

ABRAXIS® Glyphosate in Raw Buckwheat Groats Sample Preparation for Strip Test

1. Intended Use

For the detection of Glyphosate in raw buckwheat groats.

2. Sensitivity

100 ppb in matrix

3. Materials and Reagents Required

Analytical balance

20 mL or greater volume size of plastic/glass bottles or vials

Serological pipette or graduated cylinder

Microcentrifuge tubes, 2.0 mL

Microcentrifuge device capable of $\geq 8000 \times g$

Disposable pipettes (optional)

Micropipettes with disposable plastic tips (optional)

Vortex mixer (optional)

Timer

Rotator and/or shaker

Blender or grinder device (i.e. food processor, coffee bean grinder, etc.) Optional: Grinder, IKA Tube

Mill control PN 500104. Used in conjunction with disposable grinding tubes, MT 40 PN 500105

Deionized or distilled water

ABRAXIS® Glyphosate Strip Test (PN 500095 [20T]; PN 500098 [5T])

4. Notes and Precautions

This procedure is intended for use with raw buckwheat groats. Samples should be ground into a powder-like consistency using a blender or grinder device (i.e. food processor, coffee bean grinder, etc.). If using an IKA grinder, pour maximum of 30 grams of sample into the disposable grinder tube and grind in an IKA Tube Mill control grinder set at 25,000 rpm for 60 seconds, producing a fine powder. Other matrices should be thoroughly validated before use with this procedure.

5. Sample Preparation Procedure

- 5.1 Weigh 1.0 g of sample powder into an appropriately labeled bottle or vial.
- 5.2 Add 20 mL of deionized or distilled water. Vortex or shake to mix.
- 5.3 Place sample bottle/vial onto rotator or shaker for 10 minutes.
- 5.4 Transfer 2 mL of extract to an appropriately labeled microcentrifuge vial.
- 5.5 Centrifuge for 5 minutes at $\sim 8000 \times g$. Make sure the centrifuge is properly balanced.
- 5.6 Transfer 0.2 mL of supernatant to 1.8 mL of deionized or distilled water into an appropriately label vial.
- 5.7 Proceed to Sections E (Test Preparation) and F (Testing of Samples) in the Glyphosate Strip Test Kit user's guide.

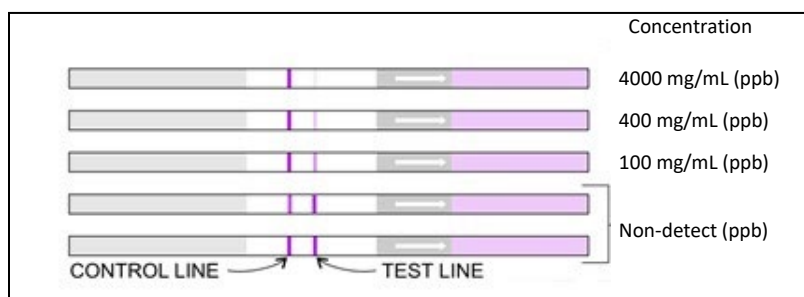
6. Evaluation of Results

Raw buckwheat groats 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 100 ppb and 4000 ppb. Test strips with a very faint test line or no test line visible indicates a result which is > 4000 ppb. 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.

<i>Control Line</i>	<i>Test Line</i>	<i>Interpretation</i>
No control line present	No test line present	Invalid result
Control line present	Very faint or no test line present	>4000 ng/mL (ppb)
Control line present	Moderate intensity test line present	Between 100 and 4000 ng/mL (ppb)

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 in the range of 0-4000 ppb, 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.



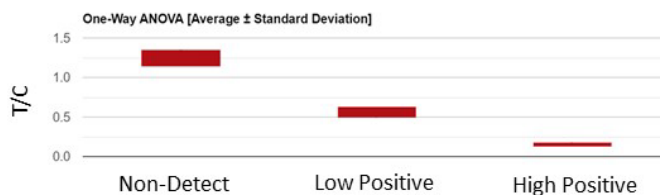
7. Performance Data

The Limit of Quantification (LOQ) values were determined by spiking glyphosate into a non-detect (<7.5 ppb by ELISA) residue matrix (to approximate these concentrations). Ten replicate test portions for each concentration were derivatized and then analyzed using the test strips.

Data Summary

Group	N	Mean T/C	STDEV T/C	%CV T/C
Non-Detect	10	1.25	0.10	8.4
Low Positive	10	0.56	0.07	12.6
High positive	10	0.16	0.02	10.4

T - Test line intensity
C - Control line intensity
T/C - ratio



Per one-way ANOVA analysis, a statistically significant difference ($P < 0.0001$) exists between the mean T/C values for the tested spike levels in the buckwheat sample.

Results:

All the blanks were non-detect. The low positive spike (100 ppb) samples were low positive, and all high positive spike (4000 ppb) samples were high positive. The ABRAXIS® Glyphosate Strip Test for raw buckwheat groats samples will detect 100 ppb or higher due to the 200-fold dilution required during sample preparation. At this level, the test line exhibits moderate intensity. At levels greater than 4000 ppb, the test line is faint or not visible.

8. Assistance

For ordering or technical assistance contact:

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