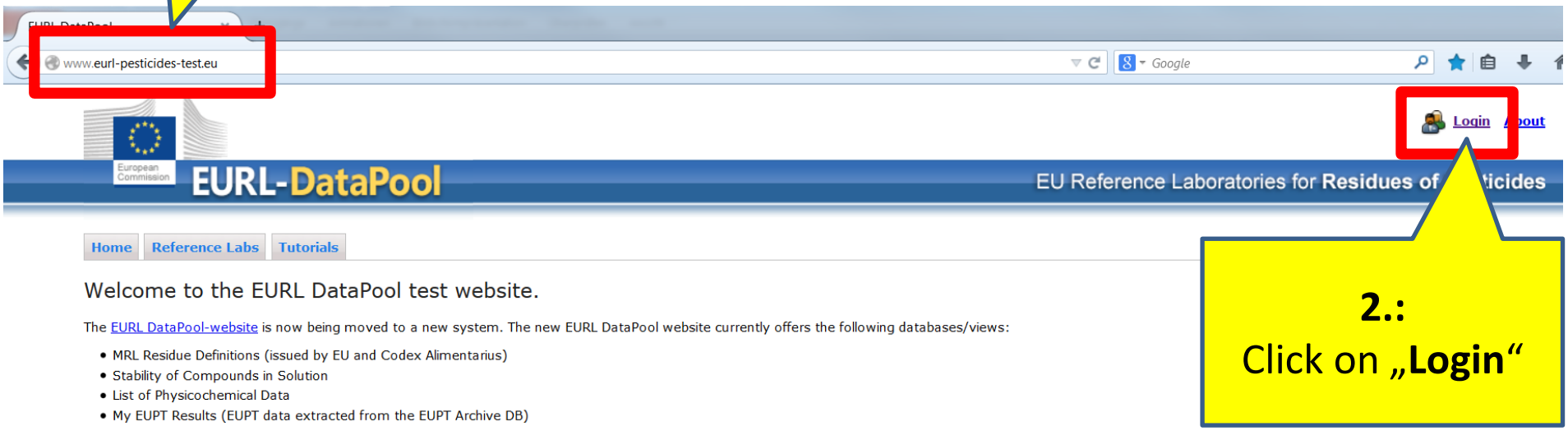
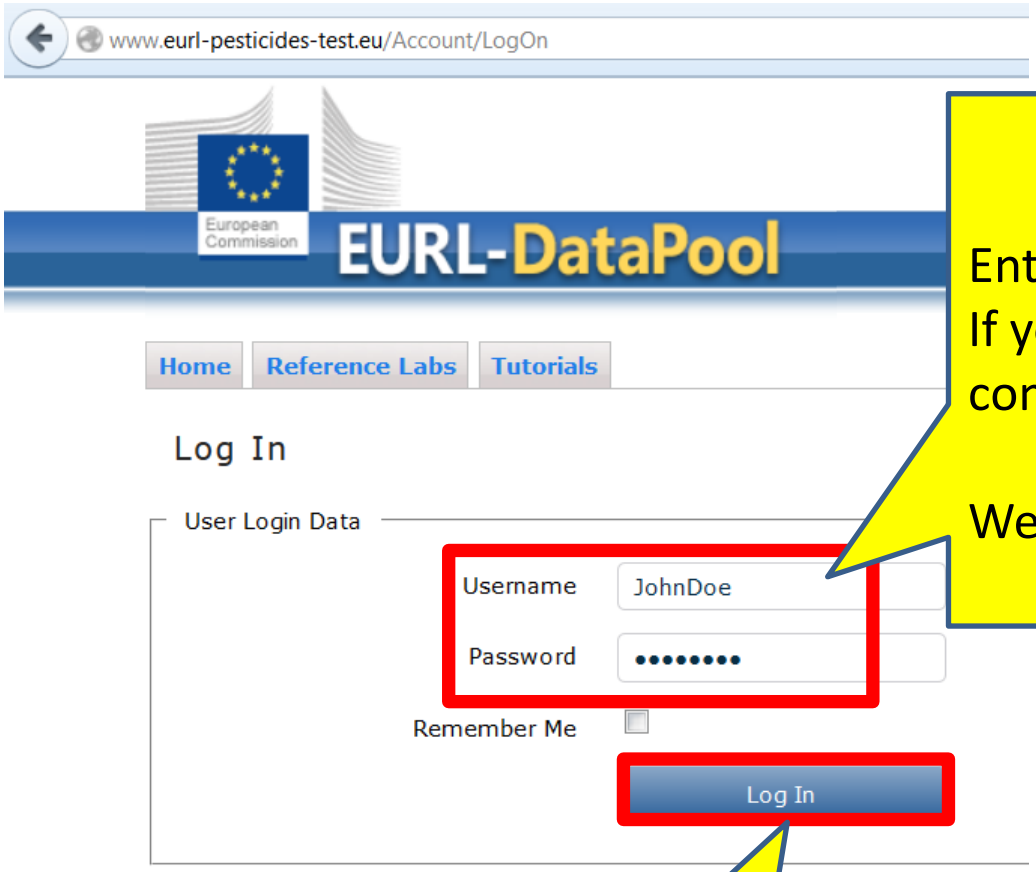
Online Tool for Estimation of Measurement Uncertainty

Screenshots

1.:
Go to „**www.eurl-pesticides-test.eu**“



2.:
Click on „**Login**“



1.:

Enter here your **username** + **password**.
If you miss your login-data, please contact **EURL-SRM@cvuas.bwl.de** .

We will send you a new password.

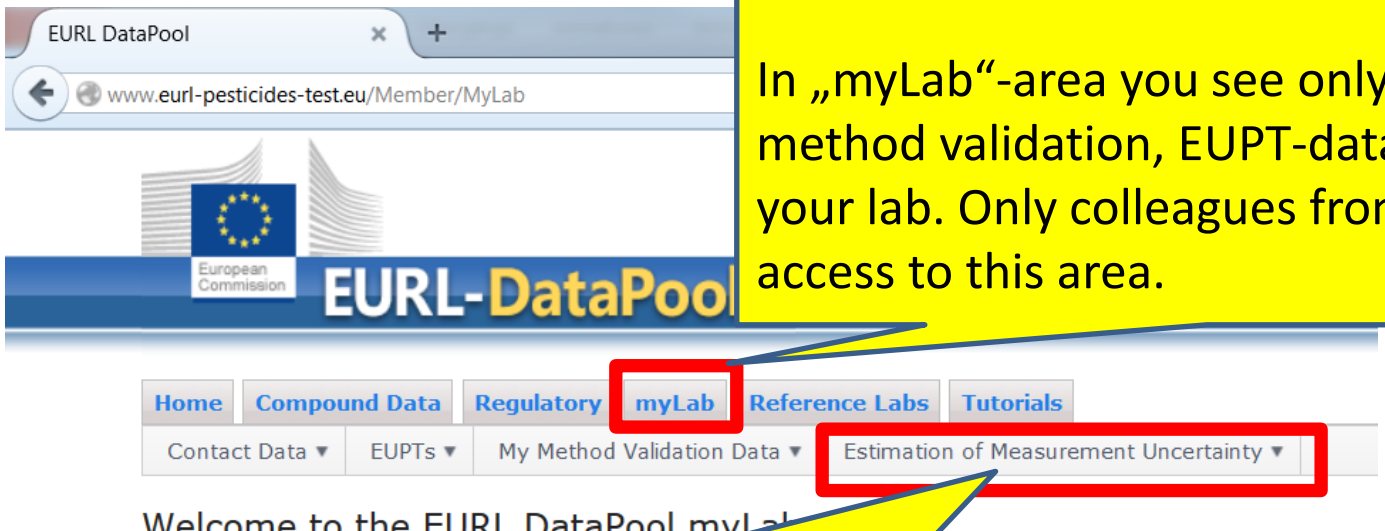
2.:

Click on „Login“

1.:

After the login-procedure you will see the „**myLab**“-Tab in the top-navigation bar.

In „myLab“-area you see only data (contact data, method validation, EUPT-data) that is assigned to your lab. Only colleagues from your lab have access to this area.

