

Online Tool for Estimation of Measurement Uncertainty

Screenshots



• My EOPT Results (EOPT data extracted from the EOPT Archive D



@www.eurl-pesticides-test.eu/Account/LogOn



After the login-procedure you will see the "myLab"-Tab in the top-navigation bar.

1.:





EURL DataPool

× +

www.eurl-pesticides-test.eu/Member/MyLab

If you do not see this button, please contact EURL-SRM@cvuas.bwl.de



This table lists all EUPTs in which your lab participated.

(Comment: not all EUPTs were imported into the EUPT-Archive till now. We are currently addressing this matter.)

Home Conta	Compoun	d Data Re	gulatory	nyLab	EURL Netv	vork Administration	Reference Labs Tu		/					
Tool 1	Guide Select EUPT-Compounds Select EUPTs Refresh EUPT Calculations Calculate Uncertainties													
	Included	EUPT Name	e	Yea	ar	Commodity	Participation Category	EUPT Type	EUPT Conducted on Behalf of					
•	\checkmark	C06		20	12	Barley	Α	С	Germany					
•	\checkmark	FV14		20	12	Pear	А	FV	Germany					
	\checkmark	FV13		20	11	Mandarine	А	FV	Germany					
•		C04		20:	10	Rye	Α	С	Germany					
•				20	10	Leek	А	FV	Germany					
•	Click	on this	strian	ole-i	con to	Nuchrooms balate at	on FUPT-FV/13		Germany					
۰.	Cherry								Germany					
•	\checkmark	Ad-hoc-PT-	Nicotine (3)	200	09	Mushrooms, Polyporus	N/A		Germany					
•	\checkmark	FV11		200	09	Cauliflower	А	FV	Germany					
•	\checkmark	FV10		200	08	Carrot	А	FV	Germany					
	.7	51/00		20/	07	Ctrawbarry	^	EV	Comony					

					,	,				John Baca		
Select EL	JPT-Compounds	Select EUPTs	Refresh	EUPT C	alculations Calculate Un	certainties						
Included	EUPT Name				Yea	r	Com	modity	P	articipation Category	EUPT Type	EUPT Conducted on Behalf of
\checkmark	FV13				20	11	Man	darine	A		FV	Germany
Measureme	ent Uncertainty	Results										
	Compound Info					Your El	JPT R	esults		Partial Results o	f MU Calculati	on Procedure
Included	Compound	Assigned Value	Unit	Qn	No. of Reported Results	Detected	FN	Result	Square of Bias'(i) SQRT(No. of Reporte	ed Results)	Qn/SQRT(No. of Reported Results)
\checkmark	Diazinon	0.189	mg/kg	0.24	141	Yes	No	0.22	0.026	9	11.8743	0.0202
v	EPN	0.422	mg/kg	0.26	82	Yes	No	0.39	0.005	8	9.0554	0.0287
v	Imazalil	1.3	mg/kg	0.24	126	Yes	No	1.2	0.005	9	11.225	0.0214
v	Indoxacarb	0.792	mg/kg	0.25	106	Yes	No		0.002	8	10.2956	0.0243
	Chlorpyrifos	0.786	mg/kg	0.24	141	Yes	No	0.8	201	9	11.8743	0.0202
\checkmark	Chiorpynios											

This details-table is similar to table 1 of the Document SANCO/12571/2013 (p. 30).

It shows – among others - some calculated paramteres, e.g. like "Square of Bias'(i)" and "Square root of the number of results". We added the following columns : "Unit", "Detected", "FN" (false negative).

Use these b 1.) select th	uttor <mark>e cor</mark>	ns to npour	nds (or E	UPTs	and 2	.) ca	lculat	e the	ехра	anded N	IU.
	Home	Compour	nd Dat	Reg	julatory	myLab	EURL	Network	Adminis	tration	Reference L	abs Tutorials
	Contact Data 🔻 EUPT:			 My Method Validation Data Estimation of Measurement 					urement	rement Uncertainty 🔻		
	Tool f	or Calc	ulat	n of	f Meas	ureme	nt Un	certain	ity ba	d or	i my EUPT	-results and
	Guide	Select EU	PT-Cor	Compounds Select EUPTs			Refresh EUPT Calculations			Calculate	Uncertainties	
		Included	EUPT	Name							Year	Commodity
	4	1	FV13	3							2011	Mandarine

Home	Home Compou		Regulatory	myLab EURL		Network	Administration	Reference La
Contact Data		EUPTs 🔻	My Method	Validation	Data 🔻	Estimatio	on of Measurement	Uncertainty 🔻

Tool for Calculation of Measurement Uncertainty based on my EUPT-



(a) At pages 10-12 you find details on how to select one or more EUPTs for the MU estimation.

