

Observations and Descriptors: CROP Dataviews



Revision Date

October 24, 2016



This document describes several inter-related dataviews that handle descriptor data (“observations”). Since many GRIN-Global users will only need to know how to use existing trait descriptors to record their observations, this document begins by focusing on using the crop descriptors to record observation data. You will also see how traits can be reviewed in the Public Website.

The remainder of the document describes explains the supporting trait and code tables and dataviews. Typically in most organizations, only a few users (or perhaps an administrator) will be defining the trait descriptors and their related codes, whereas many genebank personnel be using the Curator Tool to enter observation data.

[Change notes](#) pertaining to this document are also summarized in the appendix. Review the [Table of Contents](#) which contains links to the document’s sections

Comments/Suggestions:

Please contact feedback@ars-grin.gov with any suggestions or questions related to this document. This and other GRIN-Global –related documentation can be downloaded from the GRIN-Global [Training page](#).

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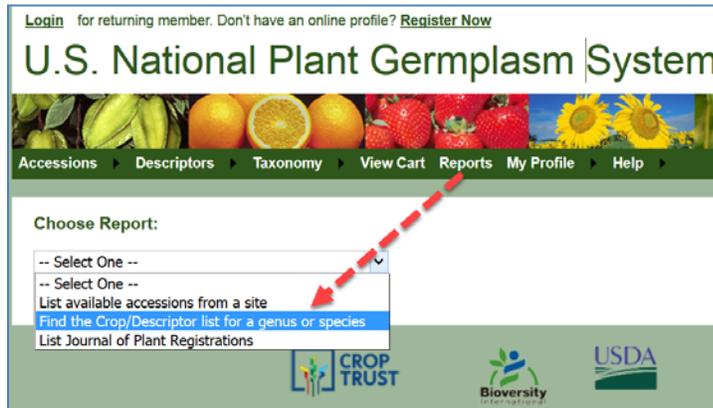
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Overview

The Public Website (PW) can display characteristic/evaluation data for any accessions whose observations have been recorded. The PW user accesses this data via the **Descriptors** menu option. The user then selects a crop and if that crop has observation data in the database, descriptors (traits) will be listed. At that point the user can select from the various descriptors and then further refine their search by specific criteria.

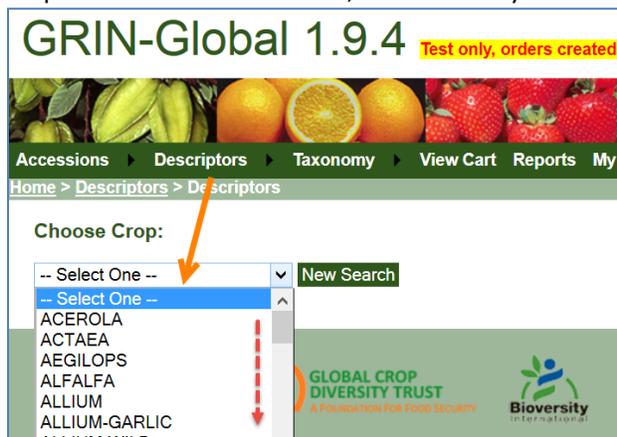
How Can You Determine the Accession's Crop?

Under Reports, there is an option available – **Find the Crop/Descriptor list for a genus or species.**

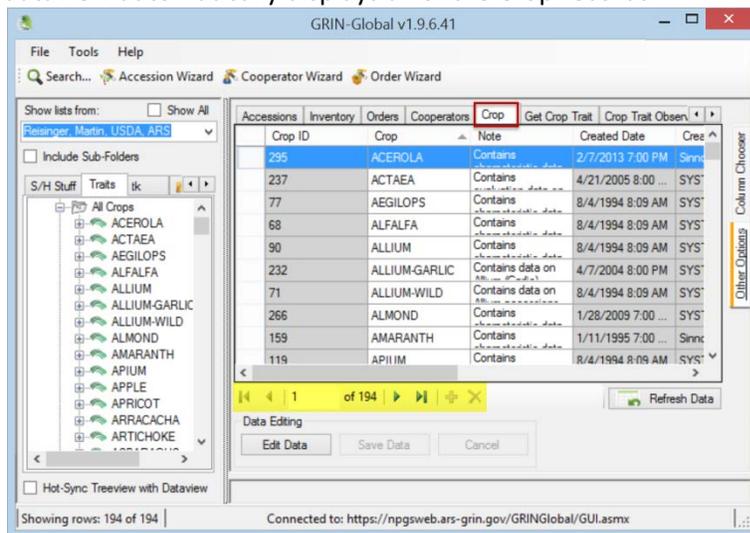


The Crop Group of Dataviews

Before discussing the descriptors, it is important to understand that the descriptors are organized by crops. On the Public Website, to review any observation, a crop must initially be selected:



