



**An automatic extraction method based on
automated pressurized liquid extraction
employing the EDGE instrument**

EDGE

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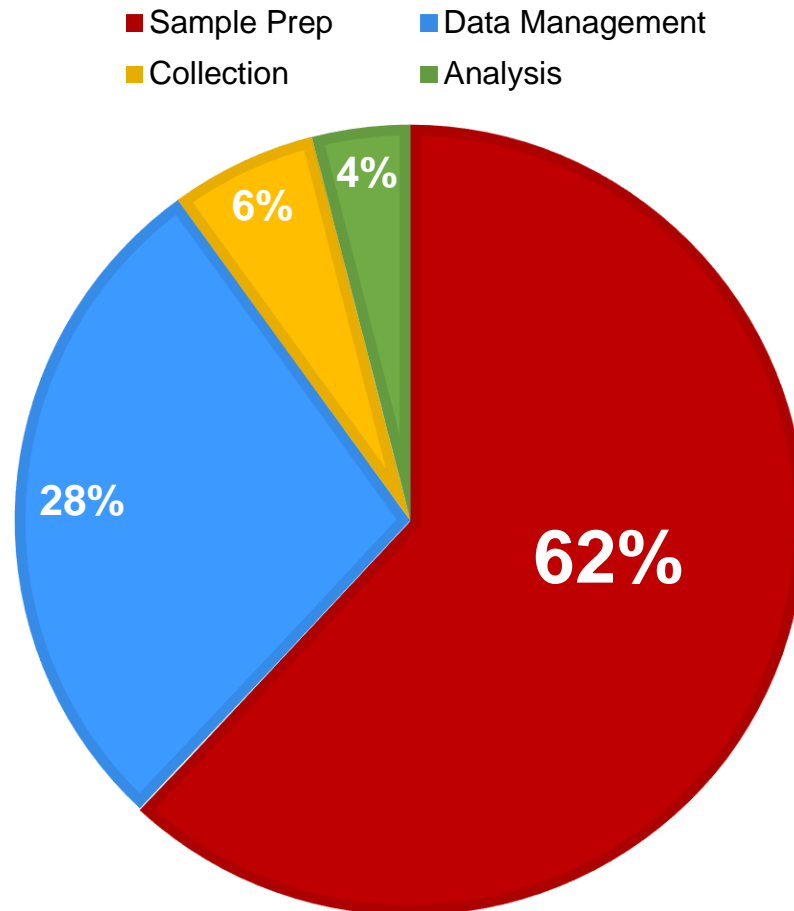


A Science-Based Technology Company

- At CEM, We Simplify Science
- Our passion is to transform markets with disruptive technologies that make things **faster, simpler**, and **smaller** to use...
- 30+ years ago CEM **transformed** the world of sample prep for **elemental analysis** with **microwave digestion**...
- Today we are doing the same with new breakthrough technology for **molecular analyses**.

Sample Preparation is the Bottleneck

Time Spent on Typical Chromatographic Analysis



Sample Preparation Techniques

- Microwave Extraction
- QuEChERS
- **Pressurized Fluid Extraction**
- Soxhlet
- Automated Soxhlet
- **Dispersive Solid Phase Extraction (dSPE)**

