16.10.09

AOAC Official Method 971.33
Residue (Acid-Insoluble) (Soil) in Fruits and Vegetables (Frozen)

Gravimetric Method
First Action 1971
Final Action 1973

Codex-Adopted–AOAC Method*

Remove frozen test sample from container. Place in weighed plastic bag, reweigh, and seal tightly with rubber band. Thaw test product by immersing bag in hot water and transfer contents to high-speed blender, washing inside of bag. Blend until test sample is disintegrated and transfer to 2 L beaker. Nearly fill beaker with H_2O and mix contents thoroughly by swirling. Let stand 10 min and decant supernate into second 2 L beaker. Refill first beaker with H_2O and repeat mixing. Fill second beaker with H_2O and mix by swirling. After 10 min, decant second beaker into third and first into second. Continue operation, decanting from third beaker into sink until vegetable material is washed from test sample. If many seeds settle, float them off with hot 15% NaCl solution, increasing NaCl concentration if necessary to complete flotation. Remove NaCl residue with hot water. Collect mineral residue from the 3 beakers on ashless filter paper, and discard filtrate. Ignite paper in weighed porcelain crucible over medium Bunsen flame and place in furnace 1 h at ca 600°C. Cool, add 5 mL HCl, and heat to bp. Cool, add 10 mL H_2O, and reheat to bp. Filter and wash free from acid. Ignite, ash as before, and weigh to determine acid-insoluble residue. Calculate % insoluble residue = weight acid-insoluble residue (g) 100/net weight sample (g).

Reference: *JAOAC* **54,** 581(1971).

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* Adopted as a Codex Defined Method (Type I) for ashing in mineral impurities of processed tomato concentrates.
Adopted as a Codex Defined Method (Type I) for ashing in mineral impurities of canned strawberries.
Adopted as a Codex Tentative Method (Type IV) for ashing of mineral impurities in jams (fruit preserves) and jellies.