Glyphosate in Matrix
Lateral Flow General Validation Procedure for Solids or Liquids

1. Intended Use
For the detection of Glyphosate in matrix.

2. Materials and Reagents Required
Analytical balance
40 mL glass vials with Teflon-lined caps
4 mL glass vials with Teflon-lined caps
25mL graduated cylinder or disposable pipettes
Micropipettes with disposable plastic tips
Vortex mixer
Shaker or vial holder with insert retainer for vortex mixer
Centrifuge
Timer
ABRAXIS® Glyphosate Spiking Solution, 10 ppm; 1 mL (PN 301358)
ABRAXIS® Glyphosate, Dipstick Test Kit (PN 500095 or 500098)

3. Notes and Precautions
- Some matrices may need extraction buffers such as Sodium hydroxide, Hydrochloric acid or Deionized water. If using sodium hydroxide or Hydrochloric acid, handle with care. Wear appropriate protective clothing (gloves, glasses, etc.). Avoid contact with skin and mucous membranes. If contact occurs, wash with copious amounts of water and seek appropriate medical attention.
- For testing it is recommended to use 10 strips for known Blank and Low spiked samples, 5 strips for Medium and High spiked samples, for a total of 30 strips.
- This procedure is for research use only. It is not intended for diagnostic procedures.

4. Procedure for Solids
4.1. Weigh 1 gram of ground material (flour-like consistency, using food processor, Vitamix blender, IKA grinder, or mortar and pestle) – Optionally, this is where you can spike glyphosate.
4.2. Add 20 mL diH2O (20-fold dilution).
4.3. Vortex to mix and then store on rotator for 10 minutes around 45 rpm.
4.4. Let sample settle for at least two minutes to separate the particles.
4.5. Remove 2 mL of extract to 2 mL microcentrifuge tube. Alternatively, syringe filter with Environmental Express 0.2 µm PES (PN SF020E).
4.6. Centrifuge for 5 minutes at 8100xg (if not using syringe filter).
4.7. Transfer the supernatant into a clean vial.
4.8. The total dilution is 20-fold – 10.0 ppb LOQ.

NOTE: To determine any matrix interferences, it is recommended that a 1:1 serial dilution in deionized or distilled water (remove 2 mL of 20-fold extract to 2 mL of water = 40-fold; remove 2 mL of 40-fold extract to 2 mL of water = 80-fold, et al) be done.

5. Procedure for Liquids
5.1. Pipette 1.0 mL of the liquid sample to appropriately labeled test tube and dilute with 4.0 µL of mL diH2O. Vortex 30 seconds to mix.
5.2. If particles are present, remove 2 mL of extract to 2 mL microcentrifuge tube. Alternatively, syringe filter with Environmental Express 0.2 µm PES (PN SF020E).

5.3. Centrifuge for 5 minutes at 8100xg (if not using syringe filter).
5.4. Transfer the supernatant into a clean vial.
5.5. The total dilution is 5-fold – 2.5 ppb LOQ.

NOTE: To determine any matrix interferences, it is recommended that a 1:1 serial dilution in deionized water or distilled water (remove 1 mL of 5-fold extract to 1 mL of water = 10-fold; remove 1 mL of 10-fold extract to 1 mL of sample diluent = 20-fold, et al) be done.

6. Evaluation of Results

Sample concentration is determined by comparison of the intensity of the test line to the intensity of the control line on the same test strip. Although control line intensity may vary, a visible control line must be present for results to be considered valid. Test strips with a test line which is darker than or of equal intensity to the control line indicates a result which is below the limit of detection of the test. Test strips with a test line which is lighter than the control line indicates a result which is between the LOQ and the high spike. Test strips with a very faint test line or no test line visible indicates a result which is > the high spike. Results should be determined within 5-10 minutes after completion of the strip test procedure. Determination made using strips which have dried for more or less than the required time may be inaccurate, as line intensities may vary with drying time.

Control Line	***Test Line***	***Interpretation***
No control line present	No test line present	Invalid result
Control line present	Very faint or no test line present	> High Spike
Control line present	Moderate intensity test line present	Between LOQ and High Spike

The appearance of test strips may also be compared to the illustration below to determine approximate sample concentration ranges. Please note that the illustration is intended for the demonstration of test line to control line intensity only. Results should not be determined by comparing the intensity of test lines from test strips to the test line intensity of the illustration, as the overall intensity of test strips may vary slightly with different lots of reagents. To obtain semi-quantitative results, solutions of known Glyphosate concentration (control solutions) must be tested concurrently with samples. Sample test line intensities can then be compared with control solution test line intensities, yielding approximate sample concentrations. Do not use strips run previously to determine semi-quantitative sample concentrations, as test line intensities may vary once strips are completely dry.

7. For ordering or technical assistance contact:

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