

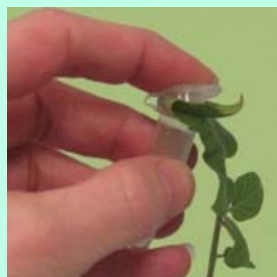


### Highlights:

- Results in 10 minutes or less
- Simple protocol
- Accurately detect ToANV/ToMarV and differentiate from other viruses
- Common Extraction with the EnviroLogix TSWV QuickStix Kit (AS 063 PT)

### Contents of Kit:

- 25 QuickStix Strips packed in moisture-resistant canisters
- 25 Disposable Tissue Extractors (each consisting of a tube with punch cap and pestle)
- EB6 Extraction Buffer



*Fold the leaf and punch once to collect two sample punches*



*Grind the tissue with pestle*

Catalog Number AS 064 PT 25

## Intended Use

The EnviroLogix QuickStix Kit for Tomato Apex Necrosis Virus (ToANV/ToMarV) screens for the presence of ToANV/ToMarV in tomato leaf or fruit tissue.

## How the Test Works

This test is for use on tissue that is showing symptoms of virus infection. To detect infected tissue with the EnviroLogix QuickStix Strip, the tissue must be extracted with the buffer provided.

Each QuickStix Strip has an absorbent pad at both ends. The protective tape with the arrow indicates which end of the strip to insert into the extraction tube. The sample travels up the membrane strip and is absorbed into the larger pad at the top of the strip. The portion of the strip between the protective tape and the absorbent pad at the top of the strip is used to view the reactions as described under “Interpreting the Results.”

## Sample Preparation

This sample extraction protocol is used for both the EnviroLogix QuickStix Kit for Tomato Apex Necrosis Virus (ToANV/ToMarV) and for Tomato Spotted Wilt Virus (TSWV), allowing for the convenience of testing for both viruses using the same sample.

1. Fold a section of leaf tissue and sandwich it between the cap and body of the Disposable Tissue Extractor tube. Closing the cap will collect **two** circular punches; tear off excess tissue that may not be fully cut by the cap before opening. Push the punches down into the tapered bottom of the tube with the pestle and grind for 30 seconds. Write the sample identification on the tube with a waterproof marker.
2. Holding the dropper bottle vertically, add 13 drops of buffer (~0.6 mL, a 1:20 weight to volume ratio) to the tissue sample. Re-grind the tissue by rotating the pestle against the sides of the tube with twisting motions. Continue this process for 20 to 30 seconds, or until the leaf tissue is well ground. Remove and discard pestle.

Note: To test tomato fruit (flesh), cut a plug measuring approximately 7x4x4 mm, yielding approximately 0.1g, and add it to the Extractor tube. Macerate the tissue with the pestle, add 13 drops of buffer, and macerate again. The recommended extraction ratio for tomato fruit is 1:5 w/v. The QuickStix will not perform properly if too much matrix (leaf or fruit) is used.

## How to Run the QuickStix Strip Test

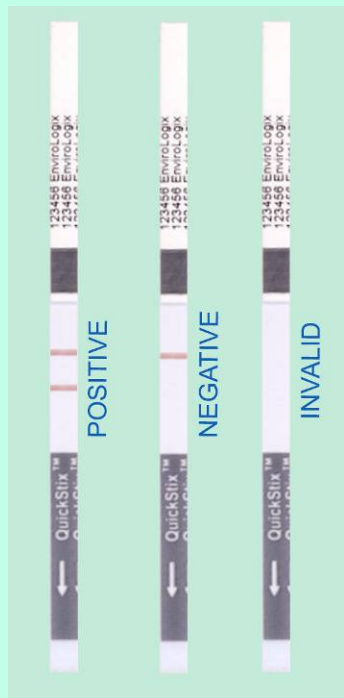
1. Allow refrigerated canisters and Extraction Buffer to come to room temperature before opening. Remove the QuickStix Strips to be used. Avoid bending the strips. Reseal the canister immediately.
2. Place the strip into the extraction tube. The sample will travel up the strip. Use the cardboard rack provided to support multiple vials.
3. Allow the strip to develop for 10 minutes before making final assay interpretations. Positive sample results may become obvious more quickly.



Add 13 drops of buffer and grind again



Add a test strip, wait 10 minutes



Any pink test line is considered positive

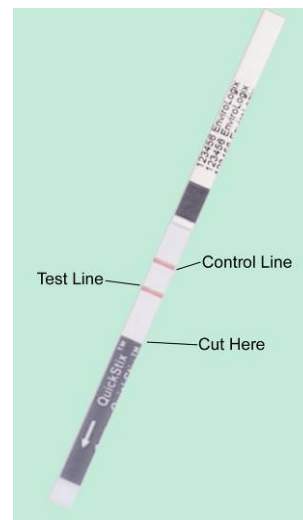
4. To retain the strip, cut off and discard the bottom section of the strip covered by the arrow tape.
5. To run TSWV and ToANV/ToMarV tests simultaneously, place both strips in the extraction tube at the same time and allow them to run for 10 minutes. Alternatively, the tests may also be run serially by placing one strip into the tube and allowing it to run for the full 10 minutes. If the result is negative, remove the first strip and place the second strip into the same extract, allowing that one to run for the full 10 minutes.