(b) At pages 13-15 you find details on how to select one or several pesticides for the MU estimation.

Option (a): Estimation of the expanded MU for one or several EUPTs

If you would like to estimate the **expanded MU over a number of compounds** based on results of just **one EUPT** (e.g. EUPT-FV13) proceed as follows:

00 Tor Calculation of Measurement oncertainty based on my LOFT-results and valuation Data

Guide	Select El	JPT-Compounds Sele	ect EUPTs		n	1
	Included	EUPT Name				1
4	V	FV13				
	Measureme	ent Uncertainty Results				2
				Com	ıр	~
	Included	Compound	Present in Sample	Assi ned Value	ι	
	\checkmark	Carbendazim (sum)	Yes	1.25	n	
		Chlorpyrifos	Yes	0.786	n	
	V	Deltamethrin	Yes	0.133	n	
	V	Diazinon	Yes	0.189	n	3
						<u> </u>

Click on the button "Select EUPTs"

Select "**FV13**" in the new window. (you can also select more than one EUPT to be considered in the MU calculation process)

. Finally confirm with "OK"

Select hose	EUPTs that should be considered in the estima	ation of MU X
n Incl ded	EUPT 🔻	Year
	FV14	20 2
	FV13	20 1
	FV12	20 0
	FV11	20 9
	FV10	20 8
	FV09	2007
	FV08	2006
	FV07	2015
		Ok Cancel

Option (a): Estimation of the expanded MU for one or several EUPTs

Only the sel	Only the selected EUPT is shown in this table.												
Home Compound Data Regulatory myLab EURL Network Administratio rials Contact Data ▼ EUPTs ▼ My Method Validation Data ▼ Estimation of Measurement Feasurement													
Guide Select EUPT-Compounds Select EUPTs Refresh EUPT Calculations Calculate	Guide Select EUPT-Compounds Select EUPTs Refresh EUPT Calculations Calculate Uncerta												
Included EUPT Name	Year	Commodity	Participation Category	EUPT Type	EUPT Conducted on Behalf of								
FV13 FV13 2011 Mandarine A FV Germany													

If you want to exclude some pesticides from the MU estimation procedure, open the details table and **de-select** the appropriate compounds.

Guide	Select EL	JPT-Compounds Sele	ect EUPTs	UPT Calculations	Calculat	e Uncertaint	ties							
	Included	EUPT Name				Year	Commodity		Participation Category		egory EUPT	Type EUP	F Conducted on Behalf o	of
	\checkmark	FV13				2011	Mandarine		А			Gerr	Germany	
ſ	Measureme	ent Uncertainty Results												
		Compoun						Your	EUPT Re	esults	Partial Results of MU Calcula		Iculation Procedure	
	Included	Compound	Present in Sample	Assigned Value	Unit	Qn N	No. of Reported Results	Detected	FN	Result	Square of Bias') SQRT(No. of Re	Qn/SQRT(No. of	
		Carbendazim (sum)	Yes	1.25	mg/kg	0.3	111	Yes	No	1.2	0.001	6 10.53	57 0.0285	;
		enlorpyrifos	Yes	0.786	mg/kg	0.24	147	Yes	No	0.82	0.001	9 12.12	44 0.0198	; =
		Deltamethrin	Yes	0.133	mg/kg	0.25	133	Yes	No	0.14	0.002	8 11.53	26 0.0217	,
		Diazinon	Yes	0.189	mg/kg	0.24	147	Yes	No	0.22	0.026	9 12.12	44 0.0198	}
	v	EPN	Yes	0.422	mg/kg	0.26	84	Yes	No	0.39	0.005	8 9.16	52 0.0284	ŧ
	V	Imazalil	Yes	1.3	mg/kg	0.24	132	Yes	No	1.2	0.005	9 11.48	91 0.0209)
		T I I	24	0 700	л	0.05		N/		0.75	0.005	40.53	10	, T