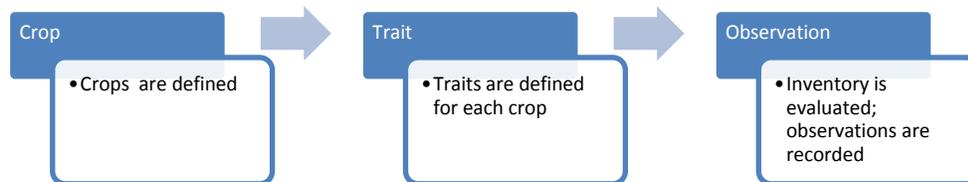
Using either the Curator Tool or the Search Tool, you can get a complete list of the crops. The **Crop** dataview automatically displays all of the Crop records.



When a curator or genebank personnel record the results of their evaluations, they record them via the **Crop Trait** observation dataview. However, before any observations can be recorded, the traits (descriptors) must be defined. This is done using the **Crop Trait** dataview:

Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Crop	Taxonomy Crop Map	Get Crop Trait	...						
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length	Numeric Format	Numeric Maximum	Numeric Minimum	Original Value Type	Original Value Format	Is Archived?	Ontology URL	Note	Cr
1					<input type="checkbox"/>	[Null]	[Null]	<input type="checkbox"/>					[Null]		<input type="checkbox"/>			2/

The details for creating a new Crop Trait record are explained later in this document; refer to the [Crop Trait](#) section for details. Notice that the first required field in the sample new Crop Trait record above is “Crop.” So if an organization is initially setting up GRIN-Global, it will need to establish its Crops; this is done using the [Crop](#) dataview.



So the question becomes, how are the observations related to accessions? Review the **Crop Trait Observation** dataview below. Starting from left to right, the first required field that must be entered is the **Inventory** field. The user proceeds to input the **Crop**, the **Crop Trait**, the value of the observation record, and so on:

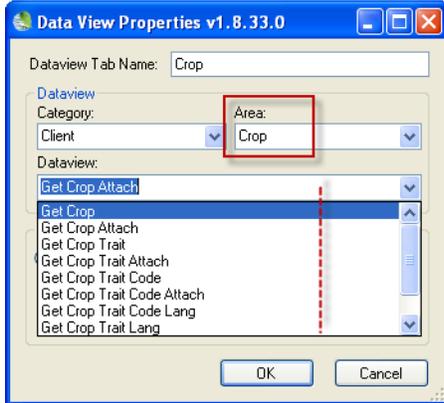
Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Taxonomy Crop Map	...
Crop Trait Observation	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archive
1										<input type="checkbox"/>

→

Notice that the **Accession** field cannot be inputted. After the record is saved, GG will complete the **Accession** field, based on the Inventory-Accession relationship. Observations are explained in detail in the [Get Crop Trait Observation](#) section.

Curator Tool Crop and Trait Dataviews

In the GRIN-Global, there is a “family” of inter-related tables; in the Curator Tool, you can see the related dataviews under the **Crop** area:

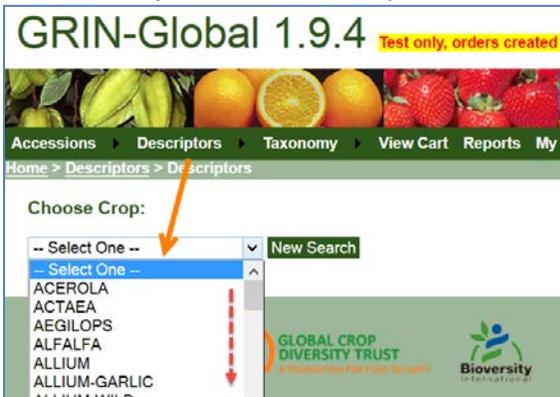


Viewing Crop Observations in the Public Website

There are several ways to view observations in the Public Website. One method is to search by Descriptors – the Public Website has a **Descriptors** menu option:



To review any observation, a crop must be initially selected:



After the Crop is selected, if it has had observations associated with its inventory/accessions, a list of descriptors will display. This is an indication then that observations using these descriptors have been

made and are stored in the database :

Accessions > Descriptors > Taxonomy > View Cart Reports My Account > Tools
Home > Descriptors > Descriptors

