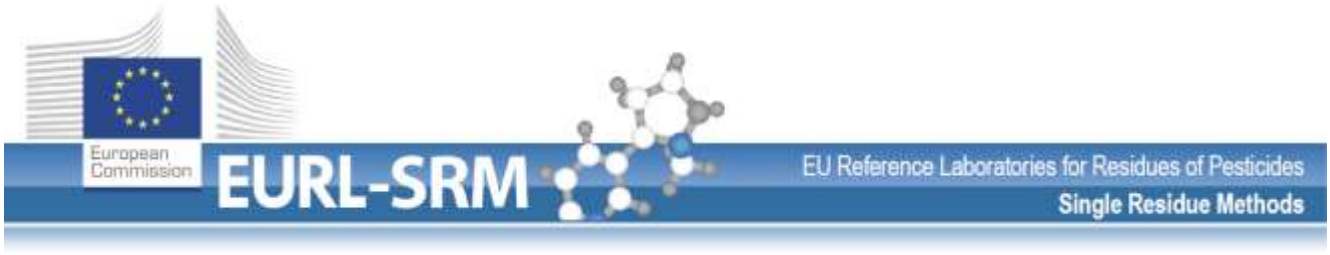

EU PROFICIENCY TEST

EUPT-SRM18, 2023

Residues of Pesticides Requiring Single Residue Methods Test Item: Honey

Preliminary Report

Michelangelo Anastassiades
Pat Schreiter

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General Remarks

- **All assigned values (AVs), relative robust standard deviations (CV*s) and z-scores presented in the following are preliminary.** These figures may slightly differ from those in the EUPT-SRM18 final report, which will be drafted following the results evaluation by the EUPT-Scientific Committee and the joint EURL/NRL-Workshop.
- All labs are kindly requested to check their results carefully and to **report any errors.** However, **only transcription errors by the organizers can be considered at this stage.**
- **In case of poor performance**, i.e. questionable or unacceptable scores (abs. z-score > 2 incl. false negatives) or false positive results, participants are provided with an additional **excel-file attached to this e-mail. Please use this file and the dropdown options to report your feedback on poor performance to the organizers by 30 August, 2023.** Therein you can briefly state the follow-up actions undertaken, the possible reasons for the poor performance, and any new results generated, if the PT-material was re-analysed by another (improved) procedure. In case technical advice is needed, please don't hesitate to the EURL-SRM.

Background

The proficiency test EUPT-SRM18 was conducted using honey as commodity for the test item. To prepare the test item, the robinia honey was purchased and spiked with a series of pesticides and mixed well with a rod mixer. An overview of the pesticides spiked to the test material is shown in **Table 1**. After spiking and homogenization, approximately 150 g of the mixture were filled into plastic bottles with screw caps and placed in the refrigerator until shipment to the participants. Shipment was conduct on Friday 19 May and was not cooled. This aspect was considered in the stability test.
Bromide and copper were not spiked and the participants were asked to determined and report the incurred levels.

Table 1: Analytes present in the SRM18 test material

Analytes	Contained in Honey	Spiked in Lab	Compounds applied in lab
2,4-D (free acid)		Yes	2,4-D
BAC-C14 (chloride)		Yes	BAC-C14 chloride
Chlorate		Yes	Sodium chlorate
DDAC-C10 (chloride)		Yes	DDAC-C10 chloride
Fluazifop (free acid)		Yes	Fluazifop
Glyphosate		Yes	Glyphosate
Matrine		Yes	Matrine
Nicotine		Yes	Nicotine
Oxymatrine		Yes	Oxymatrine
Perchlorate		Yes	Sodium perchlorate
Phosphonic acid		Yes	Phosphonic acid
Trinexapac (free acid)		Yes	Trinexapac
Bromide anion	Yes		
Copper	Yes		

Testing and shipment of EUPT-SRM18 Material

Four days prior to dispatching the PT-material to the participants, the individual bottels containing the test item were enbedded into a cardboard box containing tissue paper. The boxes were closed and stored in a walk-in refrigerator at 4 °C till they were picked up by DHL on Friday 19 May. The packages were sent without additional cooling, however, as indicated in the specific protocol, the material was to be stored in a refrigerator upon arriving.
Using an online submission tool, the participants were able to submit their results by 16 June, 2023. The requested methodology information for tentatively false negative results was to be submitted by 22 June, 2023.
10 bottles of the test item were selected randomly and tested for homogeneity prior to the shipment**.** Furthermore, the stability of the pesticides within the test material was checked during a period encompassing the EUPT duration.

Result Evaluation

In total, 71 OfLs (incl. NRLs) from EU and EFTA countries as well as 2 laboratories from an EU candidate countires and 3 laboratories from different third countries (UK, VN, UY) analysed at least one compound and submitted their result. For the calculation of the **preliminary assigned values** only the results submitted by the 71 OfLs from EU member states and EFTA countries were considered.
A summary of the preliminary assigned values and CV* is shown in **Table 2**.

Bromide and copper were not spiked to the material and listed on the target pesticides list as "extra compounds" in order to give labs the possibility to report their results of these two compounds at the levels typically encountered in samples. Both of them were present in the test material at their natural content, but no MRRL were set for them and they should not be considered in the assesment of labs' proficiency. The natural levels of bromide ion exceeded the currently valid MRL, which seems to have been set too low, not considering the background levels and the analytical capabilities of the laboratories. Copper was added to the list following explicit wish by DG-SANTE as copper is now included in the list of pesticides to be targeted within the framework of the multiannual coordinated control programme (MACP). The intention was to raise awarness of the need for OfLs to start establishing administrative arrangements for analysing MACP samples for copper. Finally, only 6 participating laboratories reported numerical results for bromide ion and further 28 laboratories reported that they have analysed for it, but did not encounter quantifiable levels. In case of copper, 10 laboratories reported numerical results and two other laboratories analysed for it but without encountering quantifiable levels. Because the number of the numerical results reported for the two compounds was not sufficient for establishing a statistically reliable assigned value, no futher evaluation was carried out for these two extra analytes.

False positives (FPs): In the EUPT-SRM18 there were no false positive results reported.

False negatives (FNs): Considering mandatory and optional analytes only, 17 EU/EFTA-OfLs reported in 28 cases results that were **preliminarily judged as FNs**. These concerned compounds that were present in the test item at relevant levels and were analysed but not detected by the labs or the detected concentrations were lower than their reporting limits, so that the participating labs corecctly reported them as not detected. In 27 cases, the assigned values are higher than the laboratories' RLs, therefore, they were judged as FNs. Following to the valid General protocol (Ed. 10th) the z scores for FNs were set at -4. The FN results concerned the following analytes: Trinexapac (10x), perchlorate (4x), BAC-C14 (3x), chlorate (3x), DDAC-C10 (2x) and one case each for fluazifop, glyphosate, matrine, nicotine and phosphonic acid. In one case Lab 82 had targeted nicotine and not detected with its RL (0.1 mg/kg) being higher than the assigned value (0.0868 mg/kg). In accordance with the previouse decision of the SC, this result was judged as a false negative result but marked with a note. This lab is encouraged to improve its analytical sensitivity for this compound.

Furthermore, 28 laboratories analysed for bromide ion but not detected it and 10 laboratories analysed for copper but not detedted it. Both analytes were present at their natural content, but belonged to extra analytes not included in the assesment of labs performance. As mentioned above, no further evaluation of these two analytes was carried out.