Option (a): Estimation of the expanded MU for one or several EUPTs



Option (b): Estimation of expanded MU for one or several pesticides

If you would like to estimate the **expanded MU for ONE specific pesticide** taking into account the results of **many EUPTs** proceed as follows:



Option (b): Estimation of expanded MU for one or several pesticides

RL.	Network Administration Reference Select those compounds that should	Labs Tutori d be consider	als ed in the estimation of MU	x x
1	Select All De-Select All			
	Included Compound	T	Comp	
est	Boscalid 1.: Click here to include "Boscalid" into the calculation process		MRM	C06; I *
			• •	•
			Ok	Cancel
		2.: Confirm	n by clicking "Ok".	

Option (b): Estimation of expanded MU for one or several pesticides





Tool for Calculation of Measurement Uncertainty based on my EUPT-results and Validation Data

Gui	de Select EUI	PT-Compounds S	Select EUPTs	Refresh EUPT Calculations	Calculate Uncertainties				
	Included	EUPT Name				Commodity	Participation Category	EUPT Type	EUPT Conducted on Behalf of
4	\checkmark	FV13				Mandarine	А	FV	Germany
				Click or Please All calcu the mat SANCO	consider: ulations by thematica /12571/20	y the Ml formul 013.	tainties " to pr JC-Tool are ba as in Documer	roceed. sed on nt N°	

In this part of the MU Estimation procedure, the tool will consider the withinlaboratory reproducility u'(RSD_{wR}).



If your lab **did submit method validation data to EURL DataPool**, you can use this data to calculate the u'(RSD_{wR}).

	asurement uncertainties calculation										
Meas	urement und	cert	ainties calculation	1				×			
For you	For the calculation of the within-laboratory reproducibility U'(RSDwR), the tool used recovery data submitted by your laboratory to the Method Validation Data database.										
The	The within-laboratory reproducibility for the selected compounds based on your method validation data was calculated to:										
U'(F	U'(RSDwR): 0.054 Please consider that you										
Sele	ect All De-Sel	ect /	All								
Ţ	Compound	T	ValidationContext	T	Spiking Level [m	# of Recoveri	Individual RSD				
e)	2,4-D		Basic validation		0.002	5	0.1181	•			
e)	2,4-D		Basic validation		0.005	4	0.0352				
e) 2,4-D Interlab. test					0.01	5	0.0664				
e)	2,4-D		Interlab. test		0.025	10	0.				

To calculate the u'(RSD_{wR}), the method validation data is grouped by compound, extraction method, amenability to method type (MRM, SRM, MRM/SRM), commodity group, validation context and spiking level.

Data sets with less than three recoveries are excluded. The individual RSDs are calculated for each of these data-groups. Finally, the median RSD-value is taken as the u'(RSD_{wR}). In this case 0.054 (see above).

The calculation procedure of u'(RSD_{wR}) is NOT fixed yet and is a first proposal. The final decision has to be taken by the AQC Group.

If you want to calculate the u'(RSDwR) e.g. for all compounds amenable to multi-residue methods (MRM) and validated with *"water containing"* commodities, please proceed as as shown at the next pages:

Measurem	ent uncertaintie	es calculation			×							
For the calculation of the within-laboratory reproducibility U'(RSDwR), the tool used recovery data submitted by your laboratory to the Method Validation Data database. The within-laboratory reproducibility for the selected compounds based on your method validation data was calculated to: U'(RSDwR): 0.054												
Select All	De-Select All											
Included	Compound T	Commodity Group	Commodity Group	ValidationContext T	Aı							
	2,4-D	MRM/SRM	Water containing	Basic validation	Q =							
	2,4-D	MRM/SRM	Water containing	Basic validation	Q							
	2,4-D	MRM/SRM	Water containing	Interlab. test	Q							
	2,4-D	MRM/SRM	Water containing	Interlab. test	Q							
	2,4-D	MRM/SRM	Water containing	Basic validation	Q							
•					•							
	2 3 🕨			1 - 100 of 8025 items	Ċ							
	Ok Cancel											



