

Ring test

Multi-method pesticides, glyphosate, diquat, and paraquat in sesame seeds

P2124-RT



Summary

The entire report is available to participants only.

Designed, realised and evaluated by

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Bremen, Germany

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A handwritten signature in blue ink that reads "Schindler".

Dr. Birgit Schindler

The proficiency test evaluates the performances of laboratories with respect to their ability to quantify common pesticides applying a pesticide multi-method approach as well and with respect to their ability of quantify glyphosate and/or diquat and paraquat in sesame seeds.

Thirty laboratories across five European countries (Greece, Germany, Italy, Netherlands and Spain) took part in the test. It was up to the participants to analyse all parameters or a selection of them only. Glyphosate was offered as an additional parameter free of charge, while the labs were free to order the additional module related to diquat and paraquat as an add-on to this ring test.

Organic sesame seeds are used as raw material. The sesame seeds were carefully homogenised in order to avoid crushing and fragmentation of the seeds. An analysis confirms the absence of incurred residues of pesticides in the sesame seeds (all spiked parameters not detected, < 0.01 mg/kg).

Whole, non-milled sesame seeds are provided as test material in order to check the analytical procedure as well as the sample preparation.

The sesame seeds are spiked with the multi-method pesticides

acetochlor, carbaryl, clethodim, cypermethrin, diuron, fenvalerate, fluazifop-p, fluometuron, imidacloprid, methoxychlor, and phoxim.

Furthermore, the sesame seeds are spiked with

glyphosate, diquat, and paraquat.

The performance of laboratories in the test is evaluated according to

- The correct identification of the spiked multi-method pesticides. Multi-method pesticides, which are not reported and not marked as not analysed are considered false negative.
- 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 all parameters in the test.
- 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 in the test.

Results

Parameter	Spiked level [mg/kg]	Assigned value [mg/kg]	Total number of results	Comparability criterion: no. of participants, with z-score $\leq 2 $	Trueness criterion: no. of participants with results within 70-120 % recovery of the spiked level
Acetochlor	0.035	0.0288	22	22	20
Carbaryl	0.066	0.0636	26	25	20
Clethodim (sum)*	0.074	0.0684	24	19	13
Cypermethrin	0.12	0.0944	25	25	21
Diuron	0.045	0.0409	25	25	22
Fenvalerate	0.055	0.0451	25	24	22
Fluazifop-p	0.035	0.0314	22	18	16
Fluometuron	0.045	0.0406	23	23	21
Imidacloprid	0.028	0.0250	26	26	25
Methoxychlor	0.033	0.0279	24	23	18
Phoxim	0.048	0.0418	23	23	20
Glyphosate	0.073	0.0567	24	21	16
Diquat	0.083	0.0687	14	13	9
Paraquat	0.050	0.0396	14	9	6

* Sum of clethodim and clethodim-sulfoxide, expressed as clethodim.