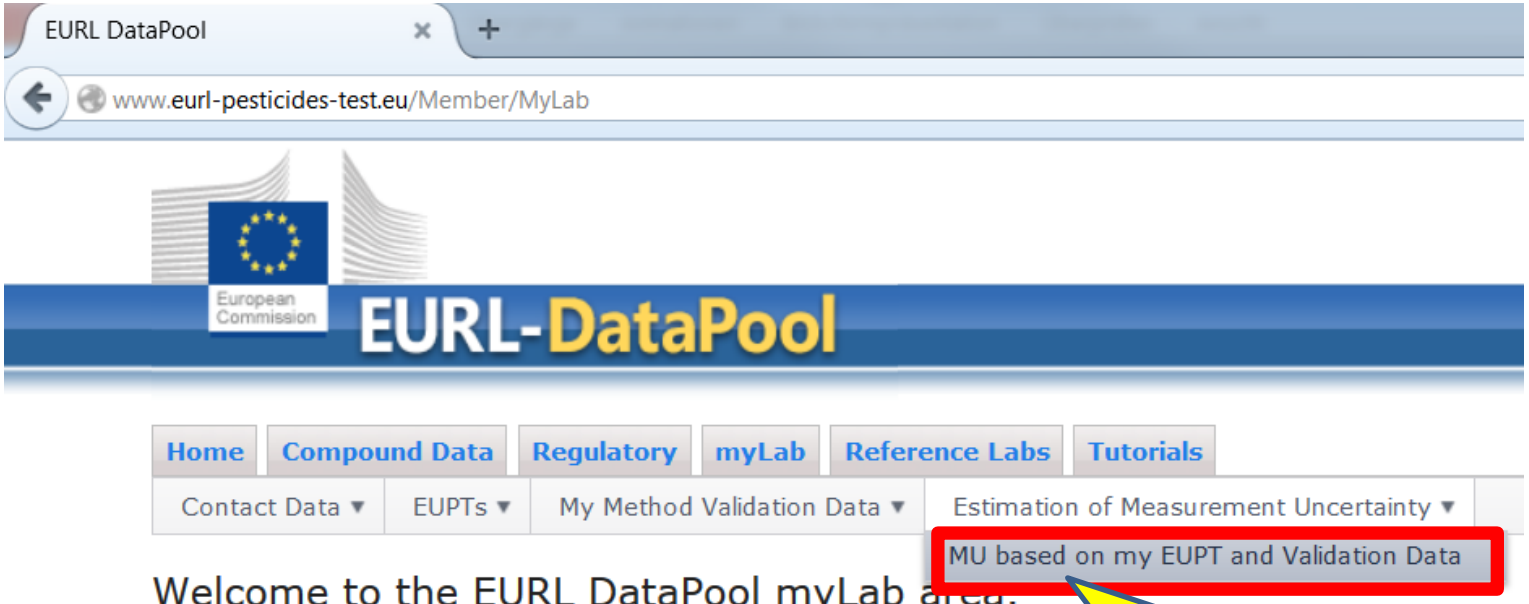


2.:

After clicking on the „**myLab**“-Tab you will see the „**Estimation of Measurement Uncertainty**“-button in the sub-navigation bar.

At this stage, this button is only accessible to members of the EURLs, NRLs and of the AQC Group.

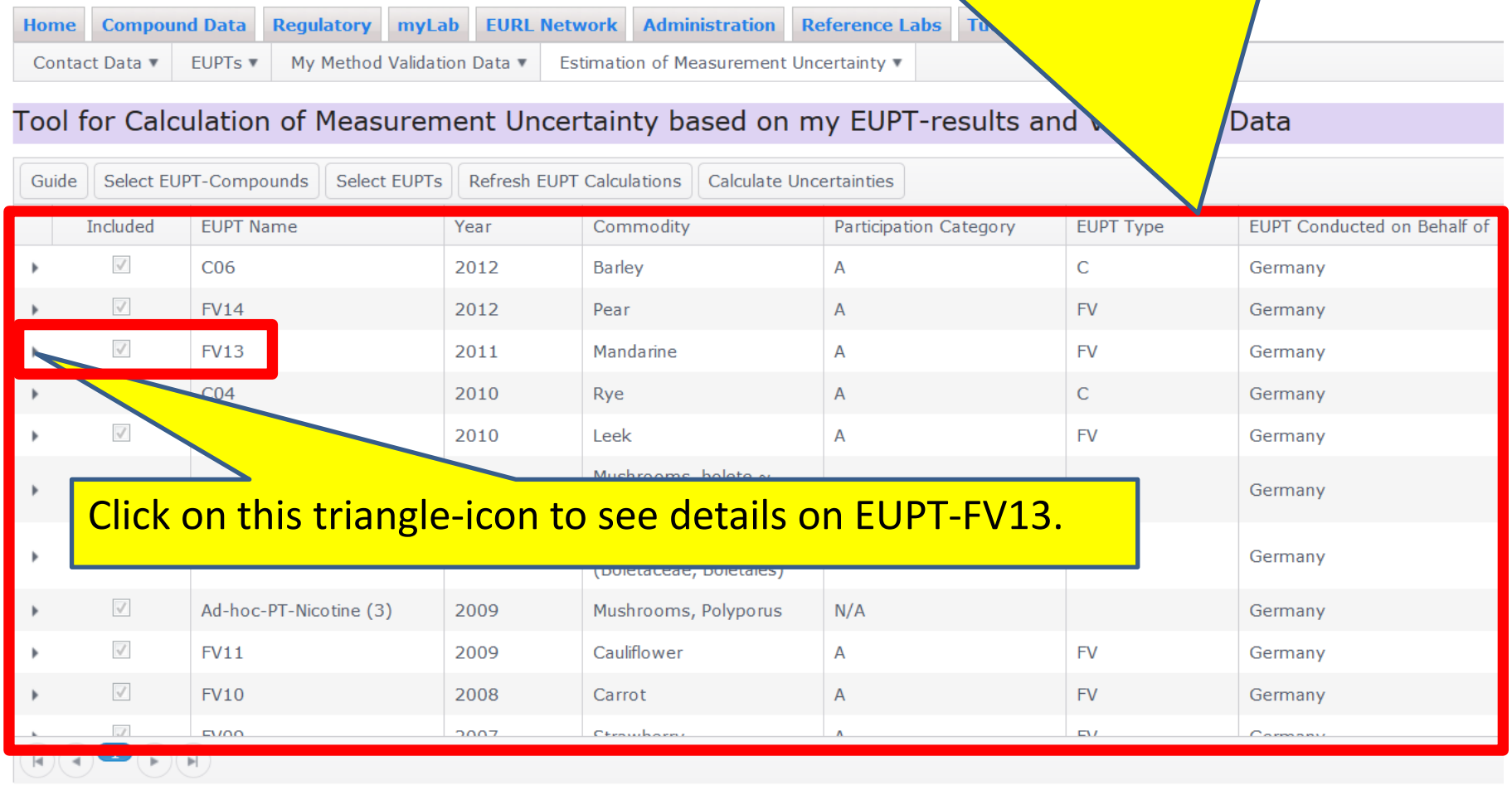
If you do not see this button, please contact **EURL-SRM@cvuas.bwl.de** .



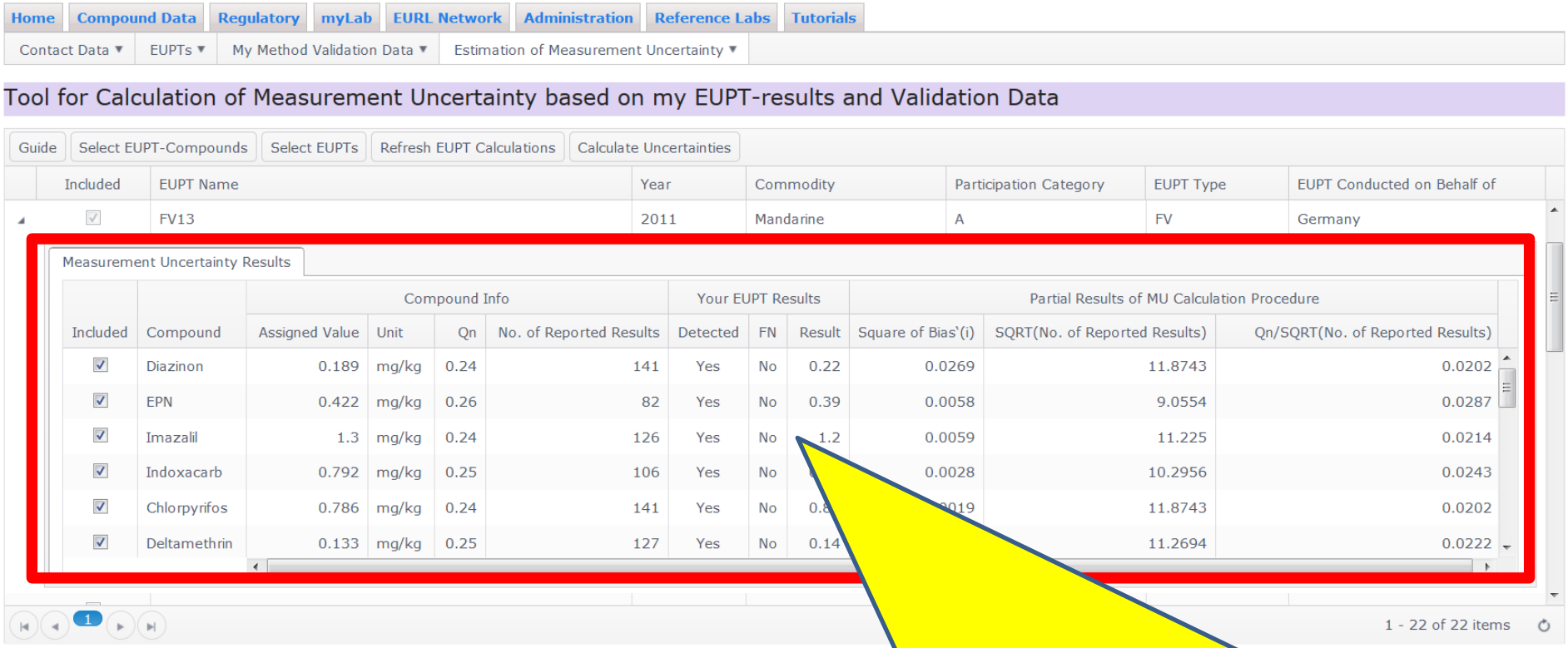
Move the mouse to the „Estimation of Measurement Uncertainty“-button and click on „**MU based on my EUPT and Validation Data**“-button.