he within- louisted	laboratory reprodu	The u'(RSDw your filter-cr	R) was re-calcu iteria.	lated based or	1
Select All	De-Select All	N			
ncluded	Compound T	Commodity Group	Commodity Group	ValidationContext 🔻	Ar
√	Aclonifen	MRM	Water containing	Basic validation	Q
✓	Aclonifen	MRM	Water containing	Basic validation	Q
v	Acrinathrin	MRM	Water containing	Basic validation	Q
\checkmark	Acrinathrin	MRM	Water containing	Basic validation	Q
✓	Acrinathrin	MRM	Water containing	Interlab. test	Q
	III				4
1.4.5	D 2 3 🕨			1 - 100 of 1720 items	0

Click on the "Ok"-button.

(=> the tool will calculate the expanded MU and show the final result as well as some interim results summarized in one table (-> see next page)).

Final Result of MU estimation

Final table summarizing all important interim results and the expanded MU (at the bottom of the table).

ol for Calculation of Measurement Uncertainty based

Equation	Comment	Parameter		Result	
	Number of EUPT results used in the calculation procedure	m	19		
	Sum of squares of the bias	$\sum (bias_i)^2$ where $bias = rac{ ext{lab result}_i - ext{assigned value}_i}{ ext{assigned value}_i}$	0.3885		
	Sum of quotients between Qn and square roots of number of submitted lab results	$\sum rac{\mathrm{Qn}_i}{\sqrt{\mathrm{No. of \ lab \ results_i}}}$		0.4569000	
	Uncertainty component arising from method and laboratory bias (estimated from your EUPT data)	$\mathbf{u}'(ext{bias}) = \sqrt{\left(ext{RMS'}_{ ext{bias}} ight)^2 + u'(c_{ ext{ref}})^2}$			
	Root mean square of the sum of squared bias(i) divided by number of EUPT results used in the calculation procedure	$ ext{RMS'}_{ ext{bias}(i)} = \sqrt{rac{\sum (bias_i)^2}{m}}$	0.14299		
		$u'(c_{ m ref}) = rac{\sum rac{{ m Qn}_i}{\sqrt{ m No. \ of \ lab \ results_i}}}{m} \cdot 1.253$	0.0301	Expanded MU	
	By applying the results of RMS'bias (equation 4) and $u'(c_{ref})$ (equation 5) to equation 3, $u'(bias)$ is calculated to:	u'(bias) =	0.146	The filtered data was: EUPT-FV13 to calculate the lab's u'(bias) and method validation data	
	Estimation of the within-laboratory reproductibility	$u'(RSD_{wR})$: In case your lab submitted method validation data to EURL DataPool, $u'(RSD_{wR})$ is calculated by the system as follows: the data is grouped by compound, analytical method and the spiking level and the RSD is calculated for each group. Finally, the median of all RSDs is used as $u'(RSD_{wR})$. In case the laboratory submitted NO method validation data, the value for $u'(RSD_{wR})$ has to be entered by the user.	0.049	(MRM-pesticides; water-containing commodities) to calculate lab's	
	Combined standard uncertainty	$u' = \sqrt{u'(RSD_{\mathrm{wR}})^2 + u'(bias)^2}$	0.1541	u'(RSDwR).	
	Expanded coverage factor	k = 2		7/	
	Expanded measurement uncertainty	$U' = k \cdot u'$	30.8		

If you want to download your EUPT-data, please follow these steps:

E	EURL-	DataPool	1.: Click on "myLab"						
Hom	e Compound Data Re	gulatory myLab	Network Aummistration Reference Labs 1	Futorials					
Con	ntact Data 🔻 EUPTs 💌 M	1y Method Validation Data 🔻	Estimation of Measurement Uncertainty 🔻						
My EUPT Recuite Drag a column header and drop it here to group by Vear ELIPT Name									
•	2012	C06	Barley	A					
•	2012	FV14	Pear	А					
•	2011	FV13	Mandarine	А					
•	2010	FV12	Leek	А					
•	2010	C04	Rye	А					
	2009	Ad-hoc-PT-Nicotine (1)	Mushrooms, holete v (Boletaceae, Boletales)	N/A					

If you want to download your EUPT-data, please follow these steps:

