

# QuickStix™ Combo Kit for 2mEPSPS & LibertyLink® (*bar*) Cotton Seed

## Highlights:

- Recognizes 2mEPSPS and PAT/*bar* endotoxins
- Results in 10 minutes or less
- Available as 100-strip individual kits, or bulk-packaged strips

## Contents of Kit:

- 100 QuickStix Combo Strips packed in two moisture-resistant canisters
- 100 Extraction Tubes (optional item with bulk packaging)
- EB2 Extraction Buffer

## Items Not Provided:

- Repeating pipetter or other means of dispensing 0.5 mL

Contact EnviroLogix to order bulk-packaged kits. Bulk kits include EB2 Extraction Buffer Concentrate. To prepare 1 liter, mix 50 mL 20X Concentrate with 950 mL of distilled or deionized water. Store refrigerated when not in use; allow to come to room temperature before using.



Crush Seeds

Catalog Number AS 089 ST

## Intended Use

The EnviroLogix QuickStix Combo Kit for 2mEPSPS & LibertyLink (*bar*) is designed to extract and detect the presence of these endotoxins at the levels typically expressed in genetically modified corn or cotton plant tissue and seed. The combo strips will recognize both 2mEPSPS and PAT/*bar* endotoxins in separate regions of the same strip.

## How the Test Works

Crops that have been genetically modified express proteins in their leaf and seed. To detect these 2mEPSPS and PAT/*bar* proteins with the EnviroLogix QuickStix Combo Strip, the sample must be extracted and the proteins solubilized in the Extraction Buffer provided.

Each Combo Strip has an absorbent pad at each end. 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

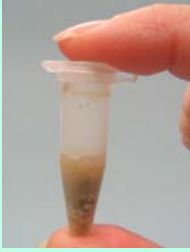
**Note:** If Extraction Buffer has been refrigerated, allow it to warm up to room temperature before preparing samples.

### To extract seed:

1. Crush a single seed (*Suggestion: use pliers with seed in microcentrifuge tube or resealable plastic bag*). Transfer to an extraction tube marked with sample identification. Note: Complete crushing of seed improves extraction efficiency and test performance.
2. Add 0.5 mL Extraction Buffer.
3. Close the tube cap securely. Shake the tube vigorously for 20 to 30 seconds, using an **up-and-down motion**, ensuring that the crushed seed and buffer are **well** mixed. Allow the solid material to settle to the bottom of the tube. The cotton seed extract takes on a yellow to brown opaque color when the samples are prepared properly.
4. Use caution to prevent sample-to-sample cross-contamination with plant tissue, fluids, crushing equipment (*pliers*) or disposables. Be sure to use a new tube for each sample tested.

## How to Run the QuickStix Strip Test

1. Allow refrigerated canisters to come to room temperature before opening. Remove the Combo Strips to be used. Avoid bending the strips. Reseal the canister immediately.



Extract Seed Sample



Insert QuickStix

- Place the strip into the extraction tube. The sample will travel up the strip. Use a rack to support multiple tubes if needed.
- Allow the strip to develop for 10 minutes before making final assay interpretations. Positive sample results may become obvious much more quickly.
- To retain the strip, cut off and discard the bottom section of the strip covered by the arrow tape.

## Interpreting the Results

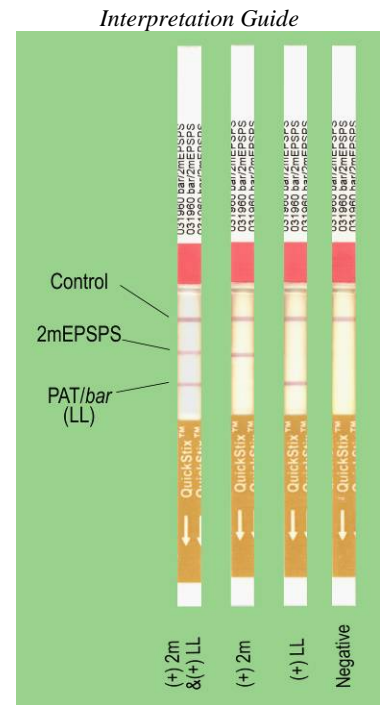
Development of the Control Line within 10 minutes indicates that the strip has functioned properly. Any strip that does not develop a Control Line should be discarded and the sample re-tested using another strip.

**One Line** – If the extract is from a negative sample, the strip will only show the Control Line. Development of the Control Line within 7 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.

**Three Lines** – If the extract is from a sample containing both 2mEPSPS and PAT/bar proteins, a total of three lines will appear.

**Two Lines** – If the extract contains either 2mEPSPS or PAT/bar proteins, the strip will develop two lines. To identify the positive Test Line, compare the strip to the Interpretation Guide.

Extracts containing 2mEPSPS protein will exhibit a Test Line about 5 mm below the Control Line; extracts containing PAT/bar protein will exhibit a Test Line about 10 mm below the Control Line.



*Any clearly discernable pink Test Line is considered positive*

## Kit Storage

This QuickStix Kit can be stored at room temperature, or refrigerated for a longer shelf life. Note the shelf life on the kit box for each storage temperature. 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.

## Precautions and Notes

- This kit is designed for screening for presence or absence only and is not meant to be quantitative.
- As with all tests, it is recommended that results be confirmed with an alternate method if necessary.
- The assay has been optimized using the protocol and buffer provided in the kit. Deviation from this protocol may invalidate the results of the test.

- The results generated through the proper use of this kit reflect the condition of the working sample directly tested. Extrapolation as to the condition of the originating lot from which the working sample was derived should be based on sound sampling procedures and statistical calculations which address random sampling effects, non-random seed lot sampling effects, and assay system uncertainty. A negative result obtained when properly testing the working sample does not necessarily mean the originating lot is entirely negative for the analyte or protein in question.
- A negative result with this kit does not mean that the sampled tissue has not been otherwise genetically modified.
- Warning: a strong positive result may safely be interpreted in as little as 2 minutes after sample addition. It is not safe, however, to conclude that a sample is negative before a full 10 minutes has elapsed, as a weak positive sample may require the full 10 minutes for a distinct Test Line to appear.
- Protect all components from hot or cold extremes of temperature when not in use. Do not leave in direct sunlight or in vehicle.



**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:  
***info@envirologix.com***

website:  
***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.

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

© EnviroLogix 2011