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.)



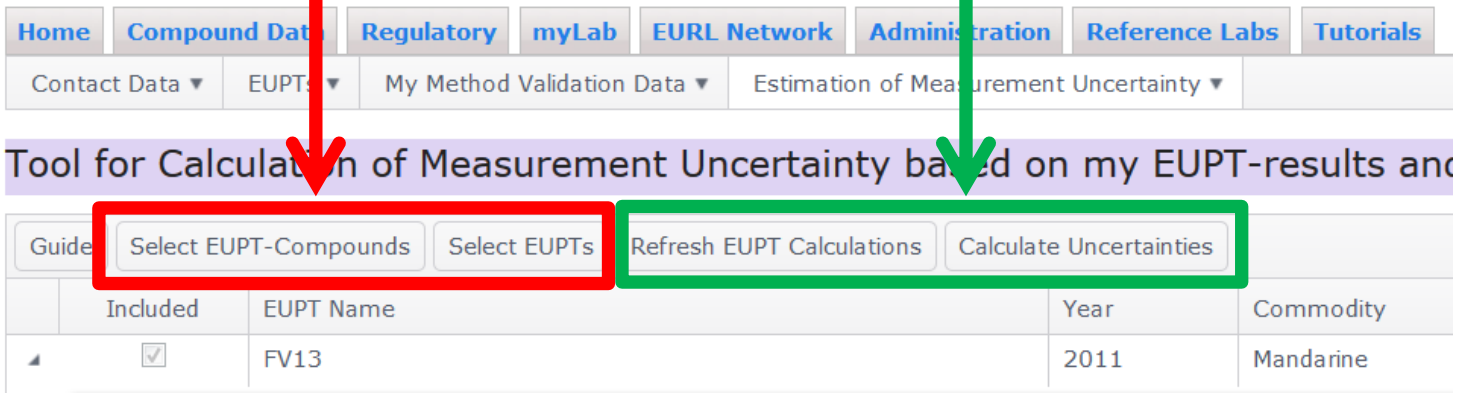
Click on this triangle-icon to see details on EUPT-FV13.

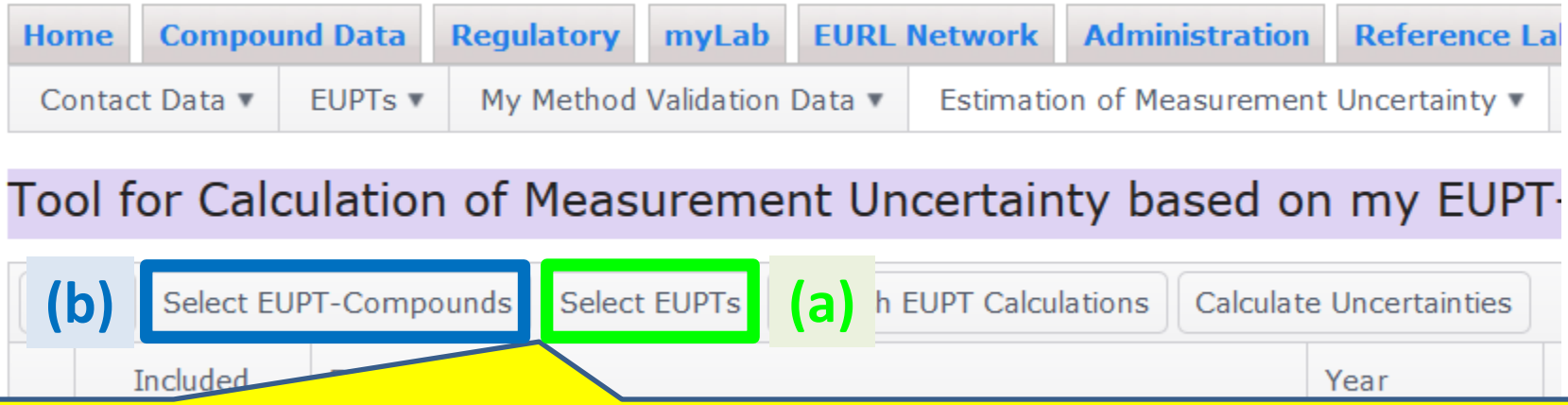


This details-table is similar to table 1 of the Document SANCO/12571/2013 (p. 30).

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 buttons to
1.) **select the compounds or EUPTs** and 2.) **calculate the expanded MU**.



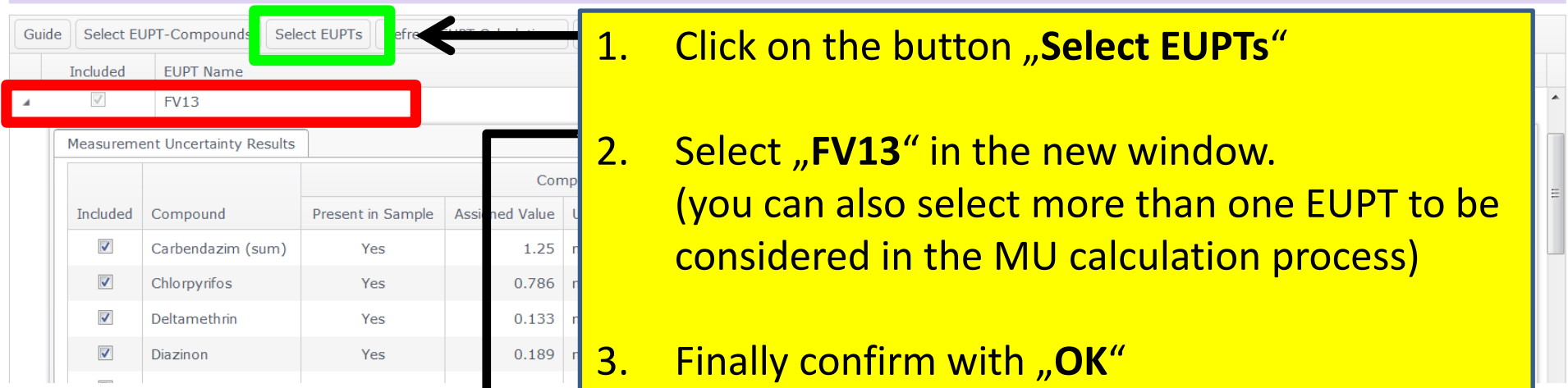


(a) At **pages 10-12** you find details on how to select **one or more EUPTs** for the MU estimation.

(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

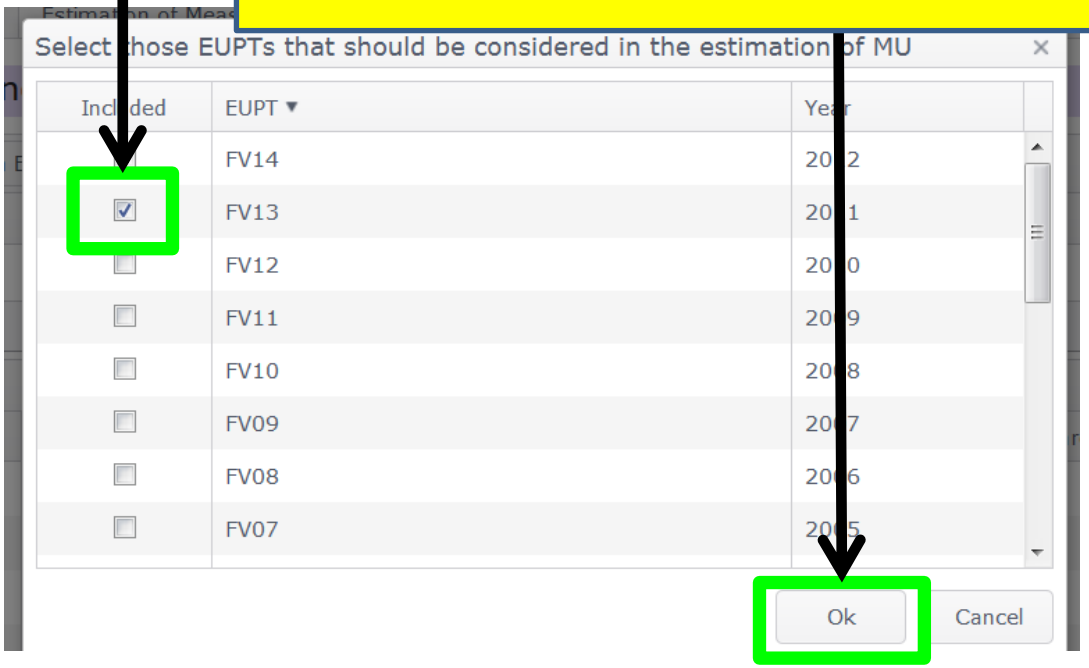
If you would like to estimate the **expanded MU over a number of compounds** based on results of just **one EUPT** (e.g. EUPT-FV13) proceed as follows:



1. Click on the button „**Select EUPTs**“

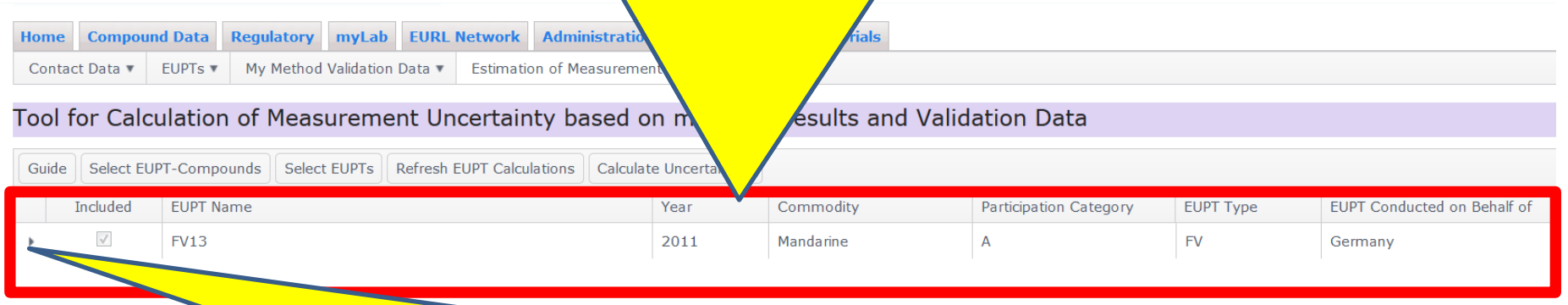
2. Select „**FV13**“ in the new window.
   (you can also select more than one EUPT to be considered in the MU calculation process)

3. Finally confirm with „**OK**“

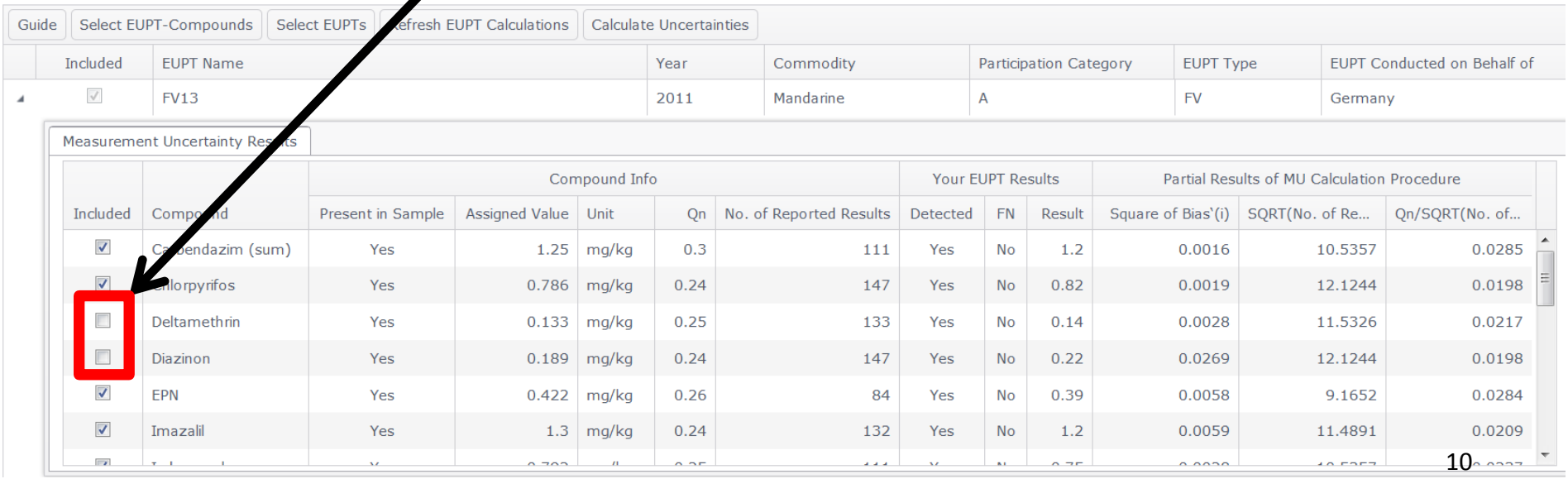


Option (a): Estimation of the expanded MU for one or several EUPTs

Only the selected EUPT is shown in this table.



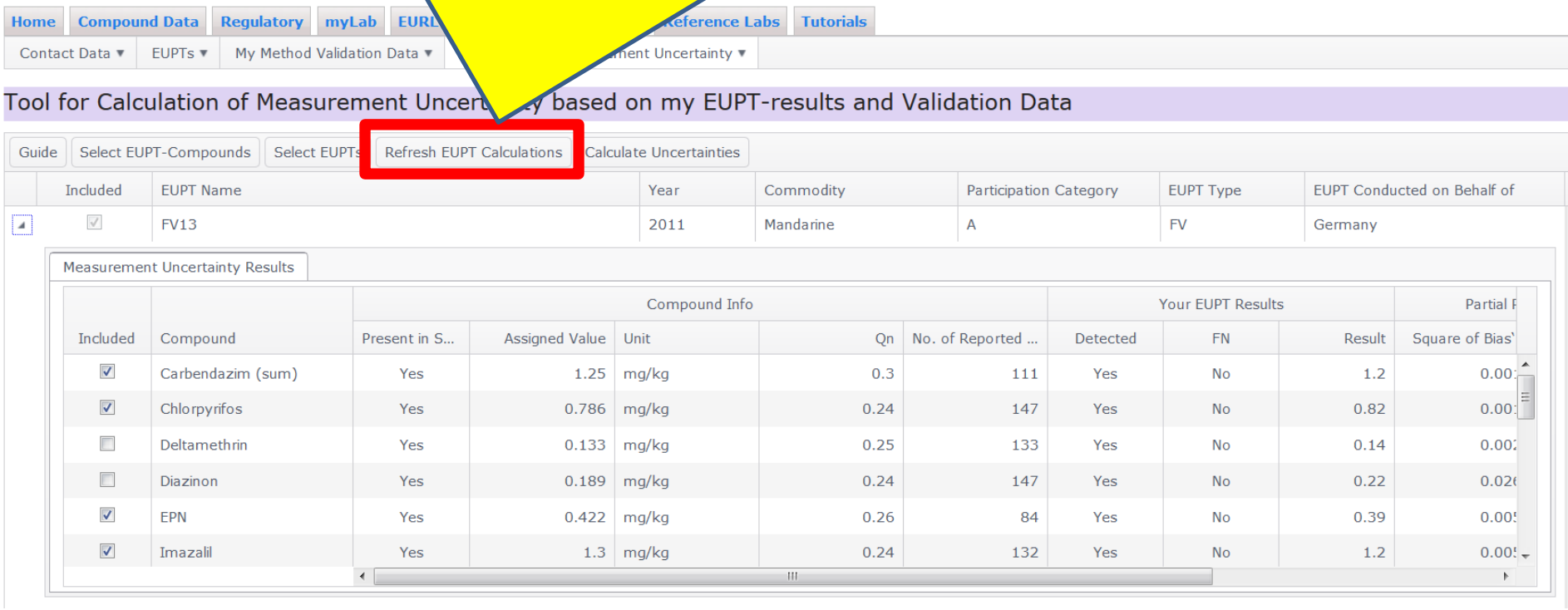
If you want to exclude some pesticides from the MU estimation procedure, open the details table and **de-select** the appropriate compounds.