Limitations

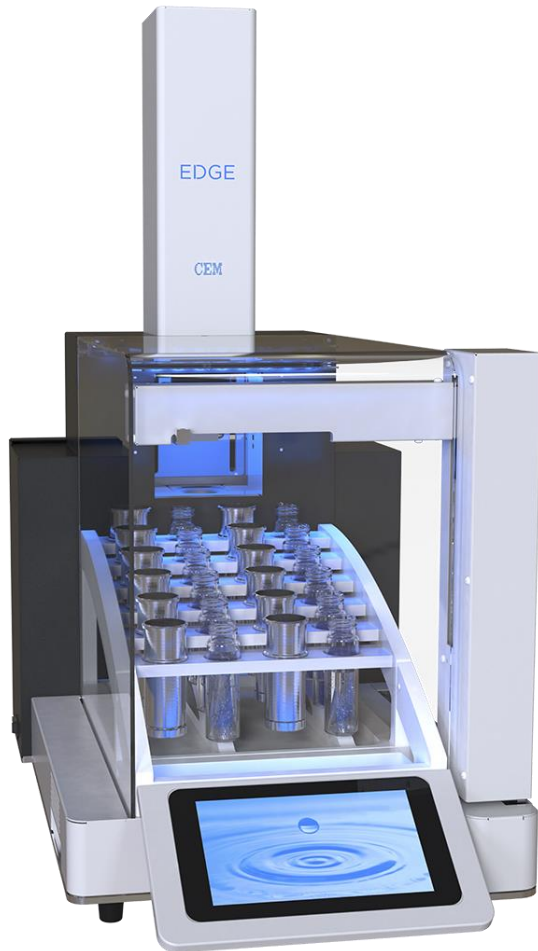
- Time consuming
- Use large amounts of solvent
- Costly

New Technology

The benefits of **Pressurized Fluid Extraction** and **Dispersive Solid Phase Extraction** in one instrument