All submitted results of pesticides contained in the test material at relevant levels are shown in **Table 3**. **This table** also contain results of **participating laboratories settled outside the EU/EFTA-countries**. In all these cases the z-scores were calculated using the same assigned values as for the EU/EFTA-OfLs.

IMPORTANT: Please Give Feedback on Poor Performance!
Laboratories having obtained poor results (i.e. abs. z-scores >2, incl. false negatives, or false positives), are urged to initiate actions for tracing back the sources of errors.
A brief summary of these actions and of any identified sources for the poor performance, should be reported to the EURL-SRM by 30 August, 2023. Please use the Excel-file attached to the E-mail with the preliminary protocol.

Table 2: Preliminary evaluation of EUPT-SRM18 results in summary

Mandatory Compounds:

Analyte	2,4-D (free acid)	BAC-C14 chloride	Chlorate (anion)	DDAC-C10 chloride	Fluazifop (free acid)	Glyphosate	Matrine	Nicotine	Oxymatrine	Phosphonic acid
MRRL [mg/kg]	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03
No. of numerical results	60	42	45	44	58	63	39	40	36	44
therein Outliers	0	0	0	0	0	0	0	1	0	0
No. of FNs	0	3	3	2	1	1	1	2	0	1
Prelim. Assigned Value [mg/kg]	0.0523	0.119	0.102	0.149	0.0598	0.102	0.0873	0.0868[1]	0.0681	0.202
CV*	18.9%	19.0%	9.8%	25.0%	16.5%	12.8%	16.9%	24.8%	15.4%	20.9%

Optional Compounds:

Analyte	Perchlorate	Trinexapac (free acid)
MRRL [mg/kg]	0.01	0.01
No. of numerical results	42	21
therein Outliers	0	0
No. of FNs	4	10
Prelim. Assigned Value [mg/kg]	0.055	0.118
CV*	11.6%	14.7%

Extra Compounds

Analyte	Bromide ion	Copper
MRRL [mg/kg]	none	none
No. of numerical results	6	10
therein Outliers	Not asessed	Not asessed
Number of NDs (not numerical results reported)	28	2
Prelim. Assigned Value [mg/kg]	–	–
CV*	–	–

[1] In the case of nicotine, there were signs of a bimodal distrtibution of the results. Looking at the data there were no indications for a biased method type, but a notable bias between the robust mean values of the results submitted by labs correcting results for recovery (via recovery factor, ILIS, procedural and standard addition to sample portions) and that of labs not correcting for recovery (0.090 mg/kg vs. 0.084 mg/kg). As the robust mean of the whole population was relatively close to the robust mean of the population with recovery correction, the robust mean of the whole population was finally set as prel. AV and used to calculate the preliminary z-scores..

Table 3: Results reported by the participants for 10 compulsory, 2 optional and 2 extra analytes present in EUPT-SRM18

Sorted according to labcode. Participating laboratories based in countries outside the EU/EFTA zone are listed at the bottom of the table.

Table Legend:

- **Compulsory analytes are written in blue**, **optional analytes in green**, **extra analytes in violett**.
- FN: Result was preliminarily judged as a false negative (i.e. the analyte was present in the test sample at a relevant concentration with no quantitative result being reported by the lab)
- FN*: Same as FN, but with lab's RL being higher than the AV
- ND: analysed but not reported numerical results in case of bromide ion and copper at their natural content
- (o): Preliminary outliers (not included in the establishment of prAVs).
- Prel. AAZ: preliminary average of absolute z-scores of mandatory analytes for 5 or more results. Prel. AAZ-values >1.2 are highlighted in bold as they indicate that the average absolute bias is >30%.
- Cat.: Categorization of labs based on scope. Cat A was assigned to labs that have analysed and correctly found at least 9 out of the 10 compulsory analytes present in the sample, have analysed at least 13 out of the 15 compulsory analytes listed in the Target Pesticides List, and have not reported any false positive results within the compulsory analytes.

