



Extraction of Pesticides from Tomato Using the QuEChERS Approach

(This method is applicable to all pigmented fruit and vegetables)

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UCT Products:

ECQUEU750CT-MP 4000 mg magnesium sulfate anhydrous, 1000 mg sodium chloride, 500 mg sodium citrate dibasic sesquihydrate, 1000 mg sodium citrate tribasic dihydrate

ECQUEU32CT 2 mL micro-centrifuge tube with 150 mg magnesium sulfate anhydrous, 25 mg primary secondary amine bonded phase (PSA) and 2.5 mg graphitized carbon black (GCB)

ECQUEU515CT 15 mL centrifuge tube with 900 mg magnesium sulfate anhydrous, 150 mg primary secondary amine (PSA) bonded phase and 15 mg graphitized carbon black (GCB)

1. Sample Preparation

- a) Add 15g of homogenized and hydrated tomato product (> 80% moisture) to a centrifuge tube
- b) Add 15 mL acetonitrile including internal standard
- c) Shake or vortex for 30 seconds
- d) Add contents of a package of **ECQUEU750CT-MP** to centrifuge tube
- e) Immediately, shake vigorously for 2 minutes
- f) Centrifuge for 2 minutes at 3450 rcf
- g) Draw 1 or 6 mL of supernatant for clean-up

2. Clean-Up

- a) For 1 mL of supernatant, use product **ECQUEU32CT**
- b) For 6 mL of supernatant, use product **ECQUEU515CT**
- c) Add supernatant to centrifuge tube and shake vigorously for 1 minute
- d) Centrifuge for 2 minutes at 3450 rcf

3. Analysis by GC (suggested)

- a) Transfer an aliquot of supernatant from step 2 to a centrifuge tube
- b) Add TPP solution and 1 ml of toluene
- c) Evaporate using nitrogen at 50 C to approximately 0.3 to 0.6 ml.
- d) Bring to 1 ml final volume with toluene
- e) Inject 8 μ L on LVI/GC/MS

4. Analysis by LC (suggested)

- a) Transfer 0.25 ml of supernatant from step 2 to a LC vial.
- b) Add TPP solution and 0.86 ml of 6.7 mM formic acid
- c) Analyze by LC/MS/MS

References:

QuEChERS AOAC Method 2007.01

Anastassiades, *et al* (2003) "Fast and Easy Multiresidue method employing acetonitrile extraction partitioning and dispersive solid-phase extraction for the determination of pesticide residues in product" Journal of AOAC International Vol 86 no. 2

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