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

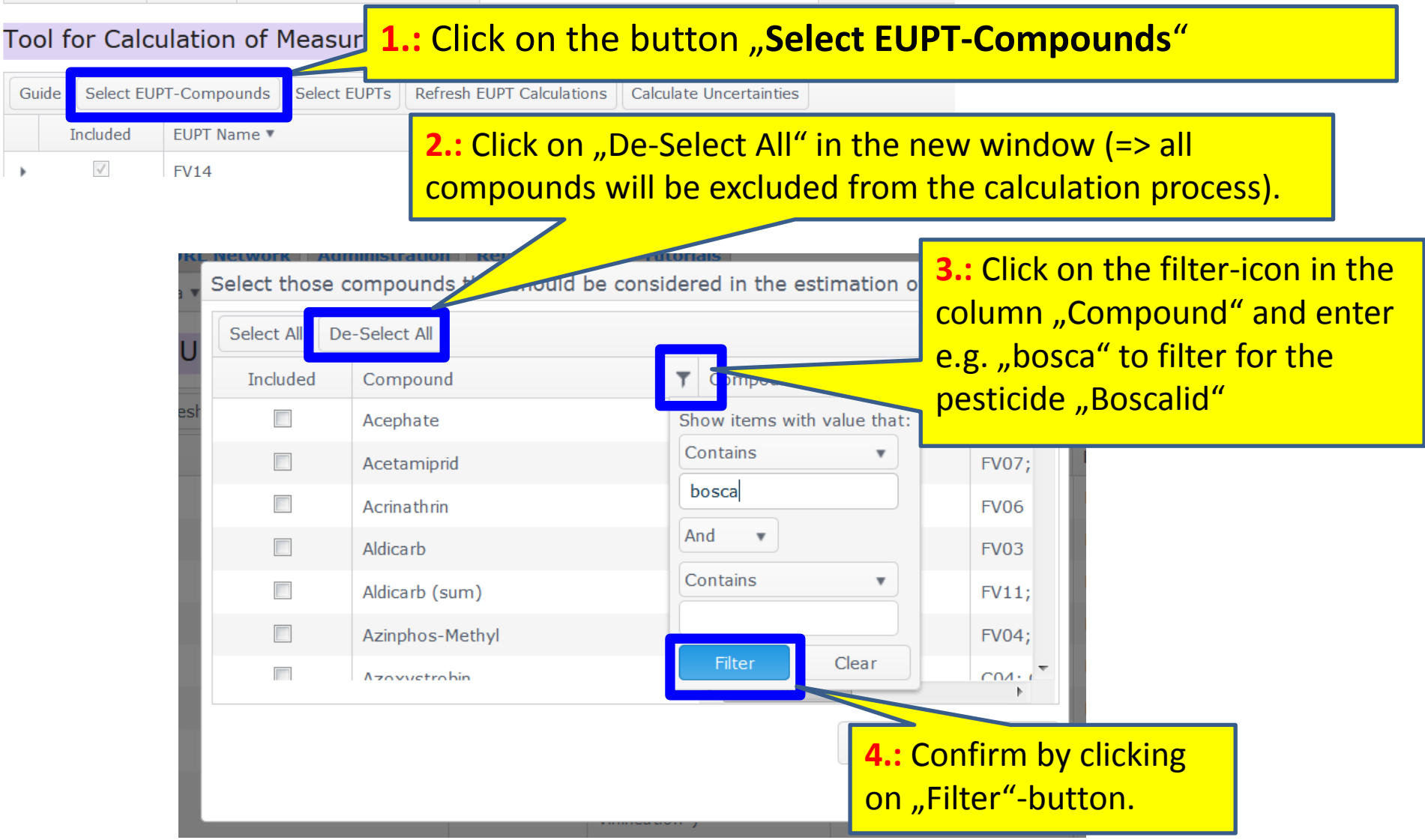
Click the refresh-button.
The tool will then consider all changes you made (e.g. de-selection of compounds) in the subsequent calculations.

Continue as shown in Page 16 of this document.

