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Ring test
Polar pesticides
in fresh herbs (parsley)
P2315-RT

Summary

The entire report is available to participants only.

The ring test was designed, realised, evaluated, and authorised on behalf of PROOF-ACS GmbH by

Dr. Birgit Schindler
Managing Director PROOF-ACS GmbH
Project coordinator

The report was approved by

Dr. Birgit Schindler
cn=Dr. Birgit Schindler,
o=PROOF-ACS GmbH,
ou=Managing Director,
email=proof@proof-acs.de, c=DE
2023.05.04 15:17:27 +02'00'

Dr. Birgit Schindler

Participants with any comments or concerns related to this ring test are invited to contact:

PROOF-ACS GmbH
Gottlieb-Daimler-Str. 1
28237 Bremen
Phone: +49 421 388 928 50
E-mail: proof@proof-acs.de
www.proof-acs.de

PROOF-ACS GmbH does not have any analytical laboratory facilities of its own. Homogeneity testing and stability testing are subcontracted to laboratories, accredited according to DIN EN ISO 17025. The subcontracted laboratory may also participate in the ring tests. If so, the laboratory is treated in the same way as other participants and the same rules of confidentiality apply.

The proficiency test evaluates the performances of laboratories with respect to their ability to quantify polar pesticides in fresh herbs. Twelve laboratories across three countries (Germany, Italy, and Spain) took part in the proficiency test.

The proficiency test consists of a basic module with the parameters chlorate, perchlorate, and the quaternary ammonium compounds. Matrine and oxymatrine are offered as an additional module. It was up to the laboratories to quantify the full set of all parameters or a selection of it.

The test material is prepared of organic deep-frozen parsley. The raw material is homogenised with liquid nitrogen in a Robot Coupe 20 V.V. The resulting homogenate is tested for incurred residues thereafter. The raw material is free from incurred residues of the spiked parameters.

The unspiked parsley homogenate is provided to the participants as blank material upon request. To prepare the test material, the raw material was spiked with

chlorate, perchlorate, BAC C-8, BAC C-10, BAC C-12, BAC C-16, DDAC C-10, DDAC C-12, matrine and oxymatrine.

All labs kept the term of submission of results and are considered for evaluation.

The report contains an assessment related to

- the correct *identification* of the spiked quaternary ammonium compounds.
- the *trueness* of the results. The trueness is expressed as the coverage of the spiked level in %. The coverage should be at least between 70 and 120 % of the spiked level. The trueness criterion is applied to all parameters.
- the *comparability* of the results. The evaluation of the comparability is based on the z-score model. The z-score should be at least ≤ |2|. The comparability criterion is applied to all parameters.

Results

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Assigned value in % of the spiked level	No. of results	No. of results with a z-score ≤ |2|	No. of results within 70-120 % of the spiked level
Chlorate	0.085	0.0847	100	12	12	12
Perchlorate	0.19	0.203	107	12	11	10
BAC C-8	0.021	0.0215	102	10	9	9
BAC C-10	0.045	0.0435	97	10	9	7
BAC C-12	0.018	0.0224	124	10	8	6
BAC C-16	0.031	0.0297	96	10	9	8
DDAC C-10	0.040	0.0374	94	8	7	7
DDAC C-12	0.037	0.0343	93	10	10	8
Matrine	0.035	0.0416	119	8	8	5
Oxymatrine	0.052	0.0523	101	7	7	5

To summarise:

- Twelve laboratories took part in the tests. The laboratories were free to choose if they report results related to all ten parameters or a selection of it.
- All twelve labs reported results related to chlorate and perchlorate. Ten labs reported results related to the quaternary ammonium compounds.
- The overall performance of the laboratories is good. Chlorate and perchlorate are well established parameters in the labs.
- The results related to the quaternary ammonium compounds are quite good. All labs identified the spiked quaternary ammonium compounds correctly. None of the labs reported false positive results. The quantification of BAC C-12 with the lowest spiked level (0.018 mg/kg) seems to be more challenging, especially with respect to the trueness.
- Eight labs reported results related to the module matrine/oxymatrine. The results of the labs are well comparable. However, the correct quantification with respect to the trueness criterion seems to be more challenging. Some of the labs overestimate the true level of matrine and oxymatrine in the test sample.

Page