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
2	B	2,4-D (free acid)	0.0523	18.9%	0.038	**-1.1**	0.5
		BAC-C14 chloride	0.119	19.0%	0.129	**0.3**	
		DDAC-C10 chloride	0.149	25.0%	0.176	**0.7**	
		Fluazifop (free acid)	0.0598	16.5%	0.068	**0.5**	
		Glyphosate	0.102	12.8%	0.100	**-0.1**	
3	B	2,4-D (free acid)	0.0523	18.9%	0.066	**1.0**	1.2
		BAC-C14 chloride	0.119	19.0%	FN	**-4.0**	
		Chlorate (anion)	0.102	9.8%	0.079	**-0.9**	
		DDAC-C10 chloride	0.149	25.0%	FN	**-4.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.058	**-0.1**	
		Glyphosate	0.102	12.8%	0.13	**1.1**	
		Matrine	0.0873	16.9%	0.084	**-0.2**	
		Nicotine	0.0868	24.8%	0.095	**0.4**	
		Oxymatrine	0.0681	15.4%	0.072	**0.2**	
		Phosphonic acid	0.202	20.9%	0.21	**0.2**	
		Perchlorate	0.0550	11.6%	0.051	**-0.3**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
4	B	2,4-D (free acid)	0.0523	18.9%	0.028	**-1.9**	0.8
		BAC-C14 chloride	0.119	19.0%	0.126	**0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.200	**1.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.037	**-1.5**	
		Glyphosate	0.102	12.8%	0.11	**0.3**	
		Matrine	0.0873	16.9%	0.078	**-0.4**	
		Nicotine	0.0868	24.8%	0.067	**-0.9**	
		Oxymatrine	0.0681	15.4%	0.068	**0.0**	
5	B	2,4-D (free acid)	0.0523	18.9%	0.0341	**-1.4**	1.0
		BAC-C14 chloride	0.119	19.0%	0.0757	**-1.5**	
		Chlorate (anion)	0.102	9.8%	0.115	**0.5**	
		DDAC-C10 chloride	0.149	25.0%	0.0947	**-1.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.0462	**-0.9**	
		Glyphosate	0.102	12.8%	0.154	**2.0**	
		Matrine	0.0873	16.9%	0.0801	**-0.3**	
		Phosphonic acid	0.202	20.9%	0.201	**0.0**	
		Perchlorate	0.0550	11.6%	0.0530	**-0.1**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	ND	–	
6	B	2,4-D (free acid)	0.0523	18.9%	0.0510	**-0.1**	0.6
		Chlorate (anion)	0.102	9.8%	0.106	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.0700	**0.7**	
		Glyphosate	0.102	12.8%	0.0930	**-0.4**	
		Matrine	0.0873	16.9%	0.120	**1.5**	
		Nicotine	0.0868	24.8%	0.0985	**0.5**	
		Oxymatrine	0.0681	15.4%	0.0784	**0.6**	
		Phosphonic acid	0.202	20.9%	0.223	**0.4**	
		Perchlorate	0.0550	11.6%	0.0510	**-0.3**	
		Trinexapac (free acid)	0.118	14.7%	0.136	**0.6**	
		Bromide (anion)	–	–	0.943	–	
7	B	2,4-D (free acid)	0.0523	18.9%	0.057	**0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.058	**-0.1**	
		Glyphosate	0.102	12.8%	0.11	**0.3**	
		Nicotine	0.0868	24.8%	0.058	**-1.3**	
10	B	Glyphosate	0.102	12.8%	0.198	**3.8**	
		Copper	–	–	0.49	–	
11	A	2,4-D (free acid)	0.0523	18.9%	0.0572	**0.4**	0.9
		BAC-C14 chloride	0.119	19.0%	0.167	**1.6**	
		Chlorate (anion)	0.102	9.8%	0.120	**0.7**	
		DDAC-C10 chloride	0.149	25.0%	0.190	**1.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.0403	**-1.3**	
		Glyphosate	0.102	12.8%	0.0935	**-0.3**	
		Matrine	0.0873	16.9%	0.115	**1.3**	
		Nicotine	0.0868	24.8%	0.113	**1.2**	
		Oxymatrine	0.0681	15.4%	0.0809	**0.8**	
		Phosphonic acid	0.202	20.9%	0.225	**0.5**	
		Perchlorate	0.0550	11.6%	FN	**-4.0**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		Bromide (anion)	–	–	ND	–	
12	A	2,4-D (free acid)	0.0523	18.9%	0.044	**-0.6**	0.5
		BAC-C14 chloride	0.119	19.0%	0.131	**0.4**	
		Chlorate (anion)	0.102	9.8%	0.107	**0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.138	**-0.3**	
		Fluazifop (free acid)	0.0598	16.5%	0.064	**0.3**	
		Glyphosate	0.102	12.8%	0.099	**-0.1**	
		Matrine	0.0873	16.9%	0.105	**0.8**	
		Nicotine	0.0868	24.8%	0.108	**1.0**	
		Oxymatrine	0.0681	15.4%	0.085	**1.0**	
		Phosphonic acid	0.202	20.9%	0.197	**-0.1**	
		Perchlorate	0.0550	11.6%	0.071	**1.2**	
		Trinexapac (free acid)	0.118	14.7%	0.121	**0.1**	
13	B	2,4-D (free acid)	0.0523	18.9%	0.0509	**-0.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.0733	**0.9**	
		Glyphosate	0.102	12.8%	0.107	**0.2**	
		Trinexapac (free acid)	0.118	14.7%	0.118	**0.0**	
14	A	2,4-D (free acid)	0.0523	18.9%	0.0576	**0.4**	0.5
		BAC-C14 chloride	0.119	19.0%	0.104	**-0.5**	
		Chlorate (anion)	0.102	9.8%	0.102	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.135	**-0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.0567	**-0.2**	
		Glyphosate	0.102	12.8%	0.100	**-0.1**	
		Matrine	0.0873	16.9%	0.0927	**0.2**	
		Nicotine	0.0868	24.8%	0.0950	**0.4**	
		Oxymatrine	0.0681	15.4%	0.0786	**0.6**	
		Phosphonic acid	0.202	20.9%	0.300	**1.9**	
		Perchlorate	0.0550	11.6%	0.0627	**0.6**	
		Trinexapac (free acid)	0.118	14.7%	0.121	**0.1**	
		Bromide (anion)	–	–	ND	–	
15	A	2,4-D (free acid)	0.0523	18.9%	0.0551	**0.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.101	**-0.6**	
		Chlorate (anion)	0.102	9.8%	0.103	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.126	**-0.6**	
		Fluazifop (free acid)	0.0598	16.5%	0.0612	**0.1**	
		Glyphosate	0.102	12.8%	0.0921	**-0.4**	
		Matrine	0.0873	16.9%	0.0802	**-0.3**	
		Nicotine	0.0868	24.8%	0.0951	**0.4**	
		Oxymatrine	0.0681	15.4%	0.0638	**-0.3**	
		Phosphonic acid	0.202	20.9%	0.259	**1.1**	
		Bromide (anion)	–	–	ND	–	
16	B	2,4-D (free acid)	0.0523	18.9%	0.048	**-0.3**	
		Fluazifop (free acid)	0.0598	16.5%	0.070	**0.7**	
		Glyphosate	0.102	12.8%	0.103	**0.0**	
		Phosphonic acid	0.202	20.9%	0.176	**-0.5**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	0.065	–	
		Copper	–	–	0.05	–	
17	B	2,4-D (free acid)	0.0523	18.9%	0.0598	**0.6**	1.0
		BAC-C14 chloride	0.119	19.0%	0.0849	**-1.1**	
		DDAC-C10 chloride	0.149	25.0%	0.0986	**-1.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.0676	**0.5**	
		Glyphosate	0.102	12.8%	0.0975	**-0.2**	
		Phosphonic acid	0.202	20.9%	0.100	**-2.0**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	ND	–	
18	B	2,4-D (free acid)	0.0523	18.9%	0.05	**-0.2**	1.0
		Chlorate (anion)	0.102	9.8%	FN	**-4.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.06	**0.0**	
		Glyphosate	0.102	12.8%	0.12	**0.7**	
		Matrine	0.0873	16.9%	0.08	**-0.3**	
		Nicotine	0.0868	24.8%	0.06	**-1.2**	
		Oxymatrine	0.0681	15.4%	0.05	**-1.1**	
		Phosphonic acid	0.202	20.9%	0.21	**0.2**	
		Perchlorate	0.0550	11.6%	0.06	**0.4**	
19	B	2,4-D (free acid)	0.0523	18.9%	0.0474	**-0.4**	1.1
		BAC-C14 chloride	0.119	19.0%	0.0389	**-2.7**	
		Chlorate (anion)	0.102	9.8%	0.0910	**-0.4**	
		DDAC-C10 chloride	0.149	25.0%	0.0567	**-2.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.0584	**-0.1**	
		Glyphosate	0.102	12.8%	0.0773	**-1.0**	
		Phosphonic acid	0.202	20.9%	0.1844	**-0.3**	
		Perchlorate	0.0550	11.6%	0.0480	**-0.5**	
20	A	2,4-D (free acid)	0.0523	18.9%	0.041	**-0.9**	0.4
		BAC-C14 chloride	0.119	19.0%	0.129	**0.3**	
		Chlorate (anion)	0.102	9.8%	0.101	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.134	**-0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.058	**-0.1**	
		Glyphosate	0.102	12.8%	0.100	**-0.1**	
		Matrine	0.0873	16.9%	0.082	**-0.2**	
		Nicotine	0.0868	24.8%	0.098	**0.5**	
		Oxymatrine	0.0681	15.4%	0.081	**0.8**	
		Phosphonic acid	0.202	20.9%	0.212	**0.2**	
		Perchlorate	0.0550	11.6%	0.053	**-0.1**	
		Trinexapac (free acid)	0.118	14.7%	0.070	**-1.6**	
		Bromide (anion)	–	–	0.80	–	
		Copper	–	–	0.036	–	
21	B	Glyphosate	0.102	12.8%	0.103	**0.0**	
22	B	Glyphosate	0.102	12.8%	0.093	**-0.4**	
		Phosphonic acid	0.202	20.9%	0.22	**0.4**	
23	A	2,4-D (free acid)	0.0523	18.9%	0.050	**-0.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.118	**0.0**	
		Chlorate (anion)	0.102	9.8%	0.117	**0.6**	
		DDAC-C10 chloride	0.149	25.0%	0.155	**0.2**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		Fluazifop (free acid)	0.0598	16.5%	0.055	**-0.3**	
		Glyphosate	0.102	12.8%	0.095	**-0.3**	
		Matrine	0.0873	16.9%	0.097	**0.4**	
		Nicotine	0.0868	24.8%	0.060	**-1.2**	
		Oxymatrine	0.0681	15.4%	0.076	**0.5**	
		Phosphonic acid	0.202	20.9%	0.189	**-0.3**	
		Perchlorate	0.0550	11.6%	0.078	**1.7**	
24	B	Glyphosate	0.102	12.8%	0.0797	**-0.9**	
25	B	2,4-D (free acid)	0.0523	18.9%	0.069	**1.3**	0.9
		Chlorate (anion)	0.102	9.8%	0.139	**1.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.047	**-0.9**	
		Glyphosate	0.102	12.8%	0.112	**0.4**	
		Phosphonic acid	0.202	20.9%	0.184	**-0.4**	
		Perchlorate	0.0550	11.6%	0.052	**-0.2**	
26	A	2,4-D (free acid)	0.0523	18.9%	0.054	**0.1**	0.7
		BAC-C14 chloride	0.119	19.0%	0.040	**-2.7**	
		Chlorate (anion)	0.102	9.8%	0.092	**-0.4**	
		DDAC-C10 chloride	0.149	25.0%	0.074	**-2.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.049	**-0.7**	
