

DETECTION OF ATRAZINE IN CORN OIL

MATRIX	Corn Oil
ANALYTE	Atrazine
RANGE OF DETECTION	10 to 500 ppb
MATERIALS	<p>Atrazine RaPID Assay, Kit and Sample Diluent.</p> <p><i>Reagents:</i> acetonitrile (pesticide grade).</p> <p><i>Equipment:</i> 15 mL polypropylene tubes with screw caps, 15 mL polypropylene centrifuge tubes, serological pipets, test tube rack and pan balance.</p>
EXTRACTION PROCEDURE	<p>Weigh 5 g of corn oil into a 15 mL polypropylene tube. Using a serological pipet add 5 mL of acetonitrile, cover with screw cap and shake for 30 seconds. Place the tube in a rack and allow the oil and acetonitrile phases to separate (approximately two minutes). Transfer 4 mL of the acetonitrile (upper) layer to a clean centrifuge tube using a serological pipet.</p> <p>Extract the oil layer again by adding another 5 mL of acetonitrile to it. Follow the procedure above. Transfer 4 mL of the acetonitrile layer to the test tube containing the first 4 mL that was removed. Mix the 8 mL of acetonitrile extract thoroughly.</p> <p>The extract should be free of any dispersed oil. Any oil present can be removed from the acetonitrile extract by centrifugation at 1000 x g for five minutes. The oil will be on the bottom.</p>
ANALYSIS	<p>Dilute the acetonitrile extract 1:50 in Atrazine Sample Diluent using serological pipets (e.g. 0.1 mL extract plus 4.9 mL Sample Diluent).</p> <p>Analyze the diluted extract as the "sample" according to the package insert for the Atrazine RaPID Assay.</p>
INTERPRETATION	<p>Calculate the atrazine concentration in oil by multiplying the assay result by the appropriate factors introduced by the procedure:</p> $\text{assay result (ppb)} \times \frac{\text{vol. acetonitrile (mL)}}{\text{wt. of oil (g)}} \times \frac{\text{vol. extract (mL)} + \text{vol. diluent (mL)}}{\text{vol. extract (mL)}}$ <p>For the procedure shown above:</p> $\text{assay result (ppb)} \times \frac{10}{5} \times \frac{0.1 + 4.9}{0.1} =$ <p>assay result (ppb) x 100 = concentration of atrazine in oil (ppb)</p>

**PROCEDURAL
NOTES**

If the calculated result is greater than 500 ppb in oil or a higher atrazine concentration range is of analytical interest, an additional 1:20 dilution of the 1:50 diluted extract is suggested. The assay result obtained on this sample is then multiplied by 2000 to determine the original concentration of atrazine in oil. The useful range of detection would then be 0.2 to 10 ppm atrazine.

**EXPECTED
RESULTS**

Due to the magnitude of the dilution correction factor used, the accuracy of the final result will depend on the care taken in making dilutions.

Corn oils were spiked with 0.1, 0.5 and 1 ppm atrazine before analysis by this procedure. Recovery of added atrazine averaged greater than 90% using the Atrazine RaPID Assay.

TECHNICAL ASSISTANCE

STRATEGIC DIAGNOSTICS INC.
128 Sandy Drive
Newark DE 19713

(800)544-8881
(302) 456-6789
FAX (302)456-6782