rolling proof 2023

Module vegetables and fruits

Carrot – P2321-RT

Grapefruit – P2322-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

Dr. Birgit Schindler
Managing Director PROOF-ACS GmbH
Project coordinator

The report was approved by

Dr. Birgit Schindler
cn=Dr. Birgit Schindler,
o=PROOF-ACS GmbH,
ou=Managing Director,
email=proof@proof-acs.de,
c=DE
2023.09.05 11:48:42 +02'00'

Dr. Birgit Schindler

Participants with any comments or concerns related to this ring test are invited to contact:

PROOF-ACS GmbH
Gottlieb-Daimler-Str. 1
28237 Bremen
Phone: +49 421 388 928 50
E-mail: proof@proof-acs.de
www.proof-acs.de

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.

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.

Two commodity groups (according to SANTE 11312/2021, Annex A) are included in ***rolling proof*** - module “vegetables and fruits”:

- vegetables and fruits (high water content),
- citrus fruits, small fruits and berries (high acid content).

Two test materials are provided related to the module “vegetables and fruits” in each year, one for each of the two commodity groups mentioned above.

In 2023, carrot and grapefruit are chosen as matrices for ***rolling proof*** - module “vegetables and fruits”.

A list of pesticides is provided to the participating laboratories, which defines the scope of pesticides, covered by ***rolling proof***. The module “vegetables and fruits” covers all in all a minimum of 300 pesticides. All pesticides are tested within a period of six years. Thus, the laboratories that take part in ***rolling proof*** are able to test their pesticide multi-residue methods for a large number of pesticides and a variety of matrices within one cycle of accreditation.

It is up to the participants to join all tests of the 6-year programme of ***rolling proof***, or to book the tests individually. In 2023, 10 laboratories across seven countries (Austria, Cyprus, Germany, Greece, Italy, South Africa, and Spain) took part in ***rolling proof*** module “vegetables and fruits” for one or both matrices.

The test materials were prepared of organic carrots resp. grapefruits. The raw materials were homogenised, tested for incurred residues and spiked with pesticides thereafter.

rolling proof evaluates the performance of the laboratories according to:

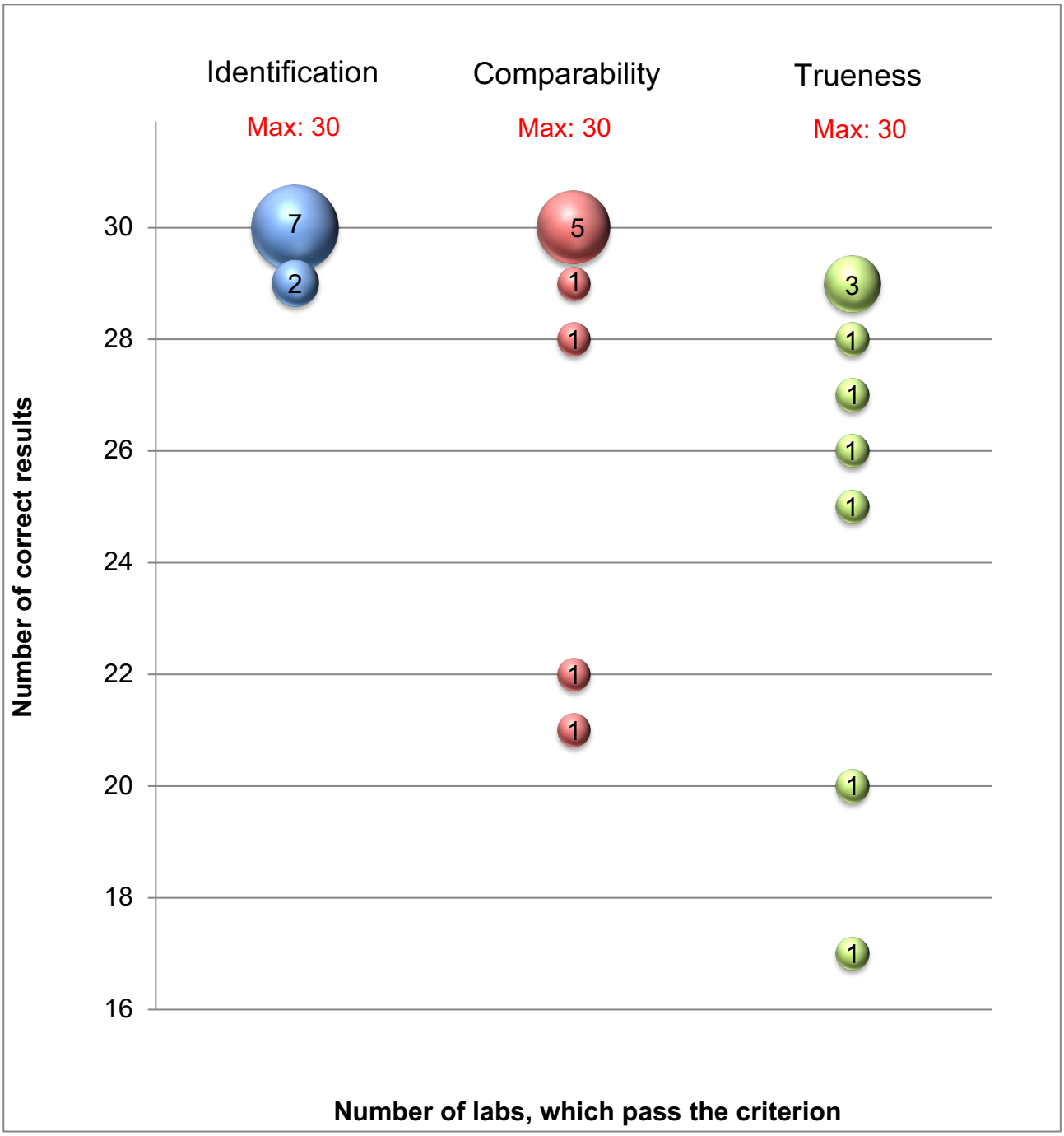
- The correct *identification* of the spiked pesticides.
- The *comparability* of the results. The evaluation of the comparability is based on the z-score model. The z-score should be at least ≤ |2|.
- The *trueness* of the results. The trueness is expressed as the coverage of the spiked level in %. The coverage should be at least between 70 and 120 % of the spiked level.

