

Ring test

Pesticides and antibiotics in honey

P2527-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 pesticides and antibiotics in honey. Ten laboratories across five European countries (France, Germany, Italy, Netherlands, and Spain) took part in the proficiency test.

The test material is prepared of a conventionally produced rapeseed honey, which is tested for incurred residues and spiked with pesticides and antibiotics thereafter. The unspiked honey is provided as blank material upon request.

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

- the multi-method pesticides amitraz, boscalid, chlorpyrifos, clopyralid, clothianidin, coumaphos, fenvalerate, thiacloprid, and thiamethoxam,
- glyphosate, and
- the antibiotics AMOZ, chloramphenicol, ciprofloxacin, dapson, metronidazole, oxytetracycline, streptomycin, sulfamethazine, and tylosin B.

The laboratories were free to choose to analyse all parameters within the scope of the test or a selection thereof. 9 labs analysed the honey for pesticides by means of a pesticide multi-residue method, while 8 labs analysed glyphosate. 3 labs analysed the honey for antibiotics.

All labs kept the term of submission of results and are considered for evaluation. The results are summarised in the table below.

The report contains an assessment related to

- the *identification* of the pesticides (multi-residue methods) and antibiotics.
- 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 absolute values of z-scores should be at least ≤ 2 . The comparability criterion is applied to all pesticides except clopyralid. The comparability criterion is not applicable to the antibiotics due to the limited number of reported results.

Results

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Assigned value in % of the spiked level	No. of results	No. of results with $ z\text{-score} \leq 2$	No. of results within 70-120 % of the spiked level
Amitraz (sum)	0.21	0.198	94	8	7	7
Boscalid	0.089	0.0925	104	8	8	8
Chlorpyrifos	0.017	0.0155	91	8	8	8
Clopyralid	0.031*	-	-	6	not applicable	3
Clothianidin	0.018	0.0172	96	9	9	9
Coumaphos	0.047	0.0438	93	9	9	9
Fenvalerate	0.088	0.0886	101	8	8	8
Thiacloprid	0.067	0.0673	100	9	9	9
Thiametoxam	0.029	0.0281	97	9	7	7
Glyphosate	0.022	0.0213	97	8	8	8
AMOZ	0.0030	-	-	2	not applicable	2
Chloramphenicol	0.0060	-	-	2	not applicable	2
Ciprofloxacin	0.018	-	-	3	not applicable	3
Dapson	0.0035	-	-	2	not applicable	1
Metronidazole	0.0050	-	-	3	not applicable	3
Oxytetracycline	0.014	-	-	3	not applicable	2
Streptomycin	0.065	-	-	3	not applicable	2
Sulfamethazine	0.013	-	-	3	not applicable	3
Tylosin B	0.037	-	-	2	not applicable	1

* The blank material contains incurred residues of clopyralid of 0.093 mg/kg.

To summarise:

- Ten laboratories took part in the tests. All labs reported results and are considered for evaluation.
- All 8 labs pass the comparability criterion and the trueness criterion related to glyphosate.
- 1 out of 9 labs passes the comparability criterion and the trueness criterion for all pesticides of the multi-residue methods.
- 1 out of 3 labs passes the comparability criterion and the trueness criterion for all spiked antibiotics.