

Pesticides Subgroup

At the AOAC Annual Meeting, Tuesday, August 28, 2018 6:15 - 7:45 pm

1. Attendance

There were about 30 people attending the subgroup meeting. The chair has included everyone in the email distribution list to receive future subgroup updates. Please email Ping if you would like to opt out.

2. Ongoing Collaborative Studies

- AOAC Collaborative Study: using nDATA for the screening of pesticides in fruits and vegetables. Study based on the work led by CFIA: J. Agric. Food Chem. 2017, 65 (2), 473-493. Development and validation of a qualitative method for target screening of 448 pesticide residues in fruits and vegetables using UHPLC/ESI Q-Orbitrap based on data-independent Acquisition and compound database. Labs interested please contact Dr. Jon Wong, FDA and Dr. Jian Wang, CFIA.
- Collaboration has been done by these three laboratories: Canadian Food Inspection Agency, California Department of Food and Agriculture, US Food and Drug Administration/CFSAN. Now expanding the study to more labs.
- Proposed study has three phases/requirements:
 - Qualification: Inject standards at 5 ng/mL and determine threshold based on pesticide response
 - Validation
- Matrix studied: apple, banana, broccoli, carrot, grape, lettuce, orange, potato,

strawberry, tomato

- Sample prep: QuEChERS (AOAC.2007.1)
- Pesticides: 50
- Spike concentrations: 10 and 100 ppb (duplicates at each concentration)
 - Proficiency
- Unknown pesticides: 0 – 50
- Concentration: 5 – 100 ppb (duplicates of each commodity)

3. Topics of Discussion

- Pesticides in cannabis

A very active AOAC cannabis working group. SMPR in the works. Check AOAC website for more information regarding the workgroup progress.

- Future collaborative study on glyphosate residue in food and environmental samples
- Currently no AOAC official methods available
- Great interest shown by the 2018 survey results
- Two main methodologies available (direct analysis and derivatization by FMOC)

- Matrices to be considered: vegetation, soil, water, surface swabs, animal tissue, foods, grains, honey, animal feed etc.
- Many attendee labs expressed interest in participating the future collaborative work.
- There were suggestions in the meeting to work with NIST to develop glyphosate Standard Reference Materials.
- First step: calling a workgroup leader. Need a glyphosate workgroup to develop a SMPR.
- Acid herbicides residue method needs
- Currently no AOAC official methods available. The community definitely have a strong interest in having a standardized method on Acid Herbicides.
- Dicamba agriculture crisis since 2017: method needs to include Dicamba and its two major metabolites due to the short half-life of Dicamba.
- Compounds of Interest (by popularity indicated by the survey):

1 2,4-D

- 2 Dicamba (including metabolites 5-OH Dicamba, DCSA)
- 3 Triclopyr
- 4 MCPA
- 5 Aminopyralid
- 6 MCPP
- 7 Clopyralid
- 8 Picloram
- 9 Fluroxypyr
- 10 2,4-DB
- 11 2,4-DP
- 12 Diflufenzopyr
- 13 Bentazon
- 14 Acifluofen
- 15 Bromoxynil
- 16 All of above by HRMS screen

- Represented matrix to be studied: vegetation, soil, water, surface swabs, animal tissue, processed foods, grains, milk product, animal feed etc.
- Calling a workgroup leader. Need a workgroup formed to discuss SMPR.

4. Presentation: Improved residue analysis of captan, captafol, folpet, iprodione, paraquat and diquat in fruits and vegetables by ultra-performance liquid chromatography – tandem mass spectrometry

Dasharath Oulkar, Raviraj Shinde, Zareen Khan, Kaushik Banerjee

National Referral Laboratory, ICAR National Research Centre for Grapes

Dr. Banerjee presented improved ways of analyzing this group of difficult compounds.

Please contact him for details if interested.

5. Presentation: Combination of GC/LC-Q-TOFMS Multi-Residues Screening Method for 733 Pesticides in Fruits and Vegetables- Proposing a AOAC Collaborative Study

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Collaborators are invited! Please contact Dr. Pang for details regarding this GC and LC HRMS AOAC collaborative study.

6. Future Meetings

- NACRW - July 21-24, 2019 Naples, FL
- AOAC - September 8-11, 2019, Denver, CO