Test material carrot (P2321-RT)

The test material carrot was spiked with 30 pesticides. The analytical challenge was to identify and quantify all spiked pesticides. The identity of the pesticides, the spiked levels and a summary of the overall performance of the laboratories are provided in the table below.

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	0.059	0.0555	9	8	8
4,4-DDE	0.022	0.0208	9	9	9
4,4-DDT	0.019	0.0197	9	9	9
Aldrin	0.026	0.0262	9	9	9
Chlorfenvinphos	0.033	0.0325	9	9	9
Chlorothalonil	0.045	0.0308	9	9	5
Chlorthal-dimethyl	0.041	0.0371	9	8	8
Clomazone	0.028	0.0303	9	9	7
Cyazofamid	0.030	0.0292	9	7	7
Dicofol, 4,4`-	0.037	0.0312	8	6	5
Diphenylamine	0.045	0.0380	9	9	8
Endosulfan sulfate	0.045	0.0420	9	9	8
Ethofumesate	0.055	0.0555	9	8	6
Fluazifop-P	0.24	0.232	8	8	8
Haloxyfop	0.082	0.0743	9	8	8
Isofenphos	0.039	0.0350	9	8	8
Linuron	0.020	0.0209	9	8	8
Methiocarb	0.051	0.0523	9	8	6
Metribuzin	0.044	0.0280	9	8	3
Oxamyl	0.025	0.0247	9	8	8
Pentachloroaniline	0.051	0.0467	9	9	9
Phenthoate	0.043	0.0420	9	9	9
Prometryn	0.020	0.0201	9	9	9
Prosulfocarb	0.069	0.0653	9	9	9
Quizalofop-ethyl	0.13	0.126	9	8	7
Tebuconazole	0.21	0.189	9	8	8
Tefluthrin	0.066	0.0617	9	8	8
Tepraloxydim	0.071	0.0667	9	9	9
Terbuthylazine	0.026	0.0269	9	8	7
Trifluralin	0.030	0.0283	9	8	8

Carrot – Summary of the performances of participating laboratories:



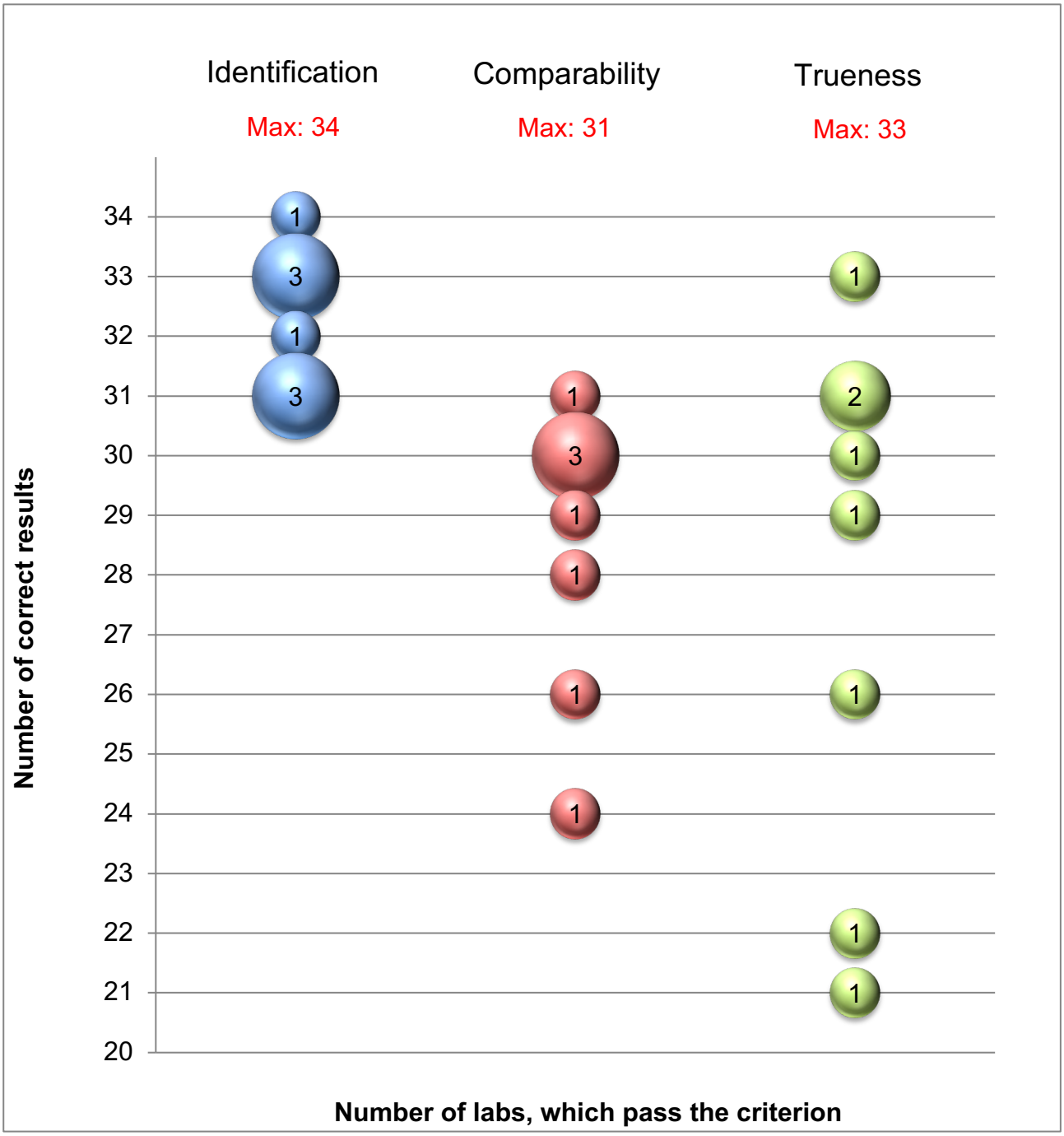
Total No of labs: 9

Test material grapefruit (P2322-RT)

The test material grapefruit was spiked with 34 pesticides. The analytical challenge was to identify and quantify all spiked pesticides. The identity of the pesticides, the spiked levels and a summary of the overall performance of the laboratories are provided in the table below.

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-DB	0.042	-	5	Not applicable	5
Acrinathrin	0.018	0.0182	8	7	7
Ametryn	0.030	0.0282	8	7	7
Azinphos-ethyl	0.051	0.0490	8	8	7
Biphenyl	0.020	0.0198	7	6	6
Bromacil	0.026	0.0254	7	6	6
Bromopropylate	0.041	0.0410	8	8	7
Buprofezin	0.061	0.0622	7	7	6
Cadusafos	0.023	0.0229	8	8	8
Carbaryl	0.057	0.0457	8	5	6
Carbofuran	0.034	0.0338	7	7	7
Chlordane cis	0.062	0.0606	8	7	7
Chlorfenson	0.046	0.0413	8	8	8
Chlorobenzilate	0.088	0.0767	7	7	6
Dicloran	0.028	0.0258	8	8	7
Ethion	0.024	0.0241	8	8	8
Etrimfos	0.038	0.0376	8	8	8
Fenamiphos	0.053	0.0489	8	8	8
Fenazaquin	0.25	0.249	8	8	8
Flucythrinate	0.025	0.0233	8	7	7
Formetanate	0.036	0.0341	7	6	6
Imazalil	0.69	0.653	8	8	8
Imidacloprid	0.73	0.774	8	8	6
Malathion	0.37	0.361	8	8	7
Mecarbam	0.031	0.0290	7	7	7
Methidathion	0.059	0.0545	8	8	7
Monocrotophos	0.032	0.0317	8	7	7
Oryzalin	0.022	-	6	Not applicable	5
Phosphamidon	0.027	0.0225	8	7	6
Propiconazole	0.065	0.0626	8	8	7
Pyrazophos	0.019	0.0190	8	8	6
Tetradifon	0.021	-	6	Not applicable	6
TFNG	0.14	0.116	8	7	6
Thiabendazole	0.82	0.490	8	8	Not evaluated

Grapefruit – Summary of the performances of participating laboratories:



Total No of labs: 8