EDGE Breaks the Bottleneck Barrier

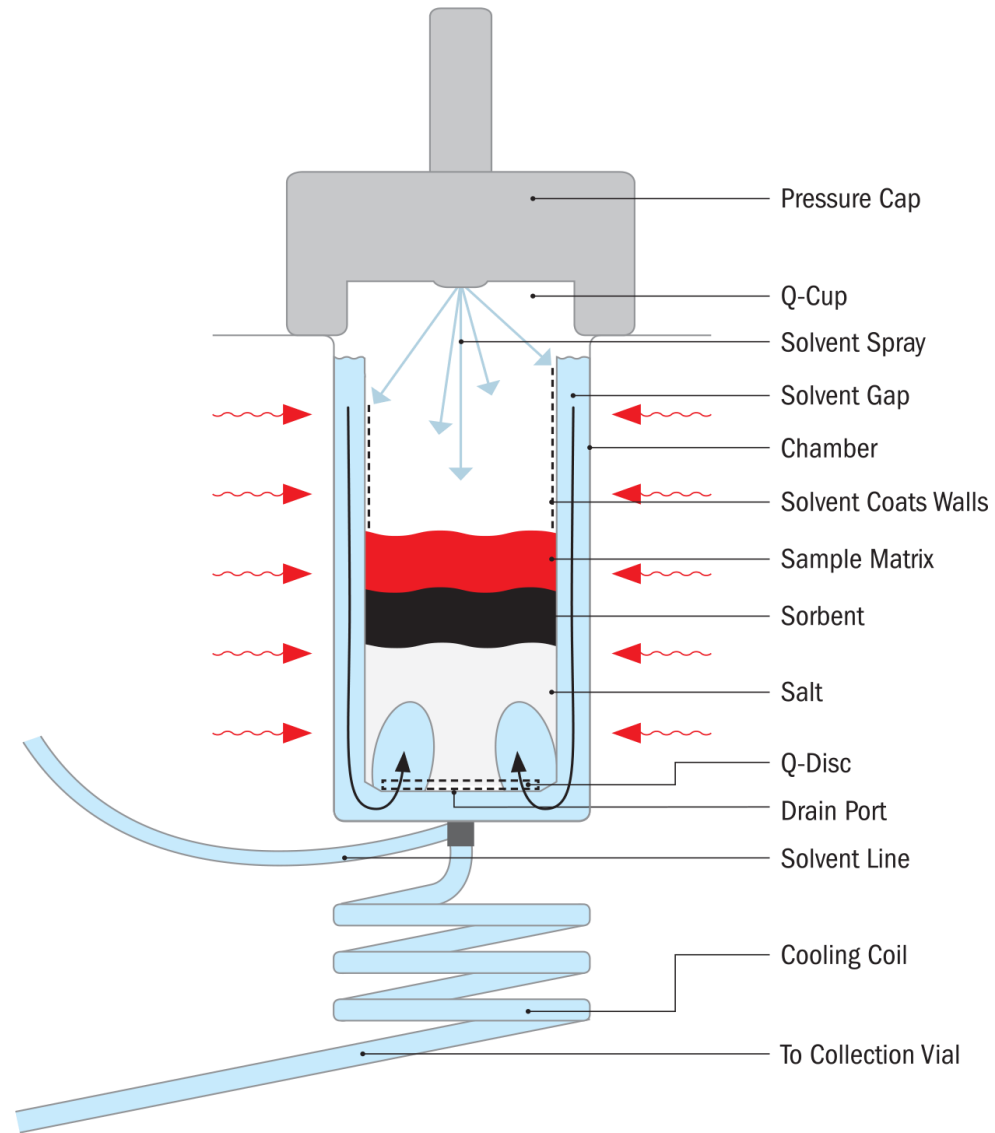


- <15 minutes ✓ **Fast**
- 30 mL ✓ **Solvent reduction**
- Compact ✓ **Size**
- Moderate cost ✓ **Cost**
- Filtered samples ✓ **Filtration**
- Efficient ✓ **Automated**

Q-Cup Technology



Cross section of Q-Cup in EDGE



Simple Preparation



Assemble Q-Cup
(S1 Q-Disc)



Prepare Q-Cup



Load Rack







Run Method



Q-Cup Prep




Layered in Q-Cup (sample holder)	
Q-Screen	On top of sample
Sorbent	<ul style="list-style-type: none"> • Avoid direct exposure to sample • Retain low volatiles
Spike	Desired Standard
Sample	<ul style="list-style-type: none"> • Must be Below Outer Band of Q-Cup • Homogenized / cryomilled samples