		Glyphosate	0.102	12.8%	0.104	**0.1**	
		Matrine	0.0873	16.9%	0.091	**0.2**	
		Nicotine	0.0868	24.8%	0.101	**0.7**	
		Oxymatrine	0.0681	15.4%	0.068	**0.0**	
		Phosphonic acid	0.202	20.9%	0.193	**-0.2**	
		Perchlorate	0.0550	11.6%	0.049	**-0.4**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	ND	–	
27	A	2,4-D (free acid)	0.0523	18.9%	0.0756	**1.8**	0.6
		BAC-C14 chloride	0.119	19.0%	0.122	**0.1**	
		Chlorate (anion)	0.102	9.8%	0.100	**-0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.153	**0.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.0682	**0.6**	
		Glyphosate	0.102	12.8%	0.110	**0.3**	
		Matrine	0.0873	16.9%	0.0743	**-0.6**	
		Nicotine	0.0868	24.8%	0.0770	**-0.5**	
		Phosphonic acid	0.202	20.9%	0.285	**1.6**	
28	B	2,4-D (free acid)	0.0523	18.9%	0.0681	**1.2**	1.1
		Chlorate (anion)	0.102	9.8%	0.0803	**-0.9**	
		Fluazifop (free acid)	0.0598	16.5%	0.0684	**0.6**	
		Glyphosate	0.102	12.8%	0.0671	**-1.4**	
		Phosphonic acid	0.202	20.9%	0.123	**-1.6**	
		Perchlorate	0.0550	11.6%	0.0566	**0.1**	
29	B	2,4-D (free acid)	0.0523	18.9%	0.067	**1.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.128	**4.6**	
30	B	2,4-D (free acid)	0.0523	18.9%	0.052	**0.0**	
		BAC-C14 chloride	0.119	19.0%	0.164	**1.5**	
		DDAC-C10 chloride	0.149	25.0%	0.372	**6.0**	
		Nicotine	0.0868	24.8%	0.344	**11.9** [o]	
31	B	BAC-C14 chloride	0.119	19.0%	0.104	**-0.5**	
		Chlorate (anion)	0.102	9.8%	0.105	**0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.137	**-0.3**	
		Glyphosate	0.102	12.8%	0.203	**4.0**	
		Perchlorate	0.0550	11.6%	0.060	**0.4**	
32	A	2,4-D (free acid)	0.0523	18.9%	0.054	**0.1**	0.2
		BAC-C14 chloride	0.119	19.0%	0.108	**-0.4**	
		Chlorate (anion)	0.102	9.8%	0.097	**-0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.110	**-1.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.057	**-0.2**	
		Glyphosate	0.102	12.8%	0.108	**0.2**	
		Matrine	0.0873	16.9%	0.087	**0.0**	
		Nicotine	0.0868	24.8%	0.091	**0.2**	
		Oxymatrine	0.0681	15.4%	0.066	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.200	**0.0**	
		Perchlorate	0.0550	11.6%	0.045	**-0.7**	
		Trinexapac (free acid)	0.118	14.7%	0.133	**0.5**	
		Bromide (anion)	–	–	ND	–	
33	A	2,4-D (free acid)	0.0523	18.9%	0.055	**0.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.135	**0.5**	
		Chlorate (anion)	0.102	9.8%	0.108	**0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.123	**-0.7**	
		Fluazifop (free acid)	0.0598	16.5%	0.061	**0.1**	
		Glyphosate	0.102	12.8%	0.100	**-0.1**	
		Matrine	0.0873	16.9%	0.100	**0.6**	
		Nicotine	0.0868	24.8%	0.102	**0.7**	
		Oxymatrine	0.0681	15.4%	0.086	**1.1**	
		Phosphonic acid	0.202	20.9%	0.204	**0.0**	
		Perchlorate	0.0550	11.6%	0.055	**0.0**	
		Bromide (anion)	–	–	ND	–	
35	A	2,4-D (free acid)	0.0523	18.9%	0.0664	**1.1**	0.8
		BAC-C14 chloride	0.119	19.0%	0.102	**-0.6**	
		Chlorate (anion)	0.102	9.8%	0.121	**0.7**	
		DDAC-C10 chloride	0.149	25.0%	0.116	**-0.9**	
		Fluazifop (free acid)	0.0598	16.5%	0.0688	**0.6**	
		Glyphosate	0.102	12.8%	0.117	**0.6**	
		Matrine	0.0873	16.9%	0.0763	**-0.5**	
		Nicotine	0.0868	24.8%	0.0731	**-0.6**	
		Oxymatrine	0.0681	15.4%	0.0515	**-1.0**	
		Phosphonic acid	0.202	20.9%	0.136	**-1.3**	
		Perchlorate	0.0550	11.6%	0.0580	**0.2**	
		Bromide (anion)	–	–	0.0770	–	
36	B	2,4-D (free acid)	0.0523	18.9%	0.0502	**-0.2**	0.2
		BAC-C14 chloride	0.119	19.0%	0.115	**-0.1**	
		Chlorate (anion)	0.102	9.8%	0.105	**0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.142	**-0.2**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		Fluazifop (free acid)	0.0598	16.5%	0.0529	**-0.5**	
		Glyphosate	0.102	12.8%	0.0971	**-0.2**	
37	A	2,4-D (free acid)	0.0523	18.9%	0.051	**-0.1**	0.5
		BAC-C14 chloride	0.119	19.0%	0.097	**-0.7**	
		Chlorate (anion)	0.102	9.8%	0.093	**-0.4**	
		DDAC-C10 chloride	0.149	25.0%	0.147	**-0.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.051	**-0.6**	
		Glyphosate	0.102	12.8%	0.104	**0.1**	
		Matrine	0.0873	16.9%	0.099	**0.5**	
		Nicotine	0.0868	24.8%	0.061	**-1.2**	
		Oxymatrine	0.0681	15.4%	0.080	**0.7**	
		Phosphonic acid	0.202	20.9%	0.188	**-0.3**	
		Perchlorate	0.0550	11.6%	0.060	**0.4**	
		Trinexapac (free acid)	0.118	14.7%	0.118	**0.0**	
		Bromide (anion)	–	–	ND	–	
38	A	2,4-D (free acid)	0.0523	18.9%	0.054	**0.1**	0.5
		BAC-C14 chloride	0.119	19.0%	0.108	**-0.4**	
		Chlorate (anion)	0.102	9.8%	0.089	**-0.5**	
		DDAC-C10 chloride	0.149	25.0%	0.157	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.060	**0.0**	
		Glyphosate	0.102	12.8%	0.106	**0.2**	
		Matrine	0.0873	16.9%	0.110	**1.0**	
		Nicotine	0.0868	24.8%	0.118	**1.4**	
		Oxymatrine	0.0681	15.4%	0.066	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.171	**-0.6**	
		Perchlorate	0.0550	11.6%	0.060	**0.4**	
		Trinexapac (free acid)	0.118	14.7%	0.114	**-0.1**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.057	–	
39	B	Glyphosate	0.102	12.8%	0.097	**-0.2**	
		Perchlorate	0.0550	11.6%	0.055	**0.0**	
40	B	2,4-D (free acid)	0.0523	18.9%	0.0501	**-0.2**	0.5
		BAC-C14 chloride	0.119	19.0%	0.116	**-0.1**	
		Chlorate (anion)	0.102	9.8%	0.0914	**-0.4**	
		DDAC-C10 chloride	0.149	25.0%	0.174	**0.7**	
		Fluazifop (free acid)	0.0598	16.5%	0.0505	**-0.6**	
		Glyphosate	0.102	12.8%	0.0748	**-1.1**	
		Perchlorate	0.0550	11.6%	0.0578	**0.2**	
41	B	2,4-D (free acid)	0.0523	18.9%	0.0547	**0.2**	0.6
		Chlorate (anion)	0.102	9.8%	0.102	**0.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.0720	**0.8**	
		Glyphosate	0.102	12.8%	0.117	**0.6**	
		Matrine	0.0873	16.9%	0.0651	**-1.0**	
		Nicotine	0.0868	24.8%	0.0567	**-1.4**	
		Oxymatrine	0.0681	15.4%	0.0640	**-0.2**	
		Phosphonic acid	0.202	20.9%	0.179	**-0.5**	
		Perchlorate	0.0550	11.6%	0.0513	**-0.3**	
		Trinexapac (free acid)	0.118	14.7%	0.140	**0.7**	
		Bromide (anion)	–	–	ND	–	
42	A	2,4-D (free acid)	0.0523	18.9%	0.048	**-0.3**	0.4
		BAC-C14 chloride	0.119	19.0%	0.11	**-0.3**	
		Chlorate (anion)	0.102	9.8%	0.1	**-0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.12	**-0.8**	
		Fluazifop (free acid)	0.0598	16.5%	0.053	**-0.5**	
		Glyphosate	0.102	12.8%	0.1	**-0.1**	
		Matrine	0.0873	16.9%	0.085	**-0.1**	
		Nicotine	0.0868	24.8%	0.074	**-0.6**	
		Oxymatrine	0.0681	15.4%	0.058	**-0.6**	
		Phosphonic acid	0.202	20.9%	0.19	**-0.2**	
		Perchlorate	0.0550	11.6%	0.052	**-0.2**	
		Trinexapac (free acid)	0.118	14.7%	0.109	**-0.3**	
		Bromide (anion)	–	–	ND	–	
43	B	2,4-D (free acid)	0.0523	18.9%	0.0441	**-0.6**	
		Glyphosate	0.102	12.8%	0.127	**1.0**	
44	A	2,4-D (free acid)	0.0523	18.9%	0.060	**0.6**	0.4
		BAC-C14 chloride	0.119	19.0%	0.122	**0.1**	
		Chlorate (anion)	0.102	9.8%	0.099	**-0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.173	**0.6**	
		Fluazifop (free acid)	0.0598	16.5%	0.068	**0.5**	
		Glyphosate	0.102	12.8%	0.118	**0.6**	
		Matrine	0.0873	16.9%	0.095	**0.4**	
		Nicotine	0.0868	24.8%	0.089	**0.1**	
		Oxymatrine	0.0681	15.4%	0.070	**0.1**	
		Phosphonic acid	0.202	20.9%	0.253	**1.0**	
		Perchlorate	0.0550	11.6%	0.053	**-0.1**	
		Bromide (anion)	–	–	ND	–	
45	B	2,4-D (free acid)	0.0523	18.9%	0.060	**0.6**	1.8
		BAC-C14 chloride	0.119	19.0%	0.134	**0.5**	
		Chlorate (anion)	0.102	9.8%	FN	**-4.0**	
		DDAC-C10 chloride	0.149	25.0%	0.173	**0.6**	
		Fluazifop (free acid)	0.0598	16.5%	0.057	**-0.2**	
		Glyphosate	0.102	12.8%	FN	**-4.0**	
		Matrine	0.0873	16.9%	0.050	**-1.7**	
		Nicotine	0.0868	24.8%	0.078	**-0.4**	
		Oxymatrine	0.0681	15.4%	0.033	**-2.1**	
		Phosphonic acid	0.202	20.9%	FN	**-4.0**	
		Perchlorate	0.0550	11.6%	FN	**-4.0**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.230	–	
46	B	2,4-D (free acid)	0.0523	18.9%	0.0345	**-1.4**	
		BAC-C14 chloride	0.119	19.0%	0.263	**4.8**	
		DDAC-C10 chloride	0.149	25.0%	0.211	**1.7**	
		Fluazifop (free acid)	0.0598	16.5%	0.0428	**-1.1**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
47	B	2,4-D (free acid)	0.0523	18.9%	0.0351	**-1.3**	
		Chlorate (anion)	0.102	9.8%	0.109	**0.3**	
		Fluazifop (free acid)	0.0598	16.5%	0.0440	**-1.1**	
		Nicotine	0.0868	24.8%	0.107	**0.9**	
		Perchlorate	0.0550	11.6%	0.0520	**-0.2**	
		Trinexapac (free acid)	0.118	14.7%	0.128	**0.3**	
48	A	2,4-D (free acid)	0.0523	18.9%	0.068	**1.2**	0.6
		BAC-C14 chloride	0.119	19.0%	0.152	**1.1**	