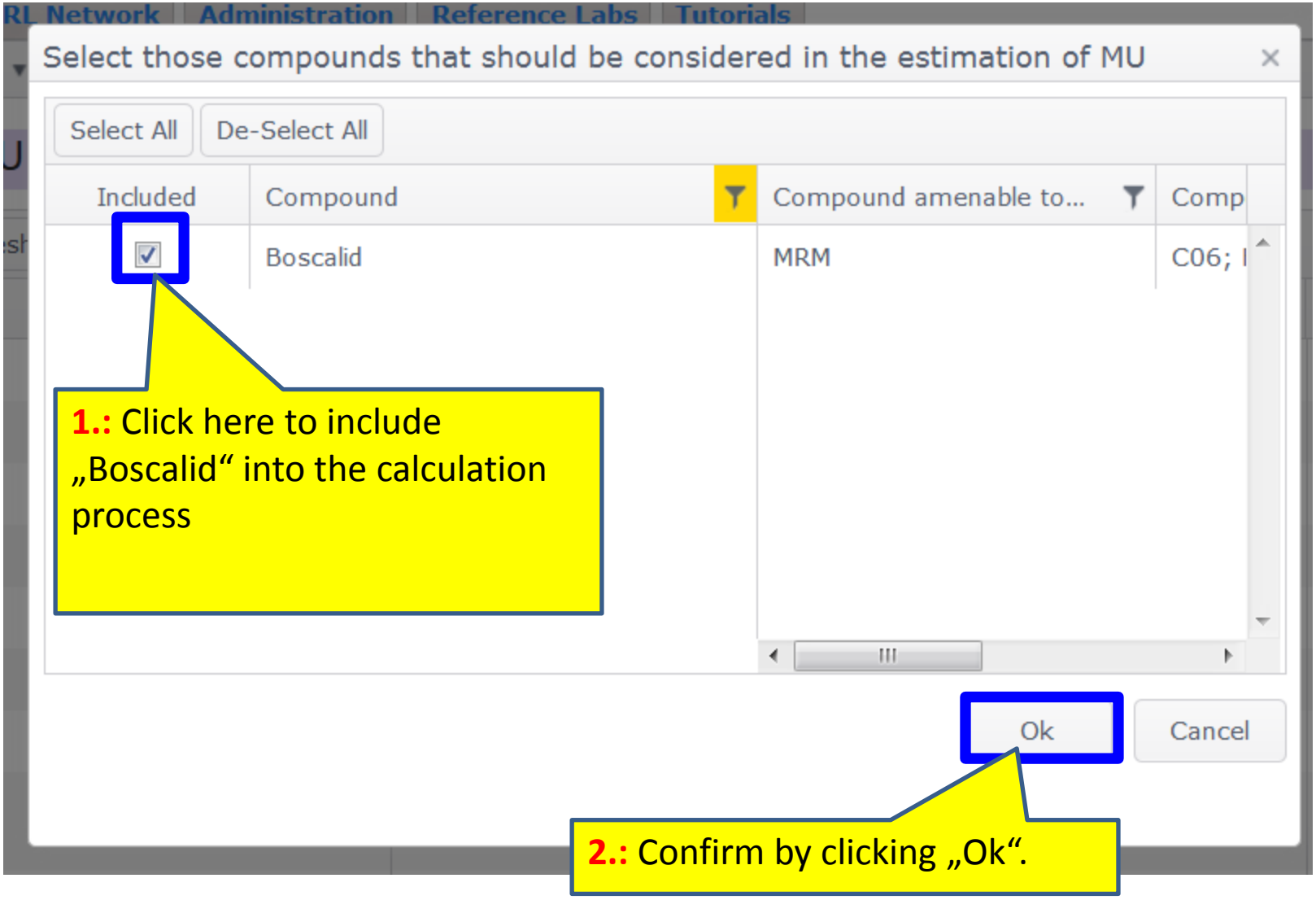


Option (b): Estimation of expanded MU for one or several pesticides

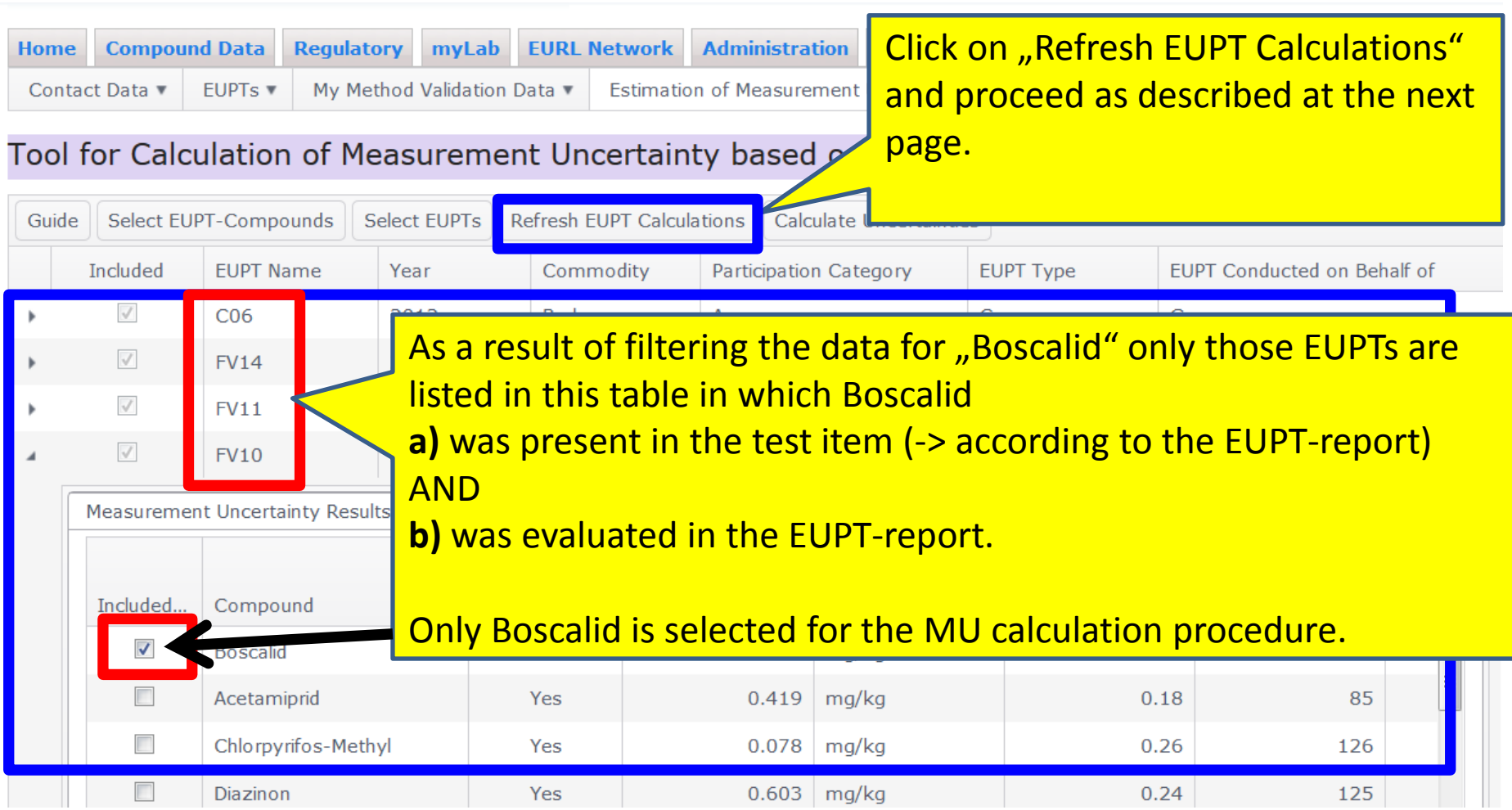
If you would like to estimate the **expanded MU for ONE specific pesticide** taking into account the results of **many EUPTs** proceed as follows:



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



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



Click on „Refresh EUPT Calculations“ and proceed as described at the next page.

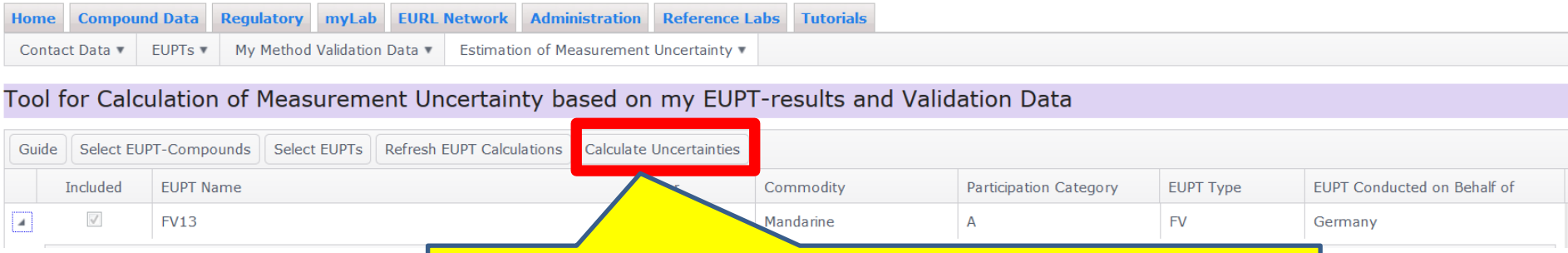
As a result of filtering the data for „Boscalid“ only those EUPTs are listed in this table in which Boscalid

a) was present in the test item (-> according to the EUPT-report) AND

b) was evaluated in the EUPT-report.

Only Boscalid is selected for the MU calculation procedure.

Calculation of u‘(RSDwR)

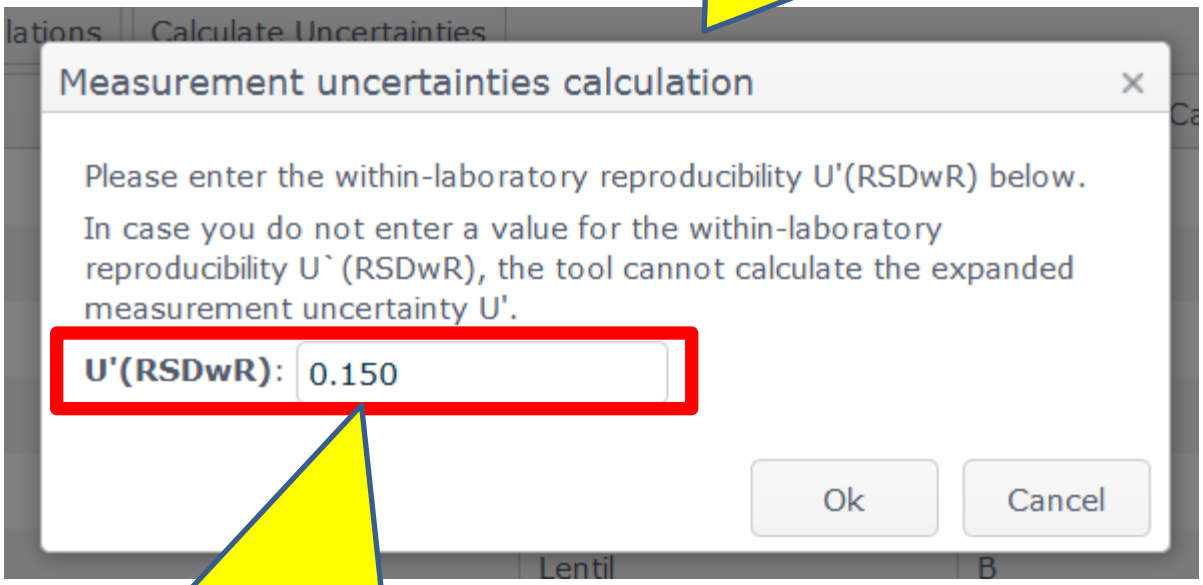


Click on „**Calculate Uncertainties**“ to proceed.

Please consider:
All calculations by the MUC-Tool are based on the mathematical formulas in Document N° SANCO/12571/2013.

Calculation of u‘(RSDwR)

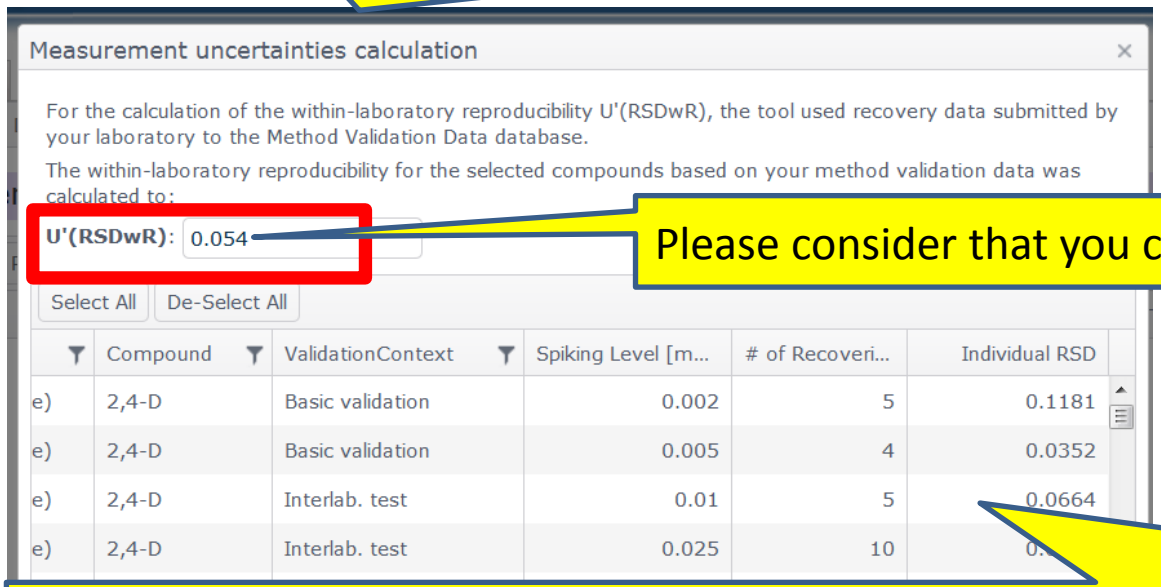
In this part of the MU Estimation procedure, the tool will consider the within-laboratory reproducility u‘(RSD_{wR}).



If your lab **did NOT submit** method validation data to EURL DataPool, you have to enter a value for u‘(RSD_{wR}) here. Then click „Ok“.

