

Catalog Number AQ 017 BG

### Highlights:

- Quantitative results in 10 minutes
- Available as 100-strip kits or in bulk packaging

### Contents of Kit:

- 100 QuickStix Strips packed in two moisture-resistant canisters
- 100 fixed volume transfer pipettes (250 microliters)
- 100 reaction vials

### Items Not Provided:

- Oster® Sunbeam blender, 4000 series or equivalent
- Ice blade with rubber gasket
- ½ pint (8 oz.) Mini blender jars
- Threaded bottom cap
- Protective cover for blender jar while grinding
- Tap water
- QuickScan System

For sampling scenarios at different screening or confidence levels, refer to the USDA/GIPSA Excel spreadsheet described in Precautions and Notes, or call EnviroLogix Technical Support for assistance.

**Calculate water volume:**  
 Grams canola seed x 5  
 = mL of tap water to add

## Intended Use

The QuickStix Kit for QuickScan – CP4 EPSPS detects and quantifies CP4 EPSPS protein at the levels typically expressed in Roundup Ready canola. The sensitivity of these QuickStix Strips is 0.1% (i.e. one seed in 1000).

## How the Test Works

In order to detect the CP4 EPSPS protein expressed by Roundup Ready canola, the sample must first be extracted to solubilize the protein. Each QuickStix Strip has an absorbent pad at each end. The protective tape with the arrow indicates the end of the strip to insert into the sample cup. The sample will travel up the membrane strip and be 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 interpret the reactions as described under “Interpreting the Results.” Results are scanned and interpreted quantitatively with the EnviroLogix QuickScan System. Please avoid bending the strips.

## Sample Preparation

1. Collect a composite sample according to USDA/GIPSA instructions found in the Precautions and Notes section. **A sub-sample size of at least 20 grams is required to insure an accurate quantitation of the larger sample.**
2. Calculate water volume needed for sample preparation. This method calls for a water volume to sample weight ratio of **5 to 1**.

*Example Calculation using a 20g sub-sample*

*20g x 5mL = 100 mL water for extraction*

3. Weigh sample into the blender jar.
4. Put rubber gasket then blade atop the jar.
5. Attach black blender base to jar and hand tighten.
6. Invert and put the blender jar on the blender motor, turn blender on high for 30 seconds.
7. Remove the blender jar, invert and tap. Remove the base and blade assembly. Visually inspect to ensure that every seed has been broken.
8. Add the volume of tap water calculated above.
9. Put white lid on the blender jar. Shake the sample for 30 seconds. Let sample settle (approximately 30 seconds).
10. Dispense 250 µL extract into reaction vial using disposable fixed volume pipette provided with the kit; avoid particulates.
11. To prevent cross-contamination, use a new transfer pipette and reaction vial for each sample.



*Weigh sample into blender jar, grind*



Add calculated volume of water



Shake to mix,  
allow to settle briefly



Pipette sample into vial

Strip must develop a Control Line to be valid – cut where indicated and read in QuickScan System

#### USDA References:

- <http://archive.gipsa.usda.gov/reference-library/handbooks/grain-insp/grbook1/bk1.pdf> - USDA Grain Inspection Handbook, Book 1, Grain Sampling.
- <http://archive.gipsa.usda.gov/biotech/sample2.htm> - Guidance document entitled Sampling for the Detection of Biotech Grains.
- <http://archive.gipsa.usda.gov/biotech/sample1.htm> - Practical Application of Sampling for the Detection of Biotech Grains.
- <http://archive.gipsa.usda.gov/biotech/samplingplan1.xls> - A simple to use Sample Planner (29K Excel Spreadsheet) that allows you to enter different assumptions of sample size, number of samples, acceptable quality level and to determine the probability of accepting lots with given concentration levels. It also plots the probabilities in graph form for easy interpretation. Specific data can be saved for documentation and future analyses.

## How to Run the QuickStix Strip Test

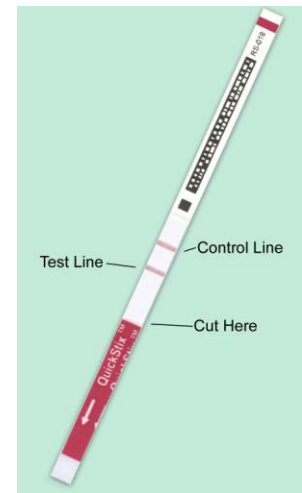
1. Allow refrigerated canisters to come to room temperature before opening. Remove the QuickStix Strips to be used. Avoid bending the strips. Reseal the canister immediately.
2. Place the strip into the sample cup provided, being sure to insert the end indicated by the arrows on the protective tape. The sample will travel up the strip.
3. Allow the strip to develop for 10 minutes before making final assay interpretations.
4. Immediately cut off and discard the bottom section of the strip covered by the arrow tape and place in QuickScan Reader. Strips must be read while still wet.

**NOTE: Use extreme caution to prevent sample-to-sample cross-contamination with grain, fluids, or disposables.**

## 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.

Results are scanned and interpreted quantitatively with the QuickScan System. Place QuickStix Strip into the carrier, slide in, and press “Read Test” on the screen. QuickScan will return a result as “% GMO” or “<LOD” (less than the Limit of Detection). Please consult the QuickScan User Manual for details.



## Kit Storage

QuickStix 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 to give a quantitative result using the QuickScan System and is not intended to be visually interpreted.
- This assay is calibrated using Certified Reference Materials 0304-B supplied by AOCS prepared in accordance to ISO Guides 30-35 and in accordance with EC No. 1829/2003 using Monsanto Roundup Ready canola.
- As with all tests, it is recommended that results be confirmed by an alternate method when necessary.
- 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. This assay was calibrated with 20g samples.
- 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.
- Protect all components from hot or cold extremes of temperature when not in use. Do not leave in direct sunlight or in a vehicle.



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