS.

Precautions

Note:

Not all ImmunoStrip are run with the same extraction buffer or the same dilution. Refer to the indications on the specific Product information and use the buffer which is part of the complete kit.