QuickStix™ Kit for QuickScan - CP4 EPSPS Canola Bulk Grain

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%-5% (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 via*l

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

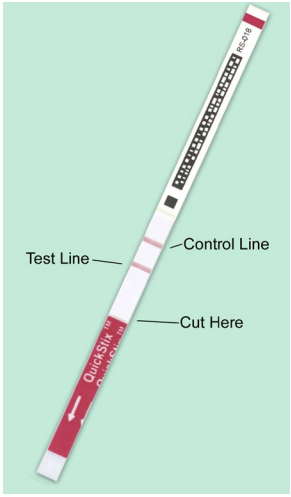
1. Allow refrigerated canisters to come to room temperature before opening. Remove the QuickStix Strips to be used. Avoid bending the strips. Reseal the canister immediately.
2. Place the strip into the sample cup provided, being sure to insert the end indicated by the arrows on the protective tape. 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.



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.

NEITHER ENVIROLOGIX NOR MONSANTO MAKES ANY OTHER WARRANTIES, EXPRESS 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 as well as reagents licensed from Monsanto Company.

Roundup Ready is a registered trademark of Monsanto Technology, LLC
EnviroLogix, the EnviroLogix logo, QuickScan, QuickStix, QuickComb, and Common Extraction are trademarks of EnviroLogix Inc.

© EnviroLogix 2013