Choose Crop: **GRAPE**

GRAPE

Choose descriptor(s):

Chemical composition descriptors (CHEMICAL)

BRIX RESVERBY RESVERLF SOLBLSOL

Molecular descriptors (MOLECULAR)

GENOMESZBP GENOMESZPG

Morphological descriptors (MORPHOLOGY)

BERRYLEN BERRYWID CLUSTLEN FLOWERSEX PEDUNCLN

Using the checkboxes, select the desired descriptors:

GENOMESZBP GENOMESZPG

Morphological descriptors (MORPHOLOGY)

BERRYLEN BERRYWID CLUSTLEN FLOWERSEX PEDUNCLN
 BERRYSHAPE CLUSTERDEN CLUSTWID FRUITFIRM SEEDLESS
 BERRYSIZE CLUSTERS FLESHCOLOR FRUITTASTE SKINCOLOR
 BERRYWGT

Results:

Query Criteria:
 Crop: GRAPE
 Berry Size Equal To ALL VALUES;
 Berry Weight Equal To ALL VALUES;

Results match all trait conditions.

Choose Crop: **GRAPE**

GRAPE

Choose descriptor(s):

Select descriptor values:

Results:

Actions...

Select: All, None, Inverse, Highlighted Options: Show 25 items << 1 - 25 of 981 >>

Group By:	Berry Size	Berry Weight
<input type="checkbox"/> Plant ID		
<input type="checkbox"/> PI 588054	81.9	0.5
<input type="checkbox"/> PI 588055	57.8	0.3
<input type="checkbox"/> PI 588057	73.9	0.45
<input type="checkbox"/> PI 588058	124.3	0.9

Public Website – Alternative Method for Displaying Descriptors

Under Search Options, you can select Web Search Observation. The search results display several columns of observations for accessions that met the search criteria; in this example the search criterion was simply “vitis vinifera.” In this example, GG returned 72 rows of observation data. To display all of the observations , use the **Export** feature to create a CSV file for further review.

Accessions **1** Descriptors Taxonomy View Cart Reports My Account Help Choose language English

Home Page > Accessions > General

Query Criteria:
 Search String: vitis vinifera

Search For: vitis vinifera

Search Options | Advanced Search

Return up to 500 accessions **2**

Match All Terms Allow Multiple Lines

Retrieve: Web Search Observation **3**

Actions...

Select: All, None, Inverse, Highlighted Options: Show 25 items << 1 - 25 of 72 >>

Group By:	Sex of Flower	Berry Shape	Bud Burst Date	Flavor	Flesh Color	Leaf Date	Leaf lobes on mat
<input type="checkbox"/> DVIT 2073	3 - Hermaphrodite (Concord)	8 - cylindric	124.00000; 139.00000; 87.00000; 89.00000; 93.00000; 108.00000	0 - None (no especially distinctive flavor)	1 - Flesh not colored	91.00000	3 - Five
<input type="checkbox"/> DVIT 2076	3 - Hermaphrodite	8 - cylindric	97.00000; 109.00000; 79.00000;	0 - None (no especially	1 - Flesh not colored	85.00000; 88.00000;	3 - Five

Get Crop Trait Observation

Assuming the descriptors (“crop traits”) have already been added for the crops for which you are recording observations, in the Curator Tool you will use the **Observation** dataview to enter your evaluation results. In this first section of the document, besides showing how to record observation records, we also discuss a language switching option so that you can input codes rather than their longer titles.



The observation requires a method to be indicated, so ensure that the relevant methods have been defined first before attempting to add observations. (Use the **Get Method** dataview.)

Get Crop Trait Observation

The **Crop Trait Observation** dataview has many fields; four are required:

- Inventory
- Crop
- Crop Trait
- Method

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived?
-1										<input type="checkbox"/>



Violet colored cells are required; gray fields are read-only.

The three highlighted “Value” fields highlighted – Coded, Numeric, and Test Value, are mutually exclusive – only one of the three fields should be completed. Unfortunately, to date there is no trigger to ensure this – it is possible that you can fill more than one field.

When a trait is a coded field, a lookup picker window displays when that field is selected, as shown here:

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archive
-1		MR 201502 RE1...	GRAPE	Berry Shape						

Also, after saving, the **Accession** and **Trait Code** fields fill in with the respective value:

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived?
10497957	MR 2015 RE...	MR 201502 RE1...	GRAPE	Berry Shape	Roundish	3			GRAPE.HORT.08	N

Attach Observations to the Accession or Inventory?

