ENVIROLOGIX™

QuickTox™ Kit for QuickScan Zearalenone WWBS

Catalog Number AQ 212 BG
Part # 11537

Important Note: QuickScan Software Version 3.4.3-3 (Update 3) or later is required.

Intended Use

The QuickTox Kit for QuickScan Zearalenone WWBS is designed to quickly extract and screen sorghum, wheat and wheat bran for the presence of Zearalenone. The QuickTox Kit is designed to provide quantitative results in sorghum, wheat, and wheat bran for Zearalenone residues ranging from 50 ppb to 520 ppb. The limit of detection is 50 ppb.

How the Test Works

A composite wheat, wheat bran, or sorghum sample is first collected, then extracted to solubilize any Zearalenone present. Each sample should be ground to a fineness of 20 mesh and extracted with 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. At five minutes, the strip is cut off at the top of the arrow tape, the bottom pads are discarded, and the strip is inserted into the QuickScan reader to obtain quantitative results.

Preparation of the Sample

Please note: sample extract should be tested shortly after dilution with Buffer (Step 8). Make sure strips and Buffer are at room temperature and ready for use before the dilution step.

Determine number and size of sub-samples

1. Collect a composite sample according to your own sampling plan or USDA/ GIPSA guidelines. Consult USDA/GIPSA reference documents such as **www.gipsa.usda.gov/publications/fgis/handbooks/gihbk1_insphb.html** 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.

Extract sample

3. Weigh 20 grams of milled sample into a disposable sample cup with lid and add three volumes of 50% ethanol (3 mL per gram of sample, i.e. 20 grams, add 60 mL). To purchase or prepare a 50% ethanol solvent, see Precautions & Notes.
4. Cap sample cup tightly and disperse the 50% ethanol, making sure the entire sample is wetted. Place on shaker for 1 minute at the highest speed, or shake vigorously by hand for 2 minutes. Samples that are not thoroughly mixed and fully wetted may adversely affect test results due to incomplete extraction.
5. Centrifuge the extracted sample at 2000 x *g* (not RPM) for 30 seconds to obtain supernatant.

Highlights:

- *Quantitative results in only 5 minutes*
- *Read strips wet – no drying necessary*
- *Simple protocol*
- *No incubation equipment needed*

Contents of Kit:

- *50 QuickTox Strips packed in a moisture-resistant canister*
- *50 reaction vials*
- *100 pipette tips*
- *DB4 Buffer*
- *Available in 50-strip individual kit format or bulk packaging*

Items Not Provided:

- *Orbital/rotary shaker*
- *Centrifuge and associated disposables**
- *Plastic sample cups with lids**
- *Solvent (50% ethanol)**
- *20 mesh screen*
- *Graduated cylinder**
- *Pipette to deliver 100 µL**
- *Timer*
- *Scissors*
- *QuickScan System**

**Available as accessories – see list on Page 3*

Correct 20 mesh grind for wheat

Measure solvent, add to ground sample

Shake mechanically at highest speed for 1 minute (or vigorously by hand for 2 minutes)

Centrifuge extract for 30 seconds at 2000 x g

Add Buffer to vial first, then add extract; mix well with pipette tip

Place strip in vial

Dilute extract

6. Using a calibrated pipette with a **new tip**, place 100 microliters (100 µL) of DB4 Buffer into a reaction vial. Take care not to contaminate the Buffer—use a new tip for each test and keep buffer covered when not in use.
7. With **another new** pipette tip, remove 100 µL from the centrifuged extract and add it to the reaction vial containing Buffer.
8. **Mix Buffer and sample extract thoroughly** by stirring or drawing the liquids up and down in the pipette tip until the mixture is uniform.

NOTE: Samples that are not thoroughly mixed and/or accurately pipetted will adversely affect test results. After diluting the sample, the final volume in the reaction vial should be 200 µL. Do not reuse diluted samples. Use a new reaction vial for each sample. Use two pipette tips (one for Buffer, one for extract) 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 Buffer and 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.
4. Allow the strip to develop for 5 minutes. Immediately cut off and discard the bottom section of the strip covered by the arrow tape. Insert strip into the QuickScan reader for quantitation.

Use of the QuickScan System

Detailed instructions for use of the QuickScan system are supplied with each unit, and can also be found at www.envirologix.com/quickscan.

In summary, a strip is inserted face down in the carrier with the barcoded end closest to the handle. The carrier is inserted into the reader and the strips are read by touching or clicking on the "Read Test" area of the screen. Results are then recorded in an electronic worksheet, allowing each user to report and track data easily.

Results are reported in the range of 50 ppb to 520 ppb . Results less than 50 ppb are reported as "<LOD" (less than Limit of Detection) and results greater than 520 ppb are reported as ">520 ppb."

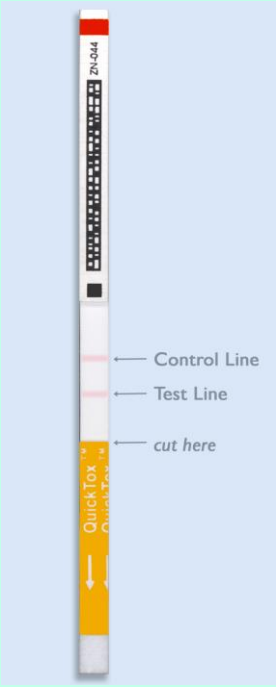
Kit Storage

This QuickTox Kit should be stored refrigerated. Note the shelf life on the kit box. 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 product is currently not applicable for use in testing any other crops.
- This assay is calibrated against reference samples supplied by Trilogy Analytical Laboratory, Washington, MO, and other vendors and associated HPLC data.
- 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. Proper and thorough mixing, along with accurate pipetting, are essential to accurate results.

Wait 5 minutes for results



Cut strip and place in QuickScan reader immediately —no drying step!

Place strip in QuickScan carrier

- 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.
- Strips should be read wet promptly at five 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, accessories and solvent can be ordered from EnviroLogix (see list, below). Purchase 50% ethanol, or prepare using 100% ethanol as follows: 50% Ethanol Preparation Instructions: 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.
- For preparation of 50% ethanol from a 95% ethanol stock , measure 52.6 ml of 95% ethanol (reagent grade or better), pour into suitable container with cap. Add 47.4 ml deionized or distilled water. Cap tightly and shake to mix. Use care when uncapping.
- **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 Zearalenone 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.

Accessories:

Available through EnviroLogix:

Item	*Catalog No.*	*Part #*
▪ QuickScan™ System	ACC 131	10050+10198
▪ Sample cups with lids (50/package)	ACC 012-50	11224
▪ Graduated cylinder (100 mL)	ACC 068	11207
▪ MiniPet pipette 100 µL (one/location free)	ACC 041	11202
▪ Microcentrifuge	ACC 064 E	11204
▪ Centrifugation Set: Disposables for 50 tests	ACC 010	11214
▪ 50% Ethanol	ACC-E26902	11156

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License

EnviroLogix has developed this kit using proprietary reagents.