Sorbent	<ul style="list-style-type: none"> • Q-Matrix Hydra to Remove Water • Diatomaceous Earth to Remove Oil • Mix with Sand to Ensure Draining • Sorbents to Remove Interferences
Q-Disc	S1 (C9+G1+C9)

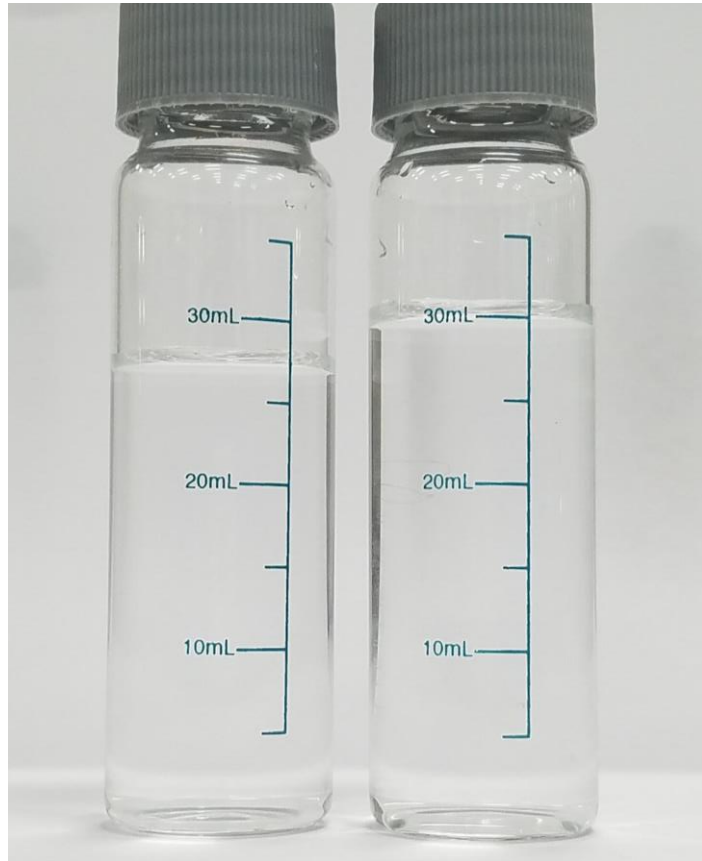
Example EDGE Method

Edit Method - Environmental ...    									
Settings	Cycle	Solvent	Top Volume (mL)	Bottom Volume (mL)	Temp (°C)	Hold Time	Rinse Solvent	Rinse Volume (mL)	Vial
Cycles	1	Dichloromethane >	15	0	70	0:30 >	Dichloromethane >	0	1
Wash	2	Dichloromethane	15	0	70	0:30	Dichloromethane	0	1
	3	Dichloromethane	15	0	100	0:30	Dichloromethane	0	1
	4	Dichloromethane	15	0	100	0:30	Dichloromethane	0	1

