

relana® undercover sample 01/2016

Analysis of pesticides in strawberries on a routine level

Summary



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Note:

The commitment of relana® laboratories to improve their analytical performances by taking part in so-called undercover tests (where the test character of the sample is not known to the laboratory as opposed to announced ring tests) is a strong argument for the real willingness of the laboratory to deliver reliable results on a routine basis. Analytical results of undercover tests **MUST NOT BE** compared with the analytical performances of laboratories in announced ring tests as the challenge of delivering correct results is significantly increased in undercover tests (no “special care analysis” is applied for undercover samples). Conclusively, the commitment of relana® laboratories should not get punishment at all because of non-satisfying results in undercover tests.

Aim

The aim of the test is to check the performances of the relana[®] laboratories on a routine level. For that purpose, unsuspecting test materials are made up as a routine samples and sent to the labs by their common clients.

As the lab is not informed about the test character of the sample the sample is analysed on a routine level:

- No “special care” analysis - in contrast to common competence schemes.
- Within a limited time frame - as required for routine samples.
- The sample homogenisation is included in the test.
- The labs are asked to provide a test report - as required for routine samples.

The challenge of delivering correct results is significantly increased in undercover tests compared to common, announced competence tests. The so-called “undercover” samples are an important tool to get knowledge about the *daily* performance of laboratories under *routine* conditions. Undercover samples help to identify possible shortcomings, deficiencies and areas of improvement.

The lab quality circle relana[®] makes use of this tool at least twice a year. Five out of eleven members of the relana[®] quality circle took – unknowingly - part in this undercover performance test.

Test material

In order to ensure that the laboratories do not realise the test character of the samples, a spiked but not processed (non-homogenised) test material was prepared. Fresh strawberries were chosen as matrix as they are inconspicuous (high amount of routine samples of the same type of matrix) and well suitable for the spiking procedure.

The organic strawberries were spiked with pesticides in order to ensure that all participants had to deal with similar analytical challenges.

Results

The strawberries were spiked with Abamectin B1a, Bupirimate, Ethirimol, Fludioxonil, Fluopyram, and Metamitron. The spiked levels are summarised in table 2.

The results of the undercover samples were evaluated according to false-positive findings, false-negative findings and according to the trueness criterion of the quantification: a recovery of 70 to 120 % of the spiked level was accepted as satisfying.

A summary of the results of the test is provided in tables 1 and 2.

Table 1. Summary of the overall results of the laboratories

Performance criterion	Number of satisfactory participants	Total number of participants	Satisfactory [%]
No false-positive findings	5	5	100
Correctly identified all six pesticides	5	5	100
Correctly identified AND quantified all six pesticides	2	5	40

Table 2. Overview of the analytical results

Pesticide	Spiked level [mg/kg]	Assigned value [mg/kg]	Assigned value in % of the spiked level	Number of satisfactory results	Total number of participants	Satisfactory [%]
Abamectin	0.020	0.019	97	4	5	80
Bupirimate	0.039	0.038	97	5	5	100
Ethirimol	0.033	0.033	100	4	5	80
Fludioxonil	0.083	0.086	104	5	5	100
Fluopyram	0.075	0.087	116	2	5	40
Metamitron	0.062	0.056	91	5	5	100