Glyphosate in Raw Buckwheat Groats
Sample Preparation

1. Intended Use
For the detection of Glyphosate in ground raw buckwheat groats.

2. Sensitivity
7.5 ppb in matrix

3. Materials and Reagents Required
Analytical balance
Microcentrifuge tubes, 1.5 mL or 2.0 mL
Microcentrifuge
Micropipettes with disposable plastic tips
Glass vials – 4 mL and 20 mL with Teflon-lined caps
Deionized or distilled water
Blender or food processor [Optional: Grinder, IKA Tube Mill control (PN 500104)]
Serological pipettes, 5 mL or 10 Ml
Rotator and/or shaker
Vortex mixer
ABRAXIS® Glyphosate Sample Diluent (PN 500082)
ABRAXIS® Glyphosate Plate ELISA Kit (PN 500205)

4. Notes and Precautions
This procedure is intended for use with ground raw buckwheat groats. Other matrices should be thoroughly validated before use with this procedure.

- Samples should be ground in fine powder using a blender or a food processor. 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.
- Analysis should be performed with the ABRAXIS® Glyphosate Plate ELISA Kit as soon as possible after extraction.Samples should not sit more than one day in plastic microcentrifuge tubes before being diluted and analyzed.
- This procedure is for research use only. It is not intended for diagnostic procedures.

5. Procedure
5.1 Weigh 0.5 g of ground grain or flour samples to 20 mL glass vial.
5.2 Add 10 mL of deionized water to samples (1:20 dilution).
5.3 Vortex vigorously for 10 – 15 seconds and put samples on rotator or shaker for 10 minutes.
5.4 Remove from rotator or shaker and allow the sample to settle for at least 2 minutes.
5.5 Transfer 1.5 to 2 mL of the supernatant to an appropriately labeled microcentrifuge vial.
5.6 Centrifuge for 5 minutes at ~8000 x g. Make sure the centrifuge is properly balanced.
5.7 Add 800 µL of Glyphosate Sample Diluent to an appropriately labeled 4 mL glass vial. Add 200 µL of the supernatant (from 5.6) to the Glyphosate Diluent in the vial (1:5 dilution). Vortex.
5.8 This will then be analyzed as sample, see *Derivatization of Standards, Control and Samples* in the Test Preparation section of the ABRAXIS® Glyphosate Plate ELISA Kit user's guide.

6. Evaluation of Results
The ELISA results must be multiplied by a factor of 100 to account for the necessary dilution. Samples showing a concentration lower than Standard 1 (0.075 ppb) should be reported as < 7.5 ppb of Glyphosate. Samples showing

a higher concentration than Standard 5 (4.0 ppb) can be reported as > 400 ppb or diluted further and re-analyzed to obtain an accurate quantitative result.

7. For ordering or technical assistance contact:

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