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Ring test
Multi-method pesticides and bromide in walnut

P2424-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

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The report was approved by

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DAkkS
Deutsche
Akkreditierungsstelle
D-EP-22211-01-00

PROOF-ACS is a DAkkS accredited proficiency testing provider according to DIN EN ISO 17043:2010 (D-EP-22211-01-00). This ring test is covered by the scope of accreditation.

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 pesticides by means of common pesticide multi-residue methods as well as inorganic bromide in walnuts. 19 laboratories across five countries (Germany, Italy, Netherlands, South Africa, and Spain) took part in the proficiency test. All 19 labs reported results related to the pesticides, while 8 labs ordered the additional module related to inorganic bromide as well.

The test material is prepared of milled organic walnuts. The milled walnuts are carefully homogenised and spiked thereafter. The unspiked walnuts are tested for incurred residues and are provided as blank material upon request. Low levels of bromide (0.1 mg/kg) were detected in the blank material.

The raw material was spiked with 13 pesticides and inorganic bromide to prepare the test material. Neither the identity nor the number of spiked pesticides were announced in advance. The identity of the pesticides and the spiked levels are summarised in the table below.

The results are evaluated with respect to

- 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 *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 results of all 19 labs are considered for evaluation. A summary of the overall performance of the labs is provided in the table below.

To summarise:

- 19 labs reported results related to the pesticide multi-residue methods, while 8 labs reported results related to inorganic bromide.
- The overall performance of the labs is satisfying with respect to the more common pesticides azoxystrobin, carfentrazone-ethyl, chlorantraniliprole, cypermethrin, fluopyram, norflurazon, oxyfluorfen, piperonyl butoxide, spirotetramat, and tolylfluanid.
- The most challenging parameters in the test are acequinocyl, fenbutatin oxide, and rimsulfuron. Several laboratories failed to identify the three parameters correctly.
- Four laboratories identified all pesticides correctly and quantified all 13 pesticides correctly with respect to the comparability criterion and the trueness criterion.
- Six labs quantified bromide correctly with respect to the comparability criterion and the trueness criterion.

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
Acequinocyl	0.026	0.0297	114	10	9	7
Azoxystrobin	0.036	0.0350	97	19	19	17
Carfentrazone-ethyl	0.083	0.0936	113	18	18	16
Chlorantraniliprole	0.064	0.0648	101	19	17	16
Cypermethrin	0.041	0.0362	88	19	19	18
Fenbutatin oxide	0.052	0.0503	97	14	12	11
Fluopyram	0.088	0.0838	95	19	19	19
Norflurazon	0.031	0.0319	103	18	18	17
Oxyfluorfen	0.028	0.0241	86	18	17	17
Piperonyl butoxide	0.12	0.107	89	19	19	18
Rimsulfuron	0.044	0.0474	108	13	12	9
Spirotetramat (sum)	0.28	0.274	98	19	19	19
Tolylfluanid	0.029	0.0262	90	16	16	15
Bromide	4.2	4.31	103	8	6	6