Observations are typically associated with a specific inventory record; however, because of the flexibility provided by the schema design, an observation can be associated with *either* an inventory record (a specific “lot”) *or* with the accession in general. Sometimes historical observations have been saved, but not associated with inventory. Rather than lose this data, it can be recorded in GRIN-Global and associated with the accession’s system inventory record (type = “**”)

Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Taxonomy Crop Map	...
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	
10497957	MR 2015 RE...	MR 201502 RE18A	GRAPE	Bery Shape	Roundish	3			GRAPE.HC	
-2		PI 100000 **								

Bulk Importing of Observations

At some point you may have many observations to load into GRIN-Global. Inputting them one at a time is time consuming and inefficient, especially if you already have the data stored in a spreadsheet. Instead, it is much more practical to “bulk import” the observation data.



Many users will prefer working with the **Trait Codes** rather than the **Coded Values**, especially when bulk importing. Refer to the [English vs. ENG](#) section for more details.

Sample Observation Data for Apples

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor Co
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code					
4644682	PI 613844	PI 613844 k SG	APPLE	Fire Blight Shoot (Natural)	Very resistant - no occurrence	1					
4979138	PI 613844	PI 613844 k SG	APPLE	Fire Blight Blossom (Natural)	ML/M, intermediate	3					
5404444	PI 613844	PI 613844 **	APPLE	FRUIT BLOOM	ABSENT	1					
5404494	PI 613844	PI 613844 **	APPLE	FRUIT FLESH COLOR	YELLOW + ORANGE STANDARD: MALUS 'GOLDEN HORNET' GMAL-534	4+5					
5404545	PI 613844	PI 613844 **	APPLE	FRUIT FLESH FIRMNESS	SOFT STANDARD: MALUS X KANSUENSIS GMAL-167	1					
5404596	PI 613844	PI 613844 **	APPLE	FRUIT FLESH FLAVOR	ASTRINGENT STANDARD: M. CORONARIA	5					
5404646	PI 613844	PI 613844 **	APPLE	FRUIT FLESH OXIDATION	SLIGHTLY OXIDIZING 1-4%	2					
5404698	PI 613844	PI 613844 **	APPLE	FRUIT GROUND COLOR	RED STANDARD: MALUS 'CRANBERRY' GMAL-1063	8					

In the following scenario, assume that the observations being recorded are for the Apple trait **FRUIT JUICINESS**. **FRUIT JUICINESS** is a coded trait. There are several methods for determining what the possible valid codes are.

In EDIT mode, one simplistic method is to use the **Get Crop Trait Observation** dataview. Begin by adding a new record and then use the **Coded Value** lookup to determine what codes are valid for the descriptor. Unfortunately there isn’t an easy way to copy these codes into a spreadsheet, so you may transcribe them inaccurately if you attempt to type them.

Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descr
Inventory	Crop	Crop Trait	Coded Value			Trait Code		
PI 613844 **	APPLE	FRUIT SIZE UNIFORMITY	UNIFORM STANDARD: EMPIRE					1
PI 613844 **	APPLE	FRUIT STEM LENGTH						
PI 613844 **	APPLE	FRUIT STEM THICKN						1
PI 613844 **	APPLE	FRUIT WEIGHT						1
PI 613844 **	APPLE	FRUIT SHAPE (OVER						5.0
PI 613844 **	APPLE	CALYX PERSISTENC						3
PI 613844 **	APPLE	CALYX BASIN						2
PI 613844 **	APPLE	FRUIT TEXTURE						2
PI 613844 **	APPLE	STEM CAVITY						2
PI 613844 **	APPLE	FRUIT SHAPE (TOP)						GMAL-444 1
PI 613844 **	APPLE	FRUIT RUSSET INTE						
PI 613844 **	APPLE	OVERCOLOR INTENS						
PI 613844 **	APPLE	OVERCOLOR PATTE						1
PI 613844 **	APPLE	HARVEST SEASON						8
PI 613844 **	APPLE	Ploidy Level						2x
PI 613844 **	APPLE	BUDBREAK	Fullswell					3
	APPLE	FRUIT JUICINESS						

Lookup Picker v1.9.6.41

HINT: For big lists, use the text filter to shorten the list search.

Filter ->

DRY 76 - .80

MEDIUM .81 - .85

MOD. JUICY .86 - .90

VERY DRY < .75

VERY JUICY > .90

Show Only Choices

Valid For This:

crop_trait_id

A safer way to get the codes is to use the Search Tool.

GRIN-Global Search v1.9.6.41

Basic Query

Search Now! 2 Limit: 500

