



AgraStrip® Pro
Total Fumonisin WATEX®

Part #: 10006318

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AgraStrip® Pro Total Fumonisin WATEX®

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Intended Use

The AgraStrip® Pro Total Fumonisin WATEX® test kit is an immunochromatographic assay designed for the quantitative analysis of the presence of deoxynivalenol in food and feed components.

Performance characteristics

Limit of detection (LOD): 0.1 ppm (corn)

Limit of quantitation (LOQ): 0.2 ppm (corn)

Range of quantitation 1: 0 – 4.2 ppm

Range of quantitation 2: 3.1 – 44 ppm

Assay time: 4 minutes

About Fumonisin

Fumonisin is a recently discovered group of structurally related toxic metabolites of several fungal species. Of primary importance is their production by *Fusarium moniliforme*, which is a common contaminant of corn in many parts of the world. Ingestion of fumonisins in contaminated feed and food has been linked to both toxic and carcinogenic effects. The three most abundant fumonisins are FB1, FB2 and FB3. FB1 in particular has been linked to leukoencephalomalacia in horses, pulmonary edema in pigs and nephrotoxicity and liver cancer in rats. While the minimum dose leading to these conditions is still being investigated, the Mycotoxin Committee of the American Association of Veterinary Laboratory Diagnosticians recommends that feed containing more than 5 ppm of fumonisins not be given to horses. Epidemiological studies have indicated high rates of human esophageal cancer in areas having corn with fumonisin concentrations in the 1 – 2 ppm range. Toxicological studies have indicated that the carcinogenic potential of the less abundant FB2 and FB3 is similar to FB1. Fumonisin has been declared potential human carcinogen by the International Agency for Research on Cancer and the California Environmental Protection Agency.



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Product information

About AgraStrip® Pro Total Fumonisin WATEX®

The AgraStrip® Pro Total Fumonisin WATEX® test is a competitive immunochromatographic test that quantitatively determines total Fumonisin (B1, B2, G1 and G2) presence. This product is intended for use in grains, cereals, and other commodities.

Storage information

Upon receipt, immediately transfer the AgraStrip® Pro Total Fumonisin WATEX® Strips and Dilution Buffer to refrigerated storage and keep it at 2 – 8 °C (35 – 46 °F) when not in use.

Extraction Buffer Bags and consumables can be stored at room temperature (15 – 25 °C (59 – 77 °F)). Do not freeze. Do not use the kit beyond the expiration date indicated on the package.

Contents of the kit

The AgraStrip® Pro Total Fumonisin WATEX® test kit contains following items:

- 1 tube containing 40 AgraStrip® Pro Total Fumonisin WATEX® strips
- 1 bag containing 40 AgraStrip® Pro cartridges (10006165)
- 1 foil bag containing 40 AgraStrip® Pro WATEX® extraction buffer bags
- 1 bottle of 50 ml AgraStrip® Pro Total Fumonisin WATEX® dilution buffer
- 2 bags of 40 yellow pipette tips
- 1 bag of 40 blue pipette tips
- 2 bags of 20 microcentrifuge tubes (dilution tubes)
- 4 rolls of 10 pieces each of Whirl-Pak® filter bags
- 1 tube holder
- 1 QR card for the AgraVision® Pro Reader



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Materials required but not included

Extraction Procedure:

- Analytical balance (10002581 - 110V or 10002748 - 220V) with a weighing capacity up to 400 g
- Graduated cylinder (10002612) with a minimum capacity of 100 mL
- Distilled, de-ionized or bottled water for extraction
- Centrifuge

Assay Procedure:

- 10006324: AgraVision™ Pro Reader
- Single channel pipettes capable of pipetting up to 1000 µl or below fixed volume pipettes
- Fixed 100 µl pipette
- Fixed 1000 µl pipette

