

Envirologix QuickTox Kit for QuickScan Fumonisin Flex
Quantitative Fumonisin Test Kit

TABLE OF CONTENTS	PAGE
GENERAL INFORMATION.....	1
PREPARATION OF TESTING MATERIALS AND EQUIPMENT.....	1
EXTRACTION PROCEDURES.....	2
TEST PROCEDURES.....	2
SUPPLEMENTAL ANALYSIS.....	3
REPORTING AND CERTIFYING TEST RESULTS.....	3
EQUIPMENT AND SUPPLIES.....	3
STORAGE CONDITIONS AND PRECAUTIONS	4
REVISION HISTORY.....	5
FLOW CHART.....	6

GENERAL INFORMATION

The EnviroLogix QuickTox Kit for QuickScan Fumonisin Flex test kit uses lateral flow test strip technology that provides quantitative fumonisin test results.

The instructions presented in this document cover only the procedure for performing the analytical test for official inspections. For questions regarding this procedure, contact Dr. Ajit Ghosh of the Technology and Science Division by phone at 816-891-0417 or email at Ajit.K.Ghosh@usda.gov.

Refer to the Mycotoxin Handbook for information on use of this test kit in official inspections including sampling, general sample preparation (e.g., grinding and dividing), reporting and certification of test results, laboratory safety, and hazardous waste management. For questions regarding these policies and/or instructions, contact Patrick McCluskey of PPMB by phone at 816-659-8403 or email at Patrick.J.McCluskey@usda.gov.

Approved Test Kit Information	
Test Kit Vendor	EnviroLogix Inc. 1- 207-797-0300
Test Kit Name	QuickTox Kit for QuickScan Fumonisin Flex
Product Number	AQ 311 BG
Revision	0
Effective Date of Instructions	08/02/2016
Conformance Range	0.5 – 5 ppm
Number of analyses to cover Conformance Range	2
Type of Service	Quantitative
Supplemental Analysis	None
Extraction Method	Add 250 mL of water to 50-g sample, fully wet the sample followed by shaking vigorously for 1 minute.
Approved Commodities	Corn
Test kit format:	Lateral flow strip.
Detection method:	EnviroLogix QuickScan System.

PREPARATION OF TESTING MATERIALS AND EQUIPMENT

Allow all samples, water used for extraction, and test kit materials to equilibrate to room temperature before use. Turn on the incubator and set to 22°C for a minimum of 10 minutes before testing. Ensure the temperature display has stabilized and indicates ‘OK’ before starting the assay. Detailed instructions for use of the QuickScan System are supplied with each unit, and can also be found at

www.envirologix.com/quickscan. Note that the lot specific Multi-Matrix Barcode Card must be scanned just once for each kit lot to upload information to the QuickScan.

EXTRACTION PROCEDURES

- a. Transfer 50.0 ± 0.2 grams ground sample to an extraction container.
- b. Add 250 mL of distilled, deionized, or non-carbonated bottled water and seal the container. Ensure the sample is completely wetted.
- c. Shake the sample at 300 rpm on an orbital shaking platform for 1 minute.
- d. Allow the extract to settle to produce a clarified top layer (2 minutes).

TEST PROCEDURES

Quantitation Range for 1.5 – 5 ppm

- a. Place 2.5 mL of assay buffer DB6 into a blue Dilution Tube.
- b. Add 50 μ L of the top layer of the settled extract to the Dilution Tube, rinse the pipette tip, and mix well.
- c. Add 200 μ L of the diluted extract to a clear Reaction Tube.
- d. Place the Reaction Tube into the incubator and allow to equilibrate for 2 minutes at 22°C.
- e. Place an assay strip into the Reaction Tube with the arrow end down.
- f. Allow the strip to develop for 5 minutes at 22°C.
- g. Immediately after completion of the 5 minutes development, cut off and discard the arrow end of the strip.
- h. Place the strip in the QuickScan carrier with the barcode facing down and towards the handle, slide the carrier into the reader. Click the Read Test button to initiate the strip analysis.
- i. Once the result window opens, use the pull down menu under the dilution column to select 1:A.
- j. Add sample notations or comments in the results screen window, as applicable.

For samples scoring less than 1.5 ppm, a separate dilution is required, see next section.