		Chlorate (anion)	0.102	9.8%	0.105	**0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.175	**0.7**	
		Fluazifop (free acid)	0.0598	16.5%	0.079	**1.3**	
		Glyphosate	0.102	12.8%	0.109	**0.3**	
		Matrine	0.0873	16.9%	0.082	**-0.2**	
		Nicotine	0.0868	24.8%	0.061	**-1.2**	
		Oxymatrine	0.0681	15.4%	0.07	**0.1**	
		Phosphonic acid	0.202	20.9%	0.199	**-0.1**	
		Perchlorate	0.0550	11.6%	0.057	**0.1**	
		Trinexapac (free acid)	0.118	14.7%	0.127	**0.3**	
		Bromide (anion)	–	–	ND	–	
50	B	2,4-D (free acid)	0.0523	18.9%	0.0530	**0.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.0620	**0.1**	
		Glyphosate	0.102	12.8%	0.0890	**-0.5**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.0220	–	
51	B	2,4-D (free acid)	0.0523	18.9%	0.0594	**0.5**	0.6
		BAC-C14 chloride	0.119	19.0%	0.121	**0.1**	
		Chlorate (anion)	0.102	9.8%	0.111	**0.4**	
		DDAC-C10 chloride	0.149	25.0%	0.114	**-0.9**	
		Fluazifop (free acid)	0.0598	16.5%	0.0724	**0.8**	
		Glyphosate	0.102	12.8%	0.0920	**-0.4**	
		Nicotine	0.0868	24.8%	0.0751	**-0.5**	
		Phosphonic acid	0.202	20.9%	0.147	**-1.1**	
		Perchlorate	0.0550	11.6%	0.0571	**0.2**	
		Bromide (anion)	–	–	ND	–	
52	B	2,4-D (free acid)	0.0523	18.9%	0.0617	**0.7**	1.0
		Chlorate (anion)	0.102	9.8%	0.102	**0.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.0645	**0.3**	
		Glyphosate	0.102	12.8%	0.108	**0.2**	
		Matrine	0.0873	16.9%	FN	**-4.0**	
		Perchlorate	0.0550	11.6%	0.0510	**-0.3**	
		Trinexapac (free acid)	0.118	14.7%	0.110	**-0.3**	
		Bromide (anion)	–	–	ND	–	
53	B	2,4-D (free acid)	0.0523	18.9%	0.0575	**0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.056	**-0.3**	
		Glyphosate	0.102	12.8%	0.107	**0.2**	
		Trinexapac (free acid)	0.118	14.7%	0.128	**0.3**	
54	A	2,4-D (free acid)	0.0523	18.9%	0.036	**-1.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.115	**-0.1**	
		Chlorate (anion)	0.102	9.8%	0.106	**0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.157	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.048	**-0.8**	
		Glyphosate	0.102	12.8%	0.096	**-0.2**	
		Matrine	0.0873	16.9%	0.102	**0.7**	
		Nicotine	0.0868	24.8%	0.086	**0.0**	
		Oxymatrine	0.0681	15.4%	0.059	**-0.5**	
		Phosphonic acid	0.202	20.9%	0.207	**0.1**	
		Perchlorate	0.0550	11.6%	0.060	**0.4**	
		Trinexapac (free acid)	0.118	14.7%	0.096	**-0.7**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.044	–	
55	A	2,4-D (free acid)	0.0523	18.9%	0.055	**0.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.142	**0.8**	
		Chlorate (anion)	0.102	9.8%	0.104	**0.1**	
		DDAC-C10 chloride	0.149	25.0%	0.170	**0.6**	
		Fluazifop (free acid)	0.0598	16.5%	0.064	**0.3**	
		Glyphosate	0.102	12.8%	0.091	**-0.4**	
		Matrine	0.0873	16.9%	0.092	**0.2**	
		Nicotine	0.0868	24.8%	0.101	**0.7**	
		Oxymatrine	0.0681	15.4%	0.066	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.191	**-0.2**	
		Perchlorate	0.0550	11.6%	0.056	**0.1**	
		Trinexapac (free acid)	0.118	14.7%	0.186	**2.3**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.079	–	
57	A	2,4-D (free acid)	0.0523	18.9%	0.042	**-0.8**	0.8
		BAC-C14 chloride	0.119	19.0%	0.056	**-2.1**	
		Chlorate (anion)	0.102	9.8%	0.103	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.071	**-2.1**	
		Fluazifop (free acid)	0.0598	16.5%	0.059	**-0.1**	
		Glyphosate	0.102	12.8%	0.093	**-0.4**	
		Matrine	0.0873	16.9%	0.065	**-1.0**	
		Nicotine	0.0868	24.8%	0.056	**-1.4**	
		Oxymatrine	0.0681	15.4%	0.062	**-0.4**	
		Phosphonic acid	0.202	20.9%	0.195	**-0.1**	
		Perchlorate	0.0550	11.6%	0.040	**-1.1**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	ND	–	
58	B	BAC-C14 chloride	0.119	19.0%	FN	**-4.0**	4.1
		Chlorate (anion)	0.102	9.8%	0.285	**7.2**	
		DDAC-C10 chloride	0.149	25.0%	0.199	**1.3**	
		Fluazifop (free acid)	0.0598	16.5%	FN	**-4.0**	
		Glyphosate	0.102	12.8%	0.253	**5.9**	
		Nicotine	0.0868	24.8%	0.18	**4.3**	
		Phosphonic acid	0.202	20.9%	0.471	**5.3**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		Perchlorate	0.0550	11.6%	0.03	**-1.8**	
59	B	2,4-D (free acid)	0.0523	18.9%	0.0712	**1.4**	
		BAC-C14 chloride	0.119	19.0%	0.149	**1.0**	
		DDAC-C10 chloride	0.149	25.0%	0.206	**1.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.0720	**0.8**	
61	B	2,4-D (free acid)	0.0523	18.9%	0.027	**-1.9**	
		DDAC-C10 chloride	0.149	25.0%	0.121	**-0.8**	
		Fluazifop (free acid)	0.0598	16.5%	0.051	**-0.6**	
		Glyphosate	0.102	12.8%	0.085	**-0.7**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
62	A	2,4-D (free acid)	0.0523	18.9%	0.0497	**-0.2**	0.2
		BAC-C14 chloride	0.119	19.0%	0.122	**0.1**	
		Chlorate (anion)	0.102	9.8%	0.103	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.166	**0.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.0598	**0.0**	
		Glyphosate	0.102	12.8%	0.0926	**-0.4**	
		Matrine	0.0873	16.9%	0.0855	**-0.1**	
		Nicotine	0.0868	24.8%	0.0925	**0.3**	
		Oxymatrine	0.0681	15.4%	0.0683	**0.0**	
		Phosphonic acid	0.202	20.9%	0.172	**-0.6**	
		Perchlorate	0.0550	11.6%	0.0555	**0.0**	
		Trinexapac (free acid)	0.118	14.7%	0.127	**0.3**	
		Bromide (anion)	–	–	ND	–	
63	B	2,4-D (free acid)	0.0523	18.9%	0.0394	**-1.0**	1.0
		Chlorate (anion)	0.102	9.8%	0.0919	**-0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.0492	**-0.7**	
		Glyphosate	0.102	12.8%	0.0650	**-1.5**	
		Matrine	0.0873	16.9%	0.0747	**-0.6**	
		Oxymatrine	0.0681	15.4%	0.0544	**-0.8**	
		Phosphonic acid	0.202	20.9%	0.114	**-1.7**	
		Perchlorate	0.0550	11.6%	0.0505	**-0.3**	
		Bromide (anion)	–	–	ND	–	
64	A	2,4-D (free acid)	0.0523	18.9%	0.049	**-0.3**	0.3
		BAC-C14 chloride	0.119	19.0%	0.116	**-0.1**	
		Chlorate (anion)	0.102	9.8%	0.107	**0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.158	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.062	**0.1**	
		Glyphosate	0.102	12.8%	0.101	**0.0**	
		Matrine	0.0873	16.9%	0.071	**-0.7**	
		Nicotine	0.0868	24.8%	0.094	**0.3**	
		Oxymatrine	0.0681	15.4%	0.066	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.243	**0.8**	
		Perchlorate	0.0550	11.6%	FN	**-4.0**	
		Trinexapac (free acid)	0.118	14.7%	0.109	**-0.3**	
65	B	Glyphosate	0.102	12.8%	0.0973	**-0.2**	
66	B	2,4-D (free acid)	0.0523	18.9%	0.051	**-0.1**	0.9
		Chlorate (anion)	0.102	9.8%	0.107	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.061	**0.1**	
		Glyphosate	0.102	12.8%	0.108	**0.2**	
		Matrine	0.0873	16.9%	0.103	**0.7**	
		Nicotine	0.0868	24.8%	0.098	**0.5**	
		Oxymatrine	0.0681	15.4%	0.072	**0.2**	
		Phosphonic acid	0.202	20.9%	0.480	**5.5**	
		Perchlorate	0.0550	11.6%	0.112	**4.1**	
		Bromide (anion)	–	–	ND	–	
67	A	2,4-D (free acid)	0.0523	18.9%	0.0510	**-0.1**	0.4
		BAC-C14 chloride	0.119	19.0%	0.124	**0.2**	
		Chlorate (anion)	0.102	9.8%	0.103	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.188	**1.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.0603	**0.0**	
		Glyphosate	0.102	12.8%	0.114	**0.5**	
		Matrine	0.0873	16.9%	0.0847	**-0.1**	
		Nicotine	0.0868	24.8%	0.0937	**0.3**	
		Phosphonic acid	0.202	20.9%	0.260	**1.1**	
		Perchlorate	0.0550	11.6%	0.0543	**-0.1**	
		Trinexapac (free acid)	0.118	14.7%	0.0977	**-0.7**	
		Bromide (anion)	–	–	ND	–	
69	B	2,4-D (free acid)	0.0523	18.9%	0.051	**-0.1**	1.2
		BAC-C14 chloride	0.119	19.0%	0.157	**1.3**	
		Chlorate (anion)	0.102	9.8%	FN	**-4.0**	
		DDAC-C10 chloride	0.149	25.0%	0.150	**0.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.063	**0.2**	
		Glyphosate	0.102	12.8%	0.075	**-1.1**	
		Matrine	0.0873	16.9%	0.103	**0.7**	
		Nicotine	0.0868	24.8%	FN	**-4.0**	
		Oxymatrine	0.0681	15.4%	0.066	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.221	**0.4**	
		Perchlorate	0.0550	11.6%	FN	**-4.0**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	0.110	–	
		Copper	–	–	0.046	–	
71	B	2,4-D (free acid)	0.0523	18.9%	0.052	**0.0**	0.9
		Fluazifop (free acid)	0.0598	16.5%	0.112	**3.5**	
		Glyphosate	0.102	12.8%	0.089	**-0.5**	
		Matrine	0.0873	16.9%	0.086	**-0.1**	
		Nicotine	0.0868	24.8%	0.071	**-0.7**	
		Oxymatrine	0.0681	15.4%	0.054	**-0.8**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
73	A	2,4-D (free acid)	0.0523	18.9%	0.0532	**0.1**	0.4
		BAC-C14 chloride	0.119	19.0%	0.113	**-0.2**	
		Chlorate (anion)	0.102	9.8%	0.0951	**-0.3**	
		DDAC-C10 chloride	0.149	25.0%	0.148	**0.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.0536	**-0.4**	
		Glyphosate	0.102	12.8%	0.0923	**-0.4**	