3:35 PM
09/22/2020 

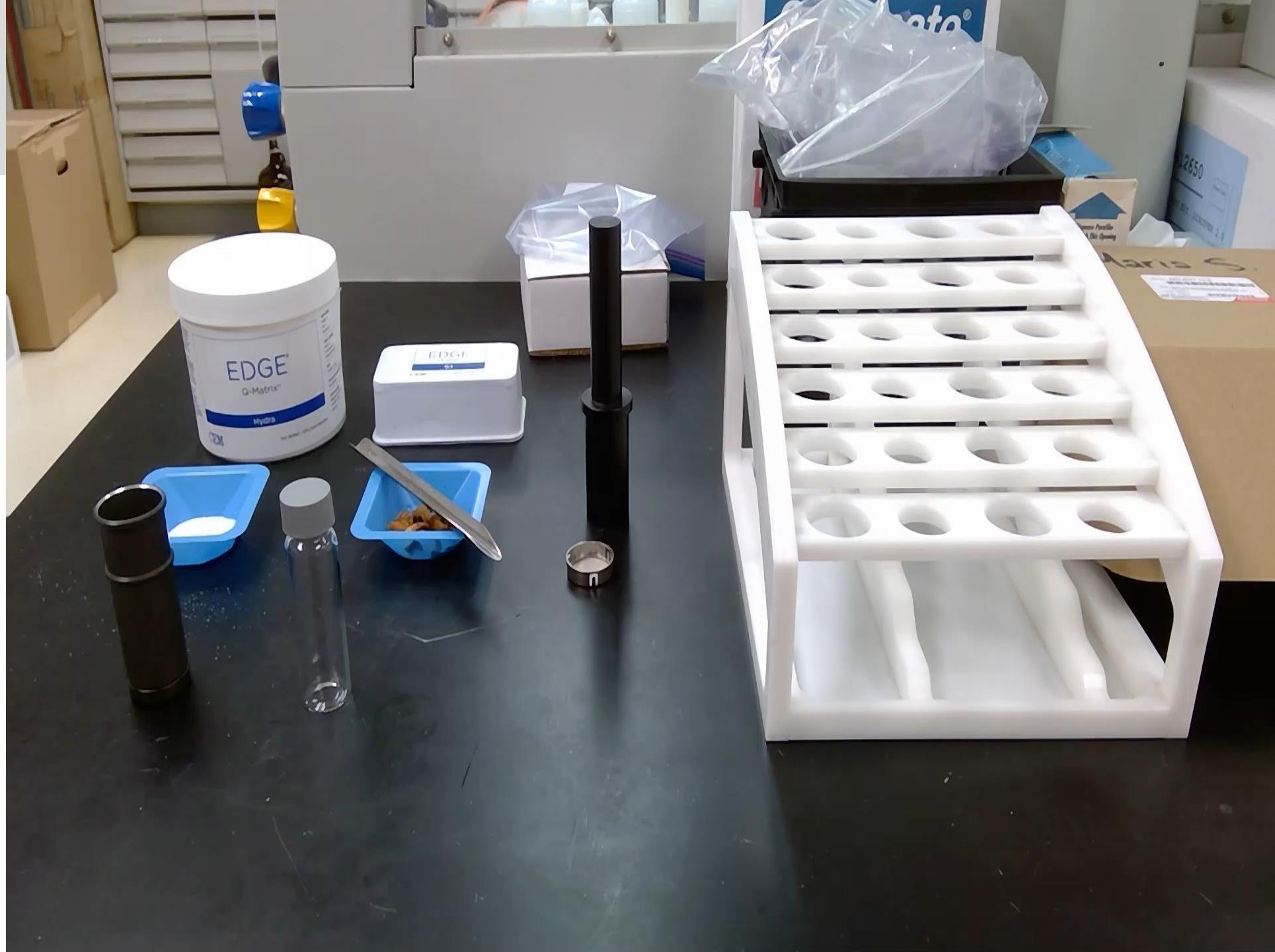
Minimal Post work



Dilute or concentrate
to known volume



Transfer to vial



EDGE Focused Applications



Environmental
USEPA 3545A



Pesticides in Food



Polymers

Extraction Needs

Environmental



Foods



Polymers



Pharmaceuticals



Personal Care Products



Consumer Products



Application Note

https://cem.com/en/literature?cem_products=EDGE&literature_type=Application_Notes



