**Results and Discussion**

**Study to extract samples with and without CH by manual shaking**

Other matrices; soil, wine, biologicals

Dispensive Step Extraction

Data and results

10

Determination of inertness of CH in the presence of matrix and pesticides

CH

Process samples the same

Homogenizers are inert ceramic pieces

Extraction

Disposable, can be used manually or with mechanical shakers

Step Extraction

Advancements in the analysis of other components

Investigate the ceramic homogenizers

30

Developed by the US FDA and EU Food Regulatory Agencies

Improve sample throughput

2

“SHAKING”

60

40

Q

70

Ceramic homogenizers addresses many of the “shaking” issues

Strobilurins

QuEChERS

Implementation

Break up salt agglomerates

Homogenizers in QuEChERS extraction

Extraction and analysis of pesticides in food product

Setup a timed extraction study

QuEChERS procedure is very efficient “just enough” sample preparation

PCB, PAH, Antibiotics, Pharmaceuticals, Toxins

Triazoles

Benzimidazoles

20

Drastically decreases “shaking” time by 70%

Carbamates

1

Weight and angled sides of the ceramic homogenizers increase

Other food

Description and characterization

With Ceramic Homogenizers

Increase grinding/pulverizing of homogenized matrix

Available in 3 sizes; 50 mL, 15 mL, and 2 mL

Experimental

Concerns and Variance with Procedure

1st Step Extraction

After addition of organic to sample, add extraction salts

Requires vigorous shaking, 1 min or greater

Variations is time and force shaking affect recovery

Variation from beginning to end of extraction, 100+ samples

Variations between technicians between labs

Affect recovery of pesticides

Graph 1

Average Recovery of Several Classes of Pesticides within 20 Second Shaking Extraction and Ceramic Homogenizers

Graph 2

Pesticides used in study: Acetamiprid, Carbendazim, Cypermethrin, Indoxacarbe, Indoxacarb, Methamidophos, Penconazole, Propoxur, Pymetrozine, Thiabendazole, Thiophanate

EPRW 2010

**References**