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		Matrine	0.0873	16.9%	0.0737	**-0.6**	
		Nicotine	0.0868	24.8%	0.0453	**-1.9**	
		Oxymatrine	0.0681	15.4%	0.0667	**-0.1**	
		Perchlorate	0.0550	11.6%	0.0571	**0.2**	
		Trinexapac (free acid)	0.118	14.7%	0.0870	**-1.1**	
		Bromide (anion)	–	–	ND	–	
74	A	2,4-D (free acid)	0.0523	18.9%	0.05	**-0.2**	0.4
		BAC-C14 chloride	0.119	19.0%	0.106	**-0.4**	
		Chlorate (anion)	0.102	9.8%	0.103	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.105	**-1.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.06	**0.0**	
		Glyphosate	0.102	12.8%	0.099	**-0.1**	
		Matrine	0.0873	16.9%	0.1	**0.6**	
		Nicotine	0.0868	24.8%	0.097	**0.5**	
		Oxymatrine	0.0681	15.4%	0.057	**-0.7**	
		Phosphonic acid	0.202	20.9%	0.203	**0.0**	
		Perchlorate	0.0550	11.6%	0.07	**1.1**	
		Trinexapac (free acid)	0.118	14.7%	0.11	**-0.3**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	ND	–	
75	B	Chlorate (anion)	0.102	9.8%	0.085	**-0.7**	
		Glyphosate	0.102	12.8%	0.099	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.118	**-1.7**	
		Perchlorate	0.0550	11.6%	0.046	**-0.7**	
77	B	BAC-C14 chloride	0.119	19.0%	FN	**-4.0**	
		DDAC-C10 chloride	0.149	25.0%	FN	**-4.0**	
		Copper	–	–	0.0443	–	
78	A	2,4-D (free acid)	0.0523	18.9%	0.044	**-0.6**	0.5
		BAC-C14 chloride	0.119	19.0%	0.107	**-0.4**	
		Chlorate (anion)	0.102	9.8%	0.084	**-0.7**	
		DDAC-C10 chloride	0.149	25.0%	0.166	**0.5**	
		Fluazifop (free acid)	0.0598	16.5%	0.049	**-0.7**	
		Glyphosate	0.102	12.8%	0.1	**-0.1**	
		Matrine	0.0873	16.9%	0.093	**0.3**	
		Nicotine	0.0868	24.8%	0.109	**1.0**	
		Oxymatrine	0.0681	15.4%	0.07	**0.1**	
		Phosphonic acid	0.202	20.9%	0.206	**0.1**	
		Perchlorate	0.0550	11.6%	0.048	**-0.5**	
		Bromide (anion)	–	–	ND	–	
79	A	2,4-D (free acid)	0.0523	18.9%	0.0614	**0.7**	0.5
		BAC-C14 chloride	0.119	19.0%	0.117	**-0.1**	
		Chlorate (anion)	0.102	9.8%	0.0970	**-0.2**	
		DDAC-C10 chloride	0.149	25.0%	0.157	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.0723	**0.8**	
		Glyphosate	0.102	12.8%	0.105	**0.1**	
		Matrine	0.0873	16.9%	0.0597	**-1.3**	
		Nicotine	0.0868	24.8%	0.0991	**0.6**	
		Oxymatrine	0.0681	15.4%	0.0780	**0.6**	
		Phosphonic acid	0.202	20.9%	0.183	**-0.4**	
		Perchlorate	0.0550	11.6%	0.0508	**-0.3**	
		Trinexapac (free acid)	0.118	14.7%	FN	**-4.0**	
		Bromide (anion)	–	–	0.0438	–	
80	A	2,4-D (free acid)	0.0523	18.9%	0.0507	**-0.1**	0.3
		BAC-C14 chloride	0.119	19.0%	0.132	**0.4**	
		Chlorate (anion)	0.102	9.8%	0.102	**0.0**	
		DDAC-C10 chloride	0.149	25.0%	0.150	**0.0**	
		Fluazifop (free acid)	0.0598	16.5%	0.0575	**-0.2**	
		Glyphosate	0.102	12.8%	0.0975	**-0.2**	
		Matrine	0.0873	16.9%	0.0840	**-0.2**	
		Nicotine	0.0868	24.8%	0.102	**0.7**	
		Oxymatrine	0.0681	15.4%	0.0694	**0.1**	
		Phosphonic acid	0.202	20.9%	0.255	**1.0**	
		Perchlorate	0.0550	11.6%	0.0555	**0.0**	
82	A	2,4-D (free acid)	0.0523	18.9%	0.055	**0.2**	0.7
		BAC-C14 chloride	0.119	19.0%	0.127	**0.3**	
		Chlorate (anion)	0.102	9.8%	0.114	**0.5**	
		DDAC-C10 chloride	0.149	25.0%	0.156	**0.2**	
		Fluazifop (free acid)	0.0598	16.5%	0.060	**0.0**	
		Glyphosate	0.102	12.8%	0.117	**0.6**	
		Matrine	0.0873	16.9%	0.093	**0.3**	
		Nicotine	0.0868	24.8%	FN*	**-4.0**	
		Oxymatrine	0.0681	15.4%	0.077	**0.5**	
		Phosphonic acid	0.202	20.9%	0.190	**-0.2**	
		Perchlorate	0.0550	11.6%	0.099	**3.2**	
3rd-34	A	2,4-D (free acid)	0.0523	18.9%	0.0470	**-0.4**	0.6
		BAC-C14 chloride	0.119	19.0%	0.146	**0.9**	
		Chlorate (anion)	0.102	9.8%	0.0888	**-0.5**	
		DDAC-C10 chloride	0.149	25.0%	0.165	**0.4**	
		Fluazifop (free acid)	0.0598	16.5%	0.0580	**-0.1**	
		Glyphosate	0.102	12.8%	0.0849	**-0.7**	
		Matrine	0.0873	16.9%	0.0710	**-0.7**	
		Oxymatrine	0.0681	15.4%	0.0510	**-1.0**	
		Phosphonic acid	0.202	20.9%	0.170	**-0.6**	
		Perchlorate	0.0550	11.6%	0.0535	**-0.1**	
3rd-70	B	2,4-D (free acid)	0.0523	18.9%	0.053	**0.1**	**2.1**
		Fluazifop (free acid)	0.0598	16.5%	0.061	**0.1**	
		Glyphosate	0.102	12.8%	FN	**-4.0**	
		Matrine	0.0873	16.9%	FN	**-4.0**	
		Nicotine	0.0868	24.8%	0.132	**2.1**	
		Oxymatrine	0.0681	15.4%	FN	**-4.0**	
		Phosphonic acid	0.202	20.9%	0.189	**-0.3**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	0.058	–	
3rd-72	A	2,4-D (free acid)	0.0523	18.9%	0.051	**-0.1**	0.4

