Facing analytical quality.

rolling proof 2019

Module tea and spices

Green tea
P1904-RT

Summary

The entire report is available to the participants only.

Designed, realised and evaluated by

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November 2019,

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rolling proof is developed to support laboratories in meeting the requirements of accreditation bodies. According to advisory document EA-4/18:2010 analytical laboratories are requested to establish a PT participation plan for accredited analytical methods. ***rolling proof*** is an on-going scheme of ring tests.

The module “tea and spices” of ***rolling proof*** is designed for difficult or unique commodities (according to SANTE 11813/2017, Annex A) and includes

- teas like black tea, green tea, herbal tea, fruit tea, rooibos tea etc., and
- spices like pepper, curry powder, paprika powder, etc.

The module “tea and spices” covers all in all a minimum of 150 of the most relevant pesticides. The scope of pesticides covered by ***rolling proof*** is defined in a provided list. All pesticides are tested within a period of five years. Thus, the laboratories that take part in ***rolling proof*** are able to test their pesticide multi-methods for a large number of pesticides and a variety of matrices within one cycle of accreditation. However, it is up to the participants to join all tests of the 5-year programme of ***rolling proof***, or to book the tests individually.

rolling proof evaluates the performance of laboratories according to:

- the correct *identification* of the spiked pesticides.
- 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 comparability criterion is not applicable to dicofol.
- 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.

In 2019, green tea is chosen as matrix of ***rolling proof*** – module ”tea and spices”. Ten laboratories across four countries (Austria, Germany, Netherlands and Spain) took part in the test.

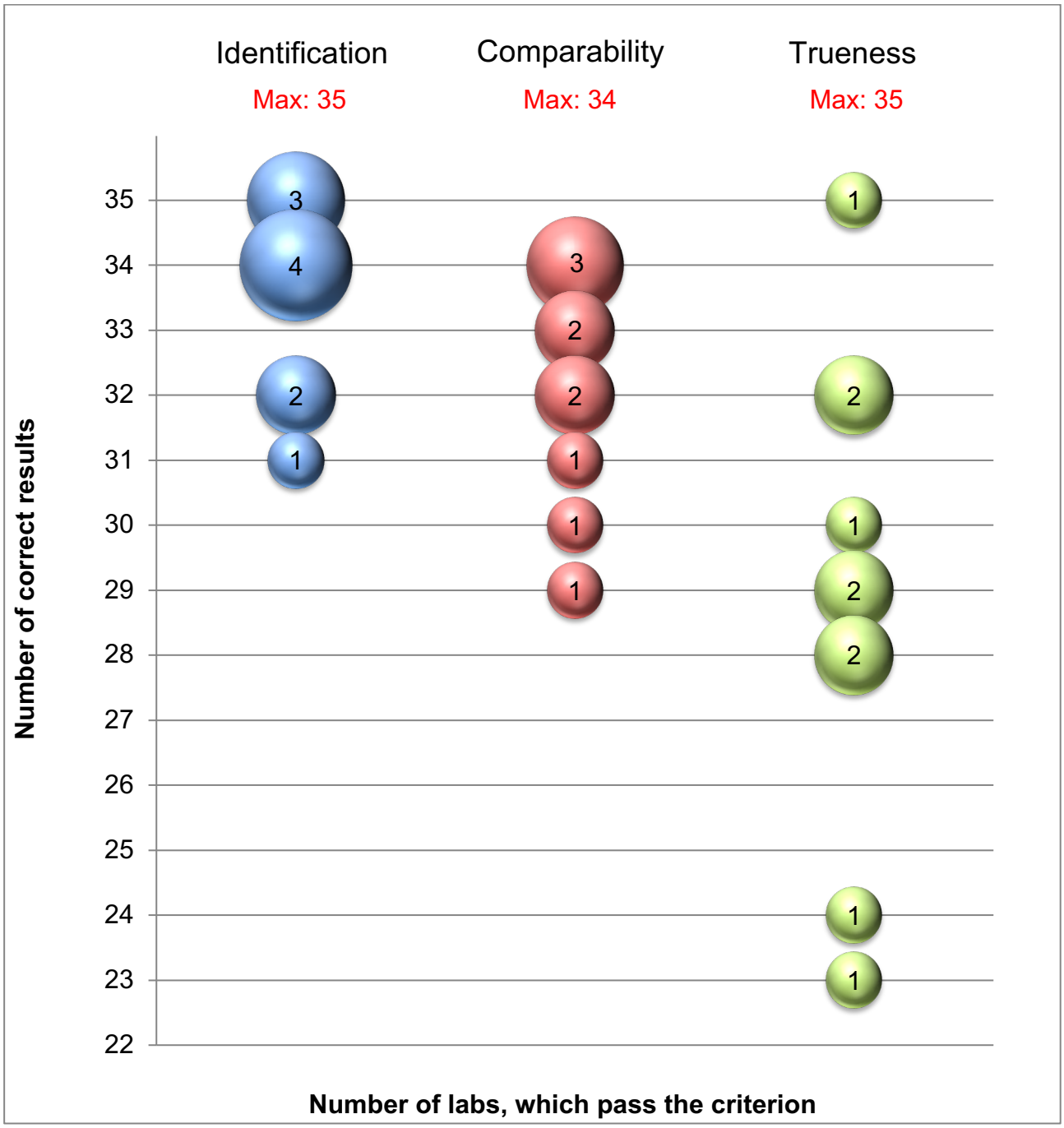
The test material is prepared of organic green tea. The raw material is milled to a fine powder, homogenised, tested for incurred residues and spiked with 35 pesticides thereafter.

The analytical challenge is to identify and quantify 35 pesticides in the test material. The identity of the pesticides, the spiked levels and a summary of the overall performance of the laboratories are provided in the table below.

Summary of results

Pesticide	Spiked level [mg/kg]	Assigned value [mg/kg]	Total number of results	**Comparability criterion:** no. of participants, which pass the criterion (z-score ≤ |2|)	**Trueness criterion:** no. of participants which pass the criterion (70-120 % recovery of the spiked level)
2,4`-DDT	0.025	0.0203	7	7	5
Acetamiprid	0.040	0.0390	10	10	9
Aldicarb sulfone	0.062	0.0597	9	8	8
Bifenthrin	0.088	0.0801	10	10	10
Buprofezin	0.12	0.111	10	10	10
Carbendazim	0.13	0.118	10	10	10
Chlorfenapyr	0.035	0.0322	10	10	8
Chlorpropham	0.065	0.0716	10	8	7
α-Cypermethrin	0.045	0.0441	10	10	9
Demeton-S-methyl sulfoxide	0.055	0.0492	9	9	9
4,4`-Dicofol	0.045	-	6	not evaluated	2
Diflubenzuron	0.044	0.0420	10	10	10
Diphenylamine	0.14	0.137	10	9	8
Famoxadone	0.030	0.0275	9	9	8
Fenitrothion	0.075	0.0730	10	10	10
Fipronil	0.010	0.00871	9	8	7
Flucythrinate	0.033	0.0306	9	9	8
Hexythiazox	0.092	0.0884	10	10	9
Imidacloprid	0.098	0.0859	10	9	8
Isoprocarb	0.025	0.0301	10	10	5
Malaoxon	0.088	0.0876	10	10	9
Metamitron	0.090	0.0868	10	10	8
Methiocarb	0.13	0.111	10	9	8
Monocrotophos	0.088	0.0838	9	9	9
Parathion-methyl	0.055	0.0515	10	10	10
Pendimethalin	0.035	0.0355	10	10	10
Pentachloroaniline	0.045	0.0403	10	10	9
Phosalone	0.050	0.0469	10	10	5
Pirimiphos-ethyl	0.026	0.0251	10	10	8
Propargite	0.065	0.0606	9	9	9
Prothiofos	0.033	0.0297	10	10	10
Tebuconazole	0.063	0.0562	10	10	9
Tebufenozide	0.10	0.0963	10	10	9
Thiacloprid	0.041	0.0402	10	10	10
Triadimenol	0.060	0.0542	10	9	7

Summary of the performance of the laboratories:



Total No. of labs: 10