

Ring test

Polar pesticides in avocado

P2412-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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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.

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The proficiency test evaluates the performances of laboratories with respect to their ability to quantify polar pesticides, aminoalcohols and quaternary ammonium compounds in avocado. Nine laboratories across three European countries (Germany, Italy, and Spain) took part in the proficiency test. All nine labs ordered the basic module related to polar pesticides, six labs ordered the module related to aminoalcohols, and six labs ordered the module related to quaternary ammonium compounds.

The test material is prepared of organic avocado. The peel and the kernel of the avocado are removed, and the pulp is homogenised in a Robot Coupe R20 V.V. thereafter. The unspiked material is provided as blank material upon request. The blank material is tested for incurred residues. Incurred residues are detected of phosphonic acid.

To prepare the test material, the raw material was spiked with

the polar pesticides ethephon, chlorate, perchlorate, glyphosate, and phosphonic acid, the aminoalcohols morpholine, diethanolamine, and triethanolamine, and the quaternary ammonium compounds BAC C-8, BAC C-10, BAC C-12, BAC C-14, DDAC C-8, and DDAC C-10.

Eight out of nine labs kept the term of submission of results and are considered for evaluation.

The report contains an assessment related 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 trueness criterion is applied to all parameters except phosphonic acid.
- the *comparability* of the results. The evaluation of the comparability is based on the z-score model. The z-score should be at least $\leq |2|$. The comparability criterion is applied to ethephon, chlorate, perchlorate, and glyphosate.

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 $\leq 2 $	No. of results within 70-120 % of the spiked level
Ethephon	0.14	0.136	97	8	8	8
Chlorate	0.078	0.0749	96	8	7	7
Perchlorate	0.045	0.0446	99	8	7	7
Glyphosate	0.039	0.0381	98	8	7	7
Phosphonic acid	1.1*	1.52	138	7	7	Not applicable
Morpholine	0.72	-	-	5	Not applicable	4
Diethanolamine	0.060	-	-	5	Not applicable	3
Triethanolamine	0.25	-	-	5	Not applicable	5
BAC C-8	0.045	-	-	5	Not applicable	5
BAC C-10	0.023	-	-	5	Not applicable	5
BAC C-12	0.033	-	-	5	Not applicable	4
BAC C-14	0.041	-	-	5	Not applicable	5
DDAC C-8	0.056	-	-	5	Not applicable	3
DDAC C-10	0.038	-	-	5	Not applicable	3

* The spiked level is provided for information only. The raw material contains incurred residues of phosphonic acid.

To summarise:

- Nine laboratories took part in the tests. Eight laboratories kept the deadline for reporting of results and are considered for evaluation.
- The overall performance of the labs is satisfying with respect to the polar pesticides ethephon, chlorate, perchlorate, glyphosate, and phosphonic acid. The assigned values are in good accordance with the spiked levels for all parameters except phosphonic acid. Incurred residues of phosphonic acid were detected in the blank material.

- A low number of six labs took part in the module related to aminoalcohols. Five of them reported results. The results are satisfying for most labs related to morpholine, and triethanolamine. The most challenging parameter is diethanolamine, where two labs overestimated the spiked level.
- Six labs took part in the module related to quaternary ammonium compounds. Five of them reported results. The overall performance of the labs was satisfying for BACs, while the performance related to DDAC C-8 and C-10 was not satisfying for some of the labs. Lab 7 reported a false negative result of DDAC C-8 and a false positive result related to DDAC C-12.