AgraStrip® Pro Total Fumonisin WATEX® test – Assay principle

The AgraStrip® Pro Total Fumonisin WATEX® test is a one-step lateral flow immuno-chromatographic assay for the quantitative screening of total fumonisin (FUM) present in samples. The test is based on a competition immunoassay format. The sample extract migrates through the conjugate pad containing FUM specific monoclonal antibodies conjugated to colloidal gold nanoparticles. In the case of the AgraStrip® Pro Total Fumonisin WATEX® test, if the sample is positive for FUM mycotoxin, the mycotoxin will bind to the nanoparticle-antibody complex (conjugate) and migrate into the detection zone. In the competitive format, the test line consists of immobilized analyte molecules (in this case, FUM mycotoxin) conjugated to a protein carrier. Any unbound FUM antibody will be captured in the test zone forming a visible line. As the FUM concentration in the sample increases, the FUM mycotoxin will be captured by the antibody-gold particles and reduce the interaction of antibody-gold particle with the test zone analyte, resulting in a reduced signal at the test line. The color intensity of the line is therefore inversely proportional to the concentration of FUM in the sample. The control line indicates proper flow through the strip and should always be visible in the control zone, irrespective of the presence/absence of FUM mycotoxin. The FUM test strips are measured using an AgraVision™ Pro Reader, which quantifies the concentration of FUM in the sample.



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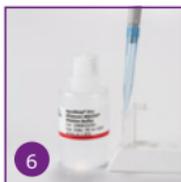
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Protocol at a glance

The following section gives only an overview of the AgraStrip® Pro test procedure when using the AgraVision™ Pro Reader. Before performing the assay, please read this package insert carefully.



1 Turn on the AgraVision™ Pro reader by plugging it in and follow the set up procedure according to the instructions.



6 Pipette 1000 µl assay dilution buffer into a dilution tube. Add 100 µl of sample extract. Take extract from the side opposite the side into which the sample was weighed.



2 Weigh in 10 g of adequately ground representative sample and add one extraction buffer bag into the side of the Whirl-Pak® filter bag, preferably on the same side as the sample.



7 Centrifuge the diluted sample extract for 30 seconds. Take the supernatant for further testing.



3 Add 50 ml of distilled water to Whirl-Pak® filter bag.



8 Insert the AgraStrip® Pro test strip into the AgraVision™ Pro cartridge. Transfer the cartridge containing the test strip into the port of the reader.



4 Seal the bag and shake vigorously for 2 minutes.



9 Enter sample ID and select matrix and quantitation range.



5 Allow sample to settle for 1 minute.



10 Add 100 µl sample to the AgraVision™ Pro cartridge.



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AgraStrip® Pro WATEX® test procedure

Before starting

Procedural guidelines:

- Make sure you have everything you need ready before starting the test.
- All reagents and kit components must be allowed to reach room temperature, 18 –30 °C (64 – 86 °F), before use.
- Do not return unused reagents into their original bottles.

Precautions:

- Store AgraStrip® Pro WATEX® test strips and dilution buffer at 2 – 8 °C (35 – 46 °F) when not in use, and do not use beyond the expiration date.
- Test strips must be kept inside their original tubes.
- Adhere to the instructions of the test procedures.
- Do not re-use test strips.
- Do not re-use AgraVision™ Pro cartridges.
- Treat all materials, containers and devices that are exposed to the sample or standards as if they were contaminated with toxin.
- The components in this test kit have been quality control tested as a standard batch unit. Do not mix components from different lot numbers.
- Dispose of all single-use materials, containers and devices appropriately after use.



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Reagent and sample preparation

Sample preparation

Sample Extraction – One for All WATEX®

**The sample extraction is applicable to all AgraStrip® Pro WATEX® products*

1. Obtain a representative sample of the specimen you want to analyze and grind it so that 95% will pass through a 20-mesh (sieve opening 0.84 mm), then thoroughly mix the subsample portion.
2. Weigh out 10 ± 0.1 g of ground sample into one side of a Whirl-Pak® filter bag.
3. Remove one extraction buffer bag from the foil pouch and add it to the same side of the Whirl-Pak® filter bag. The extraction buffer bag will dissolve completely during the extraction process.
4. Add 50 ml of distilled, deionized or bottled water and close the Whirl-Pak® filter bag.
5. Vigorously shake for 2 minutes at room temperature.
6. Open the Whirl-Pak® filter bag and place the filter on the same side as the sample.
7. Allow sample to settle for 1 minute.
8. Meanwhile, you can prepare the assay dilution step.