Calculation of u‘(RSDwR)

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



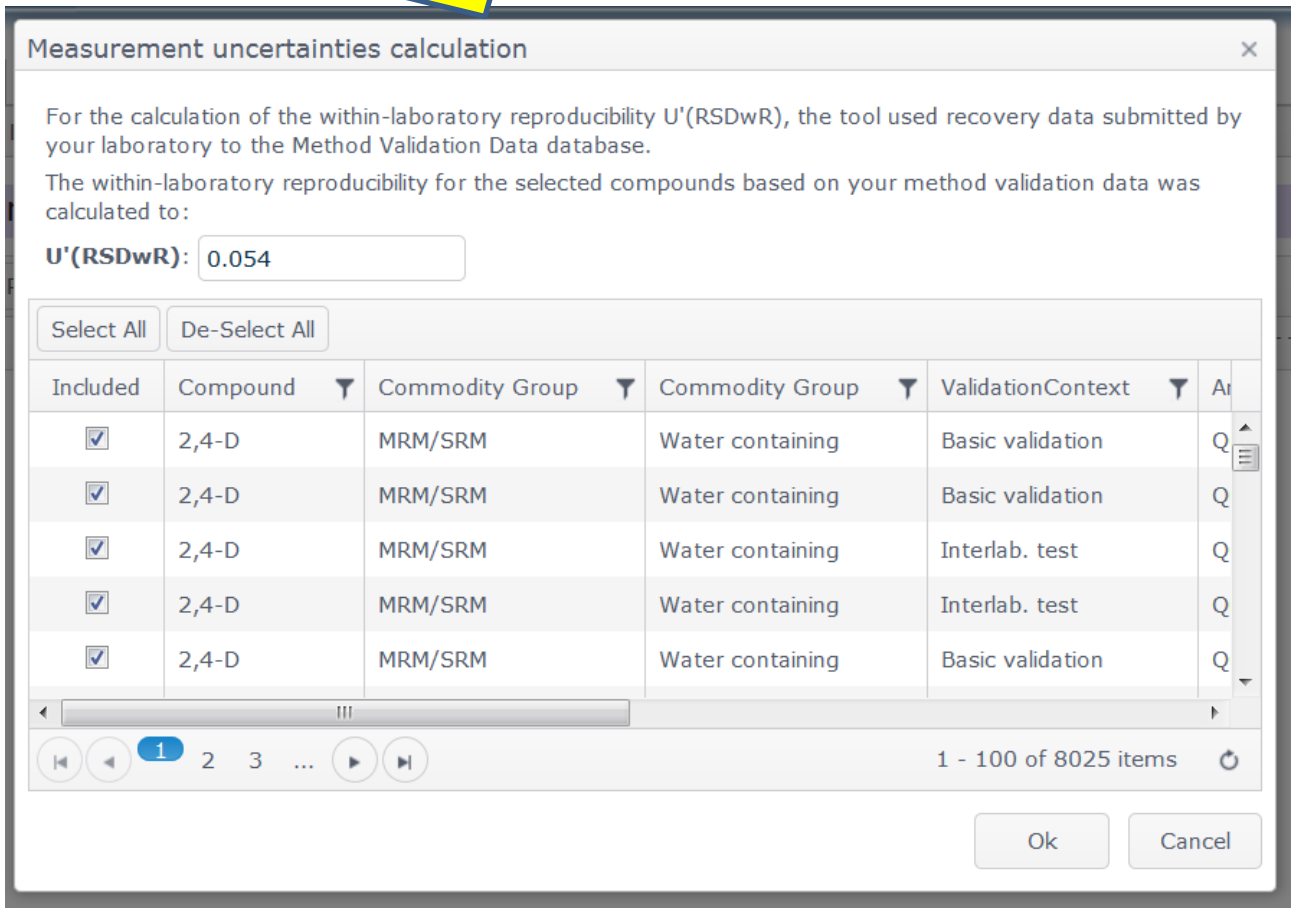
Please consider that you can overwrite this value at any time.

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.

Calculation of u‘(RSDwR)

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:

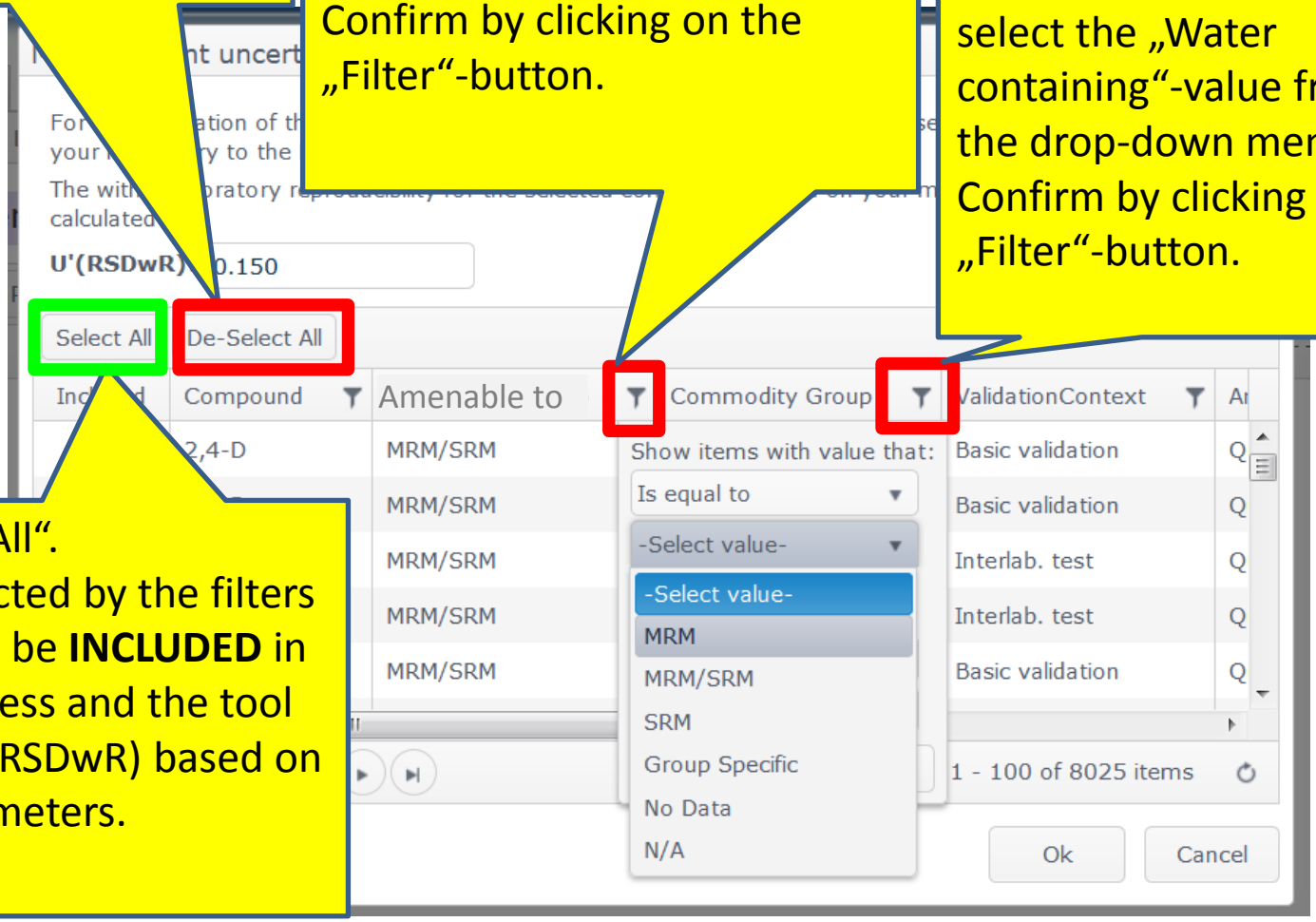


Calculation of u‘(RSDwR)

1.: Click on „De-Select All“ (=> all compounds will be excluded from the calculation process)