## Interpreting the Results

Development of the Control Line within 10 minutes indicates that the strip has functioned properly. Any strip that does not develop a Control Line should be discarded and the sample re-tested using another strip.

If the sample extract contains ToANV/ToMarV, a second line (Test Line) will develop on the membrane strip between the Control Line and the protective arrow tape. The results should be interpreted as positive for ToANV/ToMarV.

If no Test Line is observed after 10 minutes, the results should be interpreted as negative for the sample tested. See Precautions and Notes.



## Kit Storage

This QuickStix Kit should be stored refrigerated. The kit may be used in field applications; however, prolonged exposure to high temperatures may adversely affect the test results. Do not open the desiccated canister until ready to use the test strips. Do not exceed the stated expiration date on the kit.

## Cross Reactivity

The kit has shown no cross reactivity with Tomato Spotted Wilt Virus (TSWV), Impatiens Necrosis Spot Virus (INSV), Tobacco Mosaic Virus (TMV), Tomato Mosaic Virus (ToMV) and Cucumber Mosaic Virus (CMV).

## Precautions and Notes

- This kit is designed for screening the presence or absence of ToANV/ToMarV and is not meant to be quantitative. As with all tests, it is recommended that results be confirmed by an alternate method.
- The assay has been optimized to be used with the protocol provided in the kit. Deviation from this protocol may invalidate the results of the test.
- A strong positive result may safely be interpreted in as little as 5 minutes after sample addition. It is not safe, however, to conclude that a sample is negative before a full 10 minutes has elapsed. A weakly positive sample may require the full 10 minutes for a distinct Test Line to appear.
- A negative result does not preclude the presence of ToANV/ToMarV in other areas or at other times.
- Protect all components from hot or cold extremes of temperature when not in use. Do not leave in direct sunlight or in vehicle. A small portable cooler is recommended for prolonged field testing applications to protect the kit from extreme temperatures.



**For Technical Support  
Contact Us At:**

**EnviroLogix**  
500 Riverside Industrial  
Parkway  
Portland, ME 04103-1486  
USA

**Tel: (207) 797-0300**  
**Toll Free: 866-408-4597**  
**Fax: (207) 797-7533**

e-mail:  
[horticulture@envirologix.com](mailto:horticulture@envirologix.com)

website:  
[www.envirologix.com](http://www.envirologix.com)



## LIMITED WARRANTY

EnviroLogix Inc. (“EnviroLogix”) warrants the products sold hereunder (“the Products”) against defects in materials and workmanship when used in accordance with the applicable instructions for a period not to extend beyond a product’s printed expiration date. If the Products do not conform to this Limited Warranty and the customer notifies EnviroLogix in writing of such defects during the warranty period, including an offer by the customer to return the Products to EnviroLogix for evaluation, EnviroLogix will repair or replace, at its option, any product or part thereof that proves defective in materials or workmanship within the warranty period.

**ENVIROLOGIX MAKES NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The warranty provided herein and the data, specifications and descriptions of EnviroLogix products appearing in EnviroLogix published catalogues and product literature are EnviroLogix’ sole representations concerning the Products and warranty. No other statements or representations, written or oral, by EnviroLogix’ employees, agents or representatives, except written statements signed by a duly authorized officer of EnviroLogix Inc., are authorized; they should not be relied upon by the customer and are not a part of the contract of sale or of this warranty.

EnviroLogix does not warrant against damages or defects arising in shipping or handling, or out of accident or improper or abnormal use of the Products; against defects in products or components not manufactured by EnviroLogix, or against damages resulting from such non-EnviroLogix made products or components. EnviroLogix passes on to customer the warranty it received (if any) from the maker thereof of such non-EnviroLogix made products or components. This warranty also does not apply to Products to which changes or modifications have been made or attempted by persons other than pursuant to written authorization by EnviroLogix.

**THIS WARRANTY IS EXCLUSIVE.** The sole and exclusive obligation of EnviroLogix shall be to repair or replace the defective Products in the manner and for the period provided above. EnviroLogix shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall EnviroLogix be liable for incidental, special, or consequential damages.

This Limited Warranty states the entire obligation of EnviroLogix with respect to the Products. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

## License

EnviroLogix has developed this kit using proprietary reagents.

*EnviroLogix, the EnviroLogix logo, and QuickStix are trademarks of EnviroLogix Inc.*

© EnviroLogix 2009