Quantitation Range for 0.5 – 1.5 ppm

- a. Place 375 μ L of DB6 in a blue Dilution Tube. Add 50 μ L of the top layer of settled extract, rinse the pipette tip, and mix well.
- b. Add 200 μ L of the diluted extract to a clear Reaction Tube.
- c. Place the Reaction Tube into the incubator and allow to equilibrate for 2 min.

- d. Place an assay strip into the Reaction Tube with the arrow end down.
- e. Allow the strip to develop for 5 minutes.
- f. Immediately after completion of the 5-minute development, cut off and discard the arrow end of the strip.
- g. Place the strip in the carrier provided with the QuickScan system and place in the reader. Click the Read Test button to initiate the strip analysis.
- h. Once the result window opens, the field under the dilution column should display the default selection of "1:1".
- i. Add sample notations or comments in the results screen window, as applicable.

Results following this protocol are valid in the range of 0.5-1.5 ppm.

Detailed instructions for use of the QuickScan System are supplied with each unit, and can also be found at <http://www.envirologix.com/support/quickscan>.

SUPPLEMENTAL ANALYSIS

There are no approved Supplemental Analysis procedures to report results above 5 ppm for this test kit.

REPORTING AND CERTIFYING TEST RESULTS

Refer to the Mycotoxin Handbook for reporting and certification of test results. For questions regarding these instructions, contact Patrick McCluskey (816-659-8403 or Patrick.J.McCluskey@udsa.gov).

EQUIPMENT AND SUPPLIES

- a. Materials Supplied in Test Kits:
 - (1) 50 QuickTox Strips packed in a moisture-resistant canister
 - (2) 50 clear Reaction Tubes
 - (3) 50 blue Dilution Tubes
 - (4) 100 pipette tips (1-200 µL)
 - (5) 50 pipette tips (100-1000 µL)
 - (6) DB6 Buffer, kit lot specific
 - (7) Multi-Matrix Barcode Card, kit lot specific
- b. Materials Required but not Provided:

	<u>Catalog #</u>	<u>Part #</u>
(1) QuickScan System*	ACC 131	10050 + 10198
(2) Incubator base*	ACC BSH300	12195
(3) Incubator block*	ACC BSH1000-1213	12196
(4) Graduated cylinder*	ACC 068	11207
(5) Pipettes		
-to deliver 50 µL*	ACC051	11203
-to deliver 200 µL*	ACC067	11206
-to deliver 200-1000 µL *	ACC1303-Pro-1000	11964
(6) Bunn grinder or equivalent		
(7) 20-mesh screen		
(8) Extraction vessels		
(9) Orbital/rotary shaker		
(10) Timer		
(11) Scissors		
(12) Non-carbonated bottled, distilled, or deionized water		

*Available as Accessories

STORAGE CONDITIONS AND PRECAUTIONS

a. Storage Conditions:

- (1) Test kits should be stored refrigerated between 2 to 8 °C; prolonged exposure to high temperatures may adversely affect test results.
- (2) Bring kit components and water for extraction to ambient temperature before use. Do not open the desiccated canister until ready to use the strips.

b. Precautions:

- (1) Developing the test for 5 minutes and reading the test strip promptly are required for accurate results.
- (2) Do not use the test kits beyond the noted expiration date.
- (3) Protect all components from hot or cold temperatures, when not in use. Do not leave in direct sunlight or in a vehicle.
- (4) Follow the GIPSA issued procedures to run the test. Deviation from this protocol may invalidate test results reported using the test kit. Proper mixing, wetting of the sample, and accurate pipetting are essential for accurate results.

c. Testing Notes:

- (1) Take care not to contaminate the buffer solution--use a new pipette tip for each test, and keep covered when not in use.

- (2) Incomplete mixing or inaccurate pipetting will adversely affect test results.
- (3) **Avoid foam and particulates during pipetting and ensure that the pipette tip does not become clogged with particulates.**
- (4) Ensure your QuickScan System has been updated with the most recent software version, and that the barcode for each new kit lot is scanned before use.

REVISION HISTORY

Revision 0 (08/02/2016)

FLOW CHART

AQ-311-BG QuickTox Kit for QuickScan - Fumonisin Flex for Corn

