

Highlights:

- Results in 5 minutes or less
- Simple protocol
- Available in 50-strip individual kit format or bulk packaging

Contents of Kit:

- 50 QuickTox Strips packed in a moisture-resistant canister
- 50 reaction vials
- 50 exact volume pipettes

Items Not Provided:

- Orbital/rotary shaker
- Plastic sample cups with lids*
- Solvent (50% ethanol)*
- 20 mesh sieve
- Graduated cylinder*
- Tap water
- Timer

* Available as accessories through EnviroLogix – see list on Page 4



Correct 20 mesh grind for corn



Measure ethanol

Catalog Number AS 109 BG

Intended Use

This EnviroLogix QuickTox Kit for Aflatoxin is designed to quickly extract and screen corn for the presence of total aflatoxin (B₁ and B₂) residues. The QuickTox Kit is designed to provide a qualitative screen for aflatoxin residues at a 10 ppb cutoff level in corn grain.

How the Test Works

A composite corn sample is first collected, then extracted to solubilize any aflatoxin present. Each sample should be ground to a fineness of 20 mesh and extracted with diluted solvent. This extract is further diluted for testing with the QuickTox Kit.

Each QuickTox Strip has an absorbent pad at each end. The protective tape with the arrow indicates which end of the strip to insert into the reaction vial. The sample extract 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.”

Preparation of the Sample

Step 1: Determine Number and Size of Sub-samples

1. Collect a composite corn sample according to your own sampling plan or USDA/GIPSA guidelines. Consult USDA/GIPSA reference documents such as <http://archive.gipsa.usda.gov/reference-library/handbooks/grain-insp/grbook1/bk1.pdf> to help design a plan that fits your needs.
2. Grind samples using a mill which provides a sample that passes through a 20 mesh sieve. Mix ground material thoroughly before sub-sampling.

Step 2: Extract corn sample

1. Weigh 10-50 grams of milled sample into a disposable sample cup with lid and add two volumes of 50% ethanol (2 mL per gram of sample, i.e. 10 grams, add 20 mL).

50% Ethanol Preparation: For 100 mL, measure 50 mL 100% ethanol [reagent grade or better], pour into suitable container with cap. Add 50 mL deionized or distilled water. Cap tightly and shake to mix. Use care when uncapping. Ethanol can also be purchased at 50% concentration.

NOTE: For GIPSA testing, a 50 gram sub-sample should be blended with 100 mL of solvent.

2. Cap sample cup tightly and place on shaker for 1 minute. Shaker should be operated at the highest speed. Alternately, samples may be shaken by hand for 1½ to 2 minutes.
3. Sample will immediately begin to separate into 2 layers. The top (yellowish) layer containing the aflatoxin residues will be used in testing.



Shake mechanically or by hand



Add water to vial



Add extract to vial and mix



Place strip in vial

Step 3: Dilute corn extract 1:2 with water

1. Using provided pipette, place 150 microliters (150 μ L) tap water into a reaction vial.
2. Using the same pipette, remove 150 μ L from the top (yellowish) layer of sample. Add extract to reaction vial containing water.
3. Mix water and sample extract thoroughly by stirring with the tip of the pipette.

NOTE: To ensure correct volumes are used to prepare the test sample, a fixed volume pipette is included with the kit. When a liquid drawn to the top of the straw end of the pipette is dispensed, 150 μ L will be expelled into the reaction vial. Any overflow is retained in the pipette. After diluting the sample, the final volume in the reaction vial should be 300 μ L. Do not reuse diluted samples. Use a new fixed volume pipette and reaction vial for each sample.

How to Run the QuickTox Strip Test

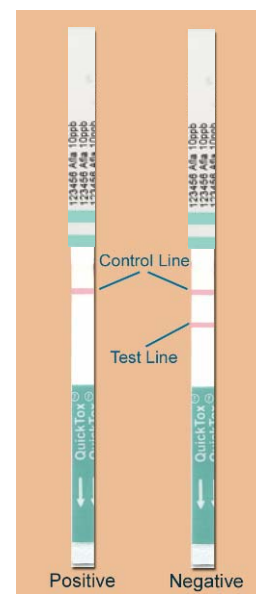
1. Allow refrigerated canisters to come to room temperature before opening. Remove the QuickTox Strips to be used. Avoid bending the strips. Reseal the canister immediately.
2. Place the strip into the reaction vial containing the diluted sample extract. The arrow tape on the end of the strip should point into the reaction vial.
3. The sample extract will travel up the strip (flow may not be visible immediately—this is expected and normal). Reaction vials will stand on their own or may be inserted into the cardboard rack provided.
4. Allow the strip to develop for 5 minutes before making final assay interpretations. Negative sample results may become obvious much more quickly (2-3 minutes).
5. To retain the strip, cut off and discard the bottom section of the strip covered by the arrow tape.

Interpreting the Results

Development of a Control Line within 5 minutes indicates that the strip has functioned properly. Any strip that does not develop a Control Line should be discarded. A second preparation of the extract (using a fresh 1:2 dilution) should be made and tested using another strip.

Negative Results – A corn sample containing aflatoxin residues of less than 10 ppb will develop 2 distinct lines in the test area. A negative test result can be interpreted as soon as a Test Line develops. **Any test line, no matter how light, should be considered less than 10 ppb.**

Positive Results – The QuickTox Kit for Aflatoxin – 10ppb is designed to screen for aflatoxin at levels of approximately 10 ppb or higher in corn grain samples. A sample containing aflatoxin residues of 10 ppb or higher will develop **1 distinct line**, the Control Line. **The absence of a Test Line should be interpreted as positive for aflatoxin residues greater than 10 ppb.** Allow the strip to develop for the full 5 minutes before concluding that the sample has tested positive for aflatoxin. You may wish to confirm positive results with a quantitative method to determine the precise level of contamination.





Optional Items Available:

- Negative Ground Corn Sample
- Positive Ground Corn Sample
- 50% Ethanol
- Graduated cylinder
- Set of 50 sample cups with caps

Kit Storage

This QuickTox Kit should be stored refrigerated. Note the shelf life on the kit box. 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 strips.

Precautions and Notes

- This kit is designed to screen for presence or absence only, and is not designed to be quantitative.
- This product is currently not applicable for use in testing any other crops.
- As with all screening tests, it is recommended that results be confirmed by an alternate method when necessary.
- The assay has been optimized for use with the protocol provided in the kit. Deviation from this protocol may invalidate the results of the test.
- The results generated through the proper use of this diagnostic tool 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 may safely be interpreted in as little as 2-3 minutes after beginning the test. It is not safe, however, to interpret positive results prior to 5 minutes.
- Protect all components from hot or cold extremes of temperature when not in use. Do not leave in direct sunlight or in vehicle.
- For convenience, controls and solvent can be ordered through EnviroLogix (see list, left).
- **IMPORTANT:** Ethanol is flammable and toxic. Avoid inhaling vapors or contact with the skin, eyes, or clothing. Wear personal protective equipment including safety glasses, nitrile gloves (**not latex**), a vapor mask and a lab coat when handling. Keep containers tightly closed and away from heat, sparks and open flame. Observe any applicable regulations when disposing of samples and kit reagents.
- Liquids containing aflatoxin should be treated by the addition of bleach (add a minimum of 10% of the total volume for 10 minutes). All labware should be soaked for 1 hour or more in a 30% solution of household bleach.



**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.

License

EnviroLogix has developed this kit using proprietary reagents.

EnviroLogix, the EnviroLogix logo, and QuickTox are trademarks of EnviroLogix Inc.

Patent Pending

© EnviroLogix 2006