Lab code	Cat	Analyte	pr. AV [mg/kg]	prel. CV*	Conc. [mg/kg]	prel. z score	prel. AAZ
		BAC-C14 chloride	0.119	19.0%	0.138	**0.6**	
		Chlorate (anion)	0.102	9.8%	0.094	**-0.3**	
		DDAC-C10 chloride	0.149	25.0%	0.137	**-0.3**	
		Fluazifop (free acid)	0.0598	16.5%	0.069	**0.6**	
		Glyphosate	0.102	12.8%	0.094	**-0.3**	
		Matrine	0.0873	16.9%	0.085	**-0.1**	
		Nicotine	0.0868	24.8%	0.079	**-0.4**	
		Oxymatrine	0.0681	15.4%	0.067	**-0.1**	
		Phosphonic acid	0.202	20.9%	0.159	**-0.9**	
		Perchlorate	0.0550	11.6%	0.049	**-0.4**	
		Trinexapac (free acid)	0.118	14.7%	0.150	**1.1**	
		Bromide (anion)	–	–	ND	–	
		Copper	–	–	ND	–	
3rd-76	B	2,4-D (free acid)	0.0523	18.9%	0.0378	**-1.1**	1.1
		Chlorate (anion)	0.102	9.8%	0.107	**0.2**	
		Glyphosate	0.102	12.8%	0.0967	**-0.2**	
		Matrine	0.0873	16.9%	0.153	**3.0**	
		Nicotine	0.0868	24.8%	0.0947	**0.4**	
		Oxymatrine	0.0681	15.4%	0.113	**2.6**	
		Phosphonic acid	0.202	20.9%	0.180	**-0.4**	
		Perchlorate	0.0550	11.6%	0.0643	**0.7**	
3rd-83	B	Glyphosate	0.102	12.8%	0.162	**2.4**	