May 4, 2021

Extraction of Pesticides
from Strawberry CRM



May 4, 2021

Extraction of Phthalates
from Polyvinyl Chloride



May 4, 2021

Extraction of Pesticides
from Spices



May 4, 2021

The Extraction of
Pesticides from Cannabis
Flower and Edibles



May 4, 2021

Extraction of Pesticides
from Cucumber, Tomato,
and Green Pepper



May 25, 2020

The Extraction of
Pesticides from Black Tea



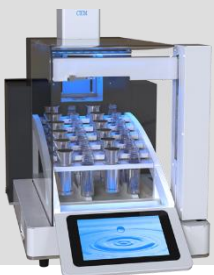
January 25, 2021

Extraction of Semi-Volatile
Organic Compounds from
Soil



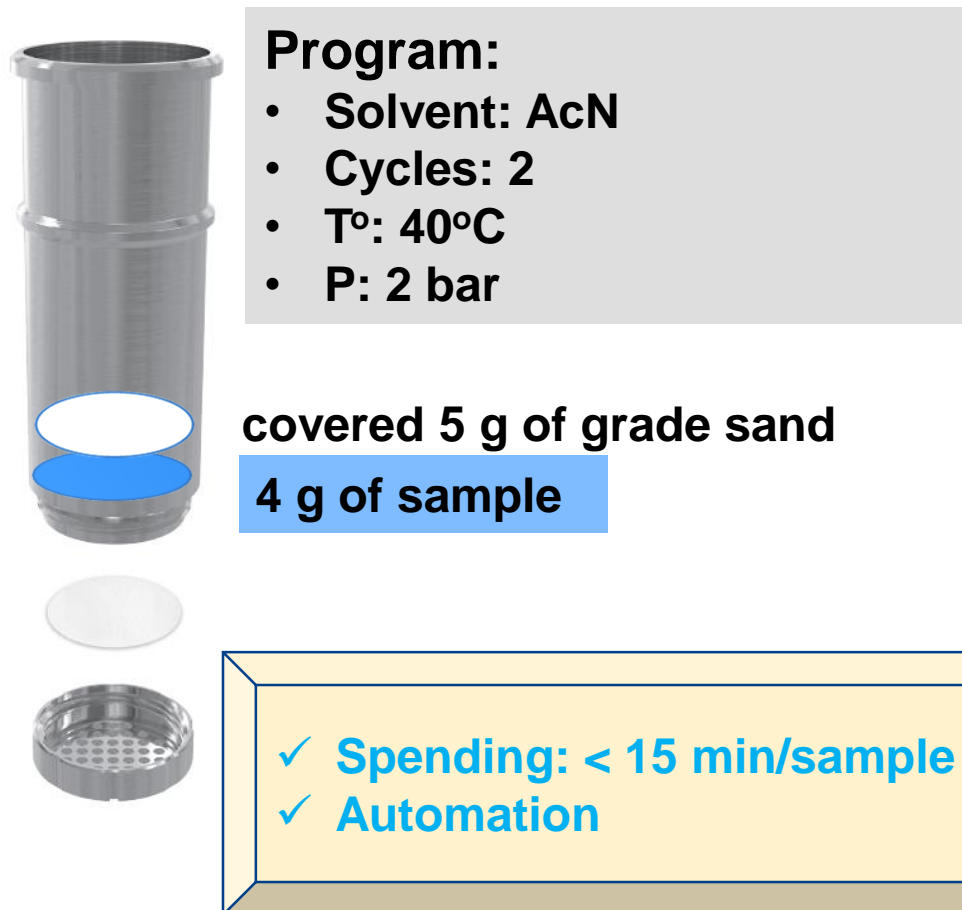
June 9, 2020

Extraction of Pesticides
from Coffee & Cocoa Beans
- EURL-FV

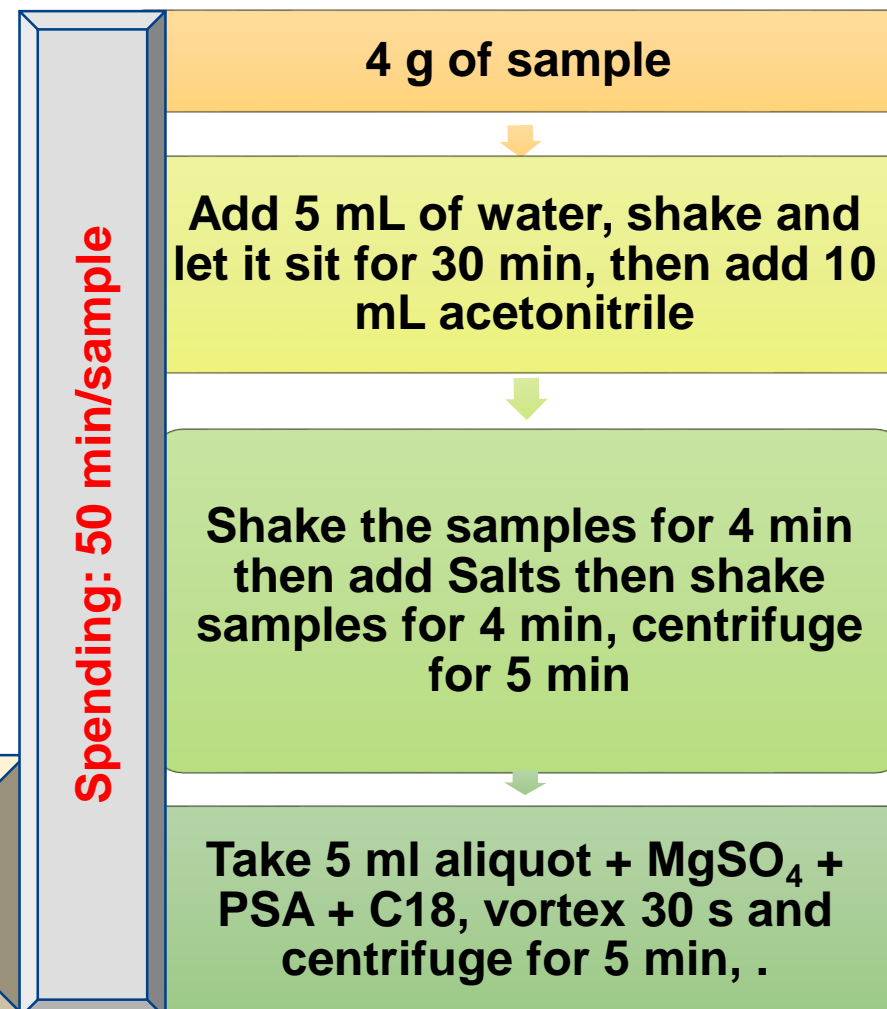


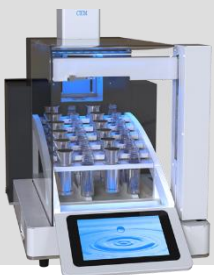
Development and validation of a multiresidue method for high fat content commodities: coffee and cocoa beans