AgraVision™ Pro Reader set up

Turn the AgraVision™ Pro reader on prior to the test run.

Choose the appropriate testing target (mycotoxins).

The instrument will automatically heat up to the temperature needed to run the specific test.

Note: Do not insert the AgraStrip® Pro test strip until the instrument prompts you to do so.

Prior to the test run, a QR card containing information regarding the test method specific to the lot of the test kit must be inserted into the reader (the slot is located in the center of the port system). The information from



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the QR code will be saved. The QR code has to be scanned once per lot.

Note: We recommend screening and saving all QR cards for new test kit lots prior to running the test.

Note: For detailed instructions see the AgraVision™ Pro user manual.

Technical support

Not sure if the test works with your specific samples or matrices? Let our longstanding experience in mycotoxin testing work for you. Contact the technical sales representative in your region to know more.



Assay Protocol

Extract Dilution

1. Add 1000 µL dilution buffer using the blue pipette tip, and then add 100 µL sample extract using yellow or white pipette tip into the dilution buffer and mix well. This represents a 1:11 with dilution. Extract should be pipetted from the side of filter bag opposite the ground sample. If the sample has a large foam head, tilt the bag for easier access to the supernatant below.

Note: Diluted samples must be used within one hour, otherwise they are no longer effective.

Note: Make sure the pipette tip has been completely emptied.

2. The diluted sample must be centrifuged for 30 seconds at 2000 g using an appropriate device, such as a microcentrifuge. Then, carefully pipette up the supernatant. The sample supernatant is now ready for testing.

Quantitation range 1: 0 – 4.2 ppm

1. Insert an AgraStrip® Pro test strip into the AgraVision™ Pro cartridge.
2. Insert the AgraVision™ Pro cartridge containing the test strip into any empty port/slot within the AgraVision™ Pro reader.
3. The data matrix code on the test strip will be recognized by the reader. The reader automatically detects the type of test and the lot ID.
4. Enter the sample ID and choose the quantitation range and sample matrix then press enter (tick mark). Wait until a flashing drop prompts the user to add the sample. Add 100 µl of the diluted centrifuged extract into the back of the AgraVision™ Pro cartridge.

The AgraVision™ Pro reader detects the fluid front in the cartridge and will automatically start the timer for the incubation. Additional samples can be tested using the other available 3 slots of the system in parallel.

5. The test results will be automatically displayed on the relevant slot of the AgraVision™ reader.



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Quantitation range 2: 3.1 – 44 ppm

1. If the reader detects a concentration **greater than 4.2 ppm**, the previously diluted sample extract (diluted extract from quantitation range 1) can be further diluted at a ratio of 1:11 (i.e. use a blue pipette tip to add 1000 µL of dilution buffer to a dilution tube. Use a yellow pipette tip to add 100 µL of previously diluted extract to the dilution buffer). An additional measurement should be performed by repeating steps (1) – (5) of the test procedure.

Limit of detection (LOD): 0.1 ppm

Limit of quantitation (LOQ): 0.2 ppm

Range of quantitation 1: 0 – 4.2 ppm

Range of quantitation 2: 3.1 – 44 ppm

Note: AgraStrip® Pro Total Fumonisin WATEX® tests give quantitative results in the above defined quantitation range. For example, if the quantitation range is 0 – 4.2 ppm and the test result 4.3 ppm it will be displayed as > 4.2 ppm. If the result is lower than the second quantitation range (e.g. 3.1 – 44 ppm) it will be reported as < 3.1 ppm.



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Warranty and Liabilities

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