Table 4: Target Pesticide List for the EUPT-SRM18 2023 (Honey), update on 08.05.2023

Target Pesticides List

for the EUPT–SRM18 (2023), Honey
(updated on 08.05.2023)

Analytes are grouped into Mandatory, Optional and Extra
For alphabetical sorting in the same order as in the Webtool: See "Ordered from A to Z"

a new category "Extra (E) is introduced:
Extra analyte, not for lab evaluation (07.05.2023)

Only mandatory (=compulsory) analytes will be considered in the scope-based classification, optional (=voluntary) and extra analytes not.
Please also refer to the EUPT General Protocol.

M: Mandatory O: Optional E: Extra	Analytes	Notes	Listed in	MRRL [mg/kg]	
M	**2,4-D (free acid)**	No hydrolysis required	WD-Honey and MACP-Reg.	**0.01**	
M	**BAC-C12 chloride**	Benzyldimethyldodecylammonium-chloride	WD-Honey	**0.01**	
M	**BAC-C14 chloride**	Benzyldimethyltetradecylammonium-chloride	WD-Honey	**0.01**	
M	**Chlorate (anion)**		WD-Honey	**0.01**	
M	**Chlormequat chloride**	Expressed as chloride salt!	MACP-Reg.	**0.01**	
M	**DDAC-C10 chloride**	Didecyldimethylammonium-chloride	WD-Honey	**0.01**	
~~M~~	~~**DMF**~~	~~N-(2,4-Dimethyl-phenyl)-formamide (Amitraz-metabolite)~~	~~WD-Honey~~	~~**0.01**~~	removed from the TPL (05.04.2023)
~~M~~	~~**DMPF**~~	~~N-2,4-Dimethylphenyl-N'-methylformamidine (Amitraz-metabolite)~~	~~WD-Honey~~	~~**0.01**~~	removed from the TPL (05.04.2023)
M	**Fluazifop (free acid, sum of isomers)**	No hydrolysis required	WD-Honey and MACP-Reg.	**0.01**	
M	**Fosetyl**		MACP-Reg.	**0.01**	
M	**Glyphosate**		WD-Honey and MACP-Reg.	**0.01**	
M	**Haloxyfop (free acid, sum of isomers)**	No hydrolysis required	MACP-Reg.	**0.01**	
M	**Matrine**		WD-Honey	**0.01**	
M	**Mepiquat chloride**	Expressed as chloride salt!	MACP-Reg.	**0.01**	
M	**Nicotine**		MACP-Reg. (2024 onwards)	**0.01**	
M	**Oxymatrine**		WD-Honey	**0.01**	
M	**Phosphonic acid**		MACP-Reg.	**0.03**	
O	**AMPA**		WD-Annex II (future RD)	**0.01**	
O	**Chloridazon desphenyl**		WD-Honey	**0.02**	**New! (05.04.2023)**
O	**MCPA (free acid)**	No hydrolysis required	WD-Annex III	**0.01**	
O	**N-Acetyl-glyphosate**		WD-Annex II (future RD)	**0.01**	
O	**Perchlorate**		Contaminant	**0.01**	
O	**Quizalofop (free acid, sum of isomers)**	No hydrolysis required	WD-Annex III	**0.01**	
O	**Trinexapac (free acid)**	No hydrolysis required	WD (4.1 and Annex II)	**0.01**	
E	**Bromide (anion)**	Analysis of natural content for information only (no z-score calculations)	MACP-Reg.	**none**	**Changed to category "Extra" (07.05.2023)**
E	**Copper**	Analysis of natural content for information only (no z-score calculations)	MACP-Reg.	**none**	**New on the TPL in the category "Extra"! (08.05.2023)**

MACP-Reg.: Multiannual Control Program Regulation. Note that honey is not among the matrices of the MACP.
Link: REGULATION (EU) 2022/741 of 13 May 2022; https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R0741&qid=1665421580611&from=EN.
WD: Working document on pesticides to be considered for inclusion in the national control programs to ensure compliance with maximum residue levels of pesticides residues in and on food of plant and animal origin; SANCO/12745/2013; 21-22 November 2022 rev. 14(5); https://www.eurl-pesticides.eu/userfiles/file/WD/SANCO_12745_2013_rev_14_5.pdf