Glyphosate in Honey - Sample Preparation for Strip Test

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

2. Sensitivity
40 ppb in matrix

3. Materials and Reagents Required
Analytical balance
40 mL or greater volume size of plastic/glass bottles or vials
Serological pipette or graduated cylinder
Disposable pipettes (optional)
Micropipettes with disposable plastic tips (optional)
Vortex mixer
Timer
Rotator and/or shaker (optional)
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 honey (light and dark). Other matrices should be thoroughly validated before use with this procedure.

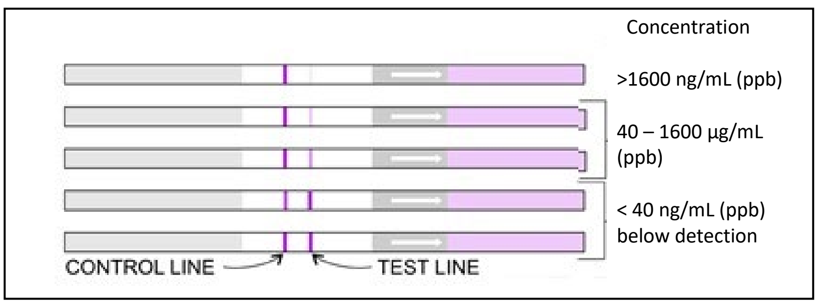
5. Sample Preparation Procedure

5.1 Weigh 0.5 g of honey sample into an appropriately labeled bottle or vial.
5.2 Add 10 mL of deionized or distilled water.
5.3 Vortex/mix until the sample has dissolved. The sample bottle/vial may be placed on a rotator/shaker until the sample has completely dissolved, 10 minutes.
5.4 After the honey sample has completely dissolved, add 30 mL of DI H_2O. Vortex/mix to homogenize.
5.5 Proceed to Sections E (Test Preparation) and F (Testing of Samples) in the Glyphosate Strip Test Kit user's guide.

6. Evaluation of Results
Honey 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 40 ppb and 1600 ppb. Test strips with a very faint test line or no test line visible indicates a result which is > 1600 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.

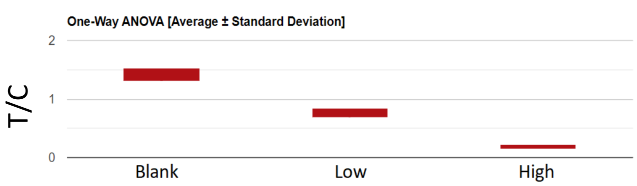
Control Line	*Test Line*	*Interpretation*
No control line present	No test line present	Invalid result
Control line present	Very faint or no test line present	>1600 ng/mL (ppb)
Control line present	Moderate intensity test line present	Between 40 and 1600 ng/mL (ppb)

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 0-1600 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). A minimum of ten replicate test portions for each concentration were derivatized and then analyzed using the test strips.



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 honey sample.

Data Summary

Group	Spike Level	N	Mean T/C	STDEV T/C	%CV T/C
1	Non-detect	14	1.41	0.12	8.5
2	Low Positive	12	0.76	0.08	10.5
3	High Positive	15	0.18	0.04	22.0

T - Test Line Intensity
C - Control Line Intensity
T/C - Concentration-Determining Ratio

Results:
All blanks were non-detect, the low positive spike (40 ppb) samples were low positive and high positive spike (1600 ppb) samples were high positive. The ABRAXIS® Glyphosate Strip Test for honey samples will detect 40 ppb or higher due to the 80-fold (eighty-fold) dilution required during sample preparation. At this level, the test line exhibits moderate intensity. At levels greater than 1600 ppb, the test line is faint or not visible.

8. Assistance

For ordering or technical assistance contact:

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795 Horsham Road | Fax: (215) 357 5232
Horsham, PA 19044 | Ordering: info.abraxis@us.goldstandarddiagnostics.com
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