Automated sample extraction using the EDGE instrument



QuEChERS extraction method

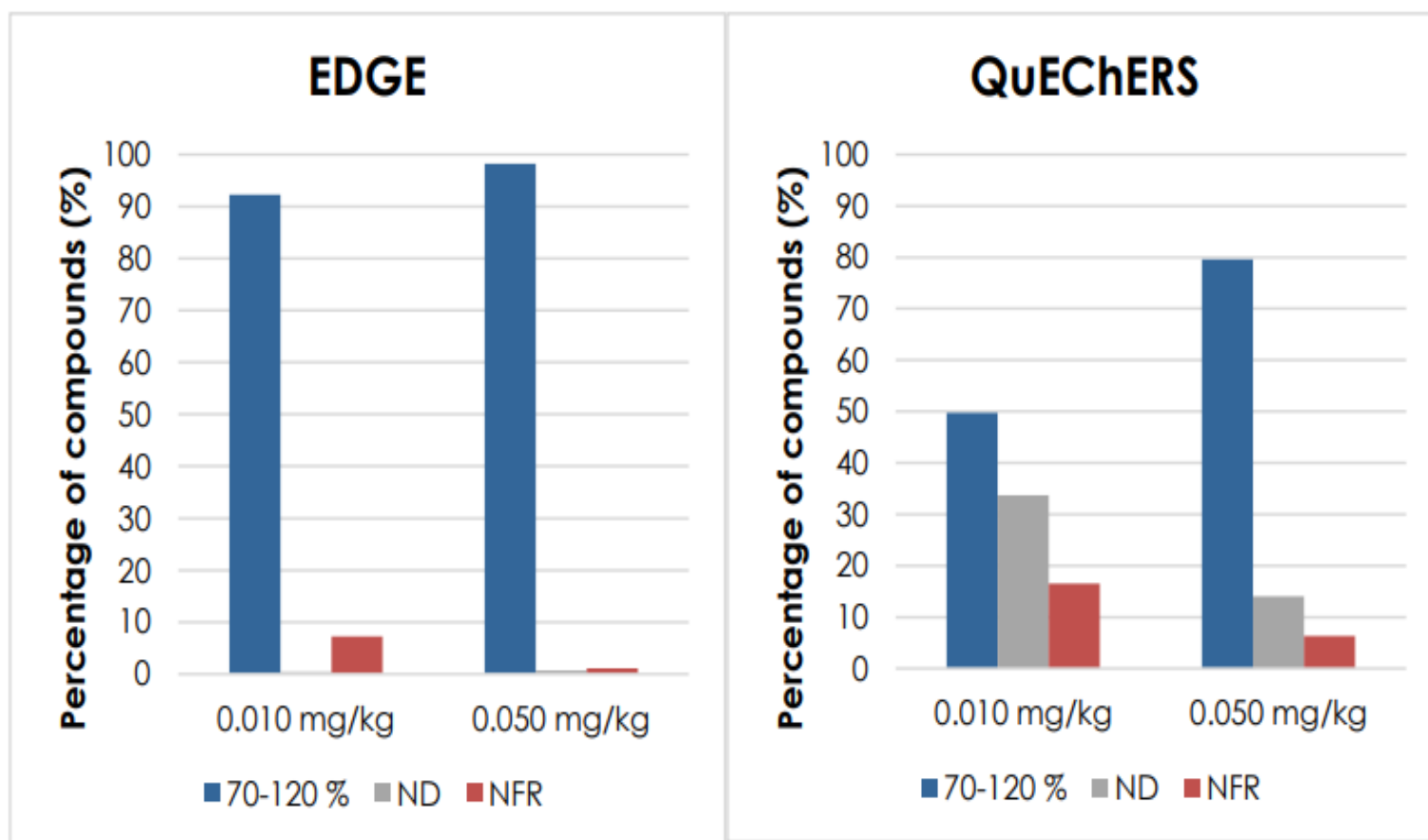




Some experimental results

Comparison with QuEChERS method

Results for coffee



Video



Thank you very much!!!!

For more information

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