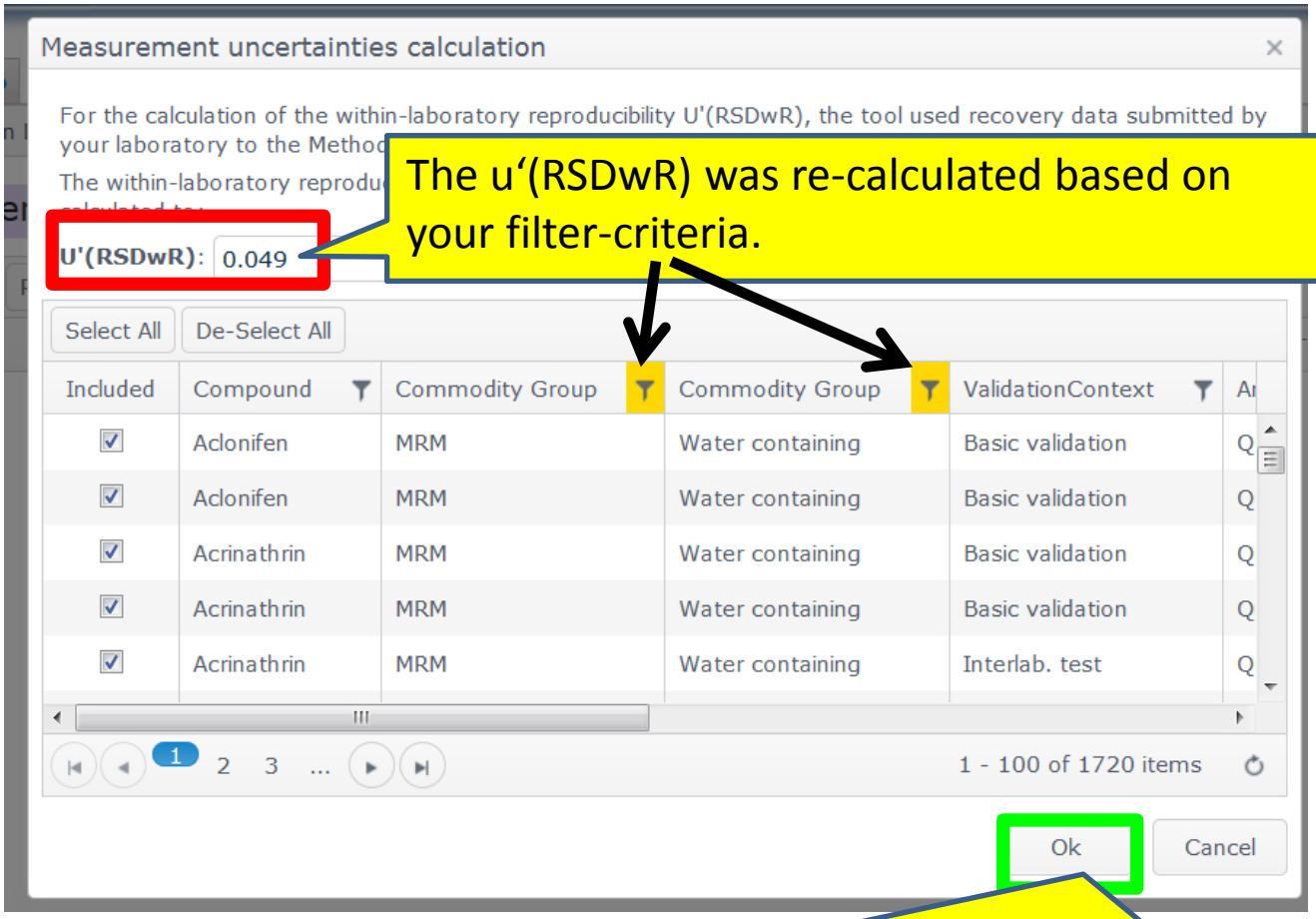
2.: Click on this filter-icon and select the „MRM“-value from the drop-down menu. Confirm by clicking on the „Filter“-button.

3.: Click on the filter-icon in the „Commodity Group“-column and select the „Water containing“-value from the drop-down menu. Confirm by clicking on „Filter“-button.



4.: Click on „Select All“.
All compounds selected by the filters in step 2. and 3. will be **INCLUDED** in the calculation process and the tool re-calculates the u‘(RSDwR) based on your selection parameters.
-> See next page.

Calculation of u‘(RSDwR)



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).

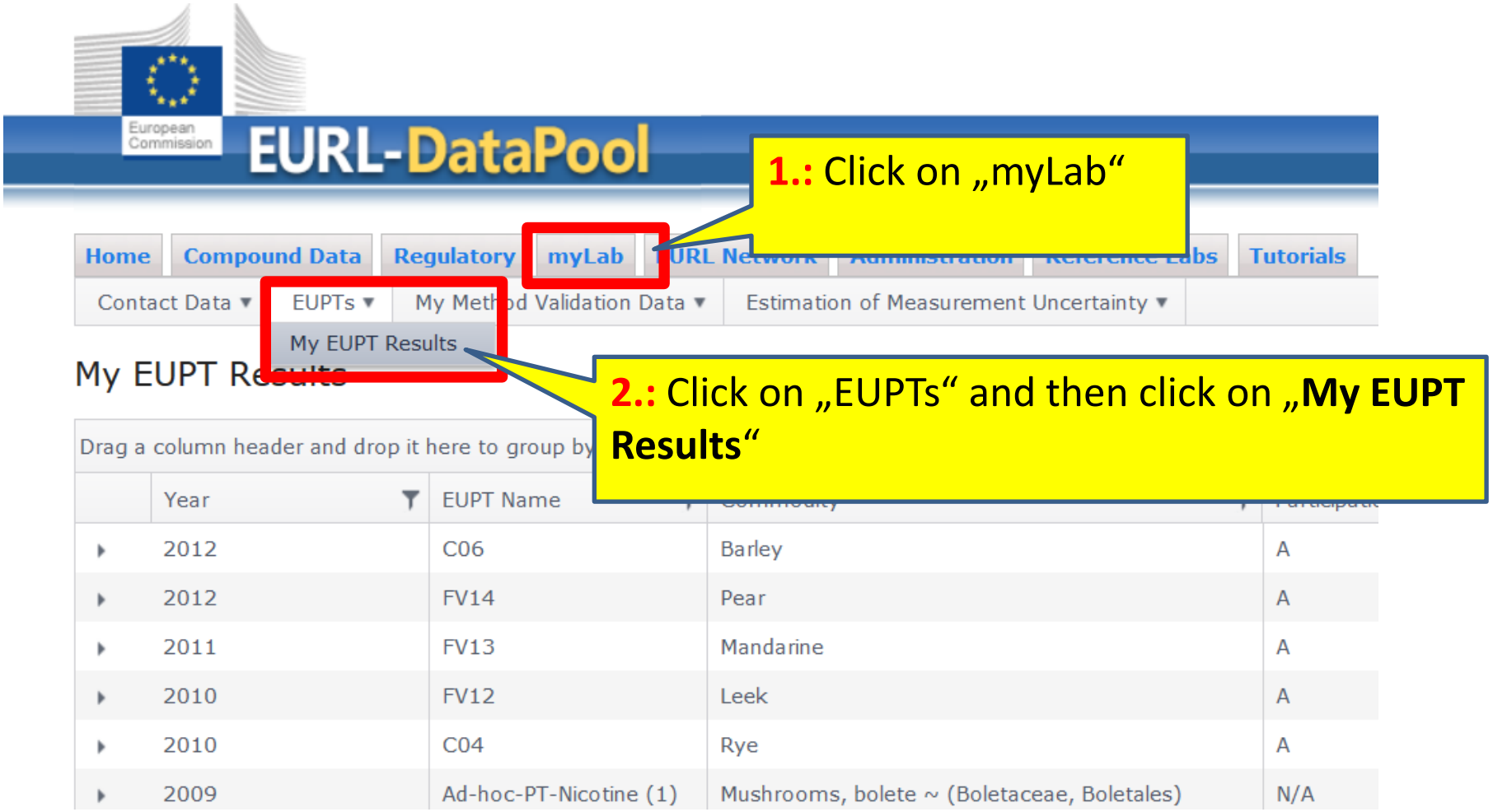
ol for Calculation of Measurement Uncertainty based

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 $bias = \frac{\text{lab result}_i - \text{assigned value}_i}{\text{assigned value}_i}$	0.3885
	Sum of quotients between Qn and square roots of number of submitted lab results	$\sum \frac{\text{Qn}_i}{\sqrt{\text{No. of lab results}_i}}$	0.4569000...
	Uncertainty component arising from method and laboratory bias (estimated from your EUPT data)	$u'(\text{bias}) = \sqrt{(\text{RMS}'_{\text{bias}})^2 + u'(c_{\text{ref}})^2}$	
	Root mean square of the sum of squared bias(i) divided by number of EUPT results used in the calculation procedure	$\text{RMS}'_{\text{bias(i)}} = \sqrt{\frac{\sum (bias_i)^2}{m}}$	0.14299
		$u'(c_{\text{ref}}) = \frac{\sum \frac{\text{Qn}_i}{\sqrt{\text{No. of lab results}_i}}}{m} \cdot 1.253$	0.0301
	By applying the results of RMS'bias (equation 4) and $u'(c_{\text{ref}})$ (equation 5) to equation 3, $u'(bias)$ is calculated to:	$u'(bias) =$	0.146
	Estimation of the within-laboratory reproductibility	$u'(RSD_{\text{wR}})$: In case your lab submitted method validation data to EURL DataPool, $u'(RSD_{\text{wR}})$ 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 $u'(RSD_{\text{wR}})$. In case the laboratory submitted NO method validation data, the value for $u'(RSD_{\text{wR}})$ has to be entered by the user.	0.049
	Combined standard uncertainty	$u' = \sqrt{u'(RSD_{\text{wR}})^2 + u'(bias)^2}$	0.1541
	Expanded coverage factor	$k = 2$	
	Expanded measurement uncertainty	$U' = k \cdot u'$	30.8

Expanded MU

The filtered data was: **EUPT-FV13** to calculate the lab's u'(bias) and method validation data (MRM-pesticides; water-containing commodities) to calculate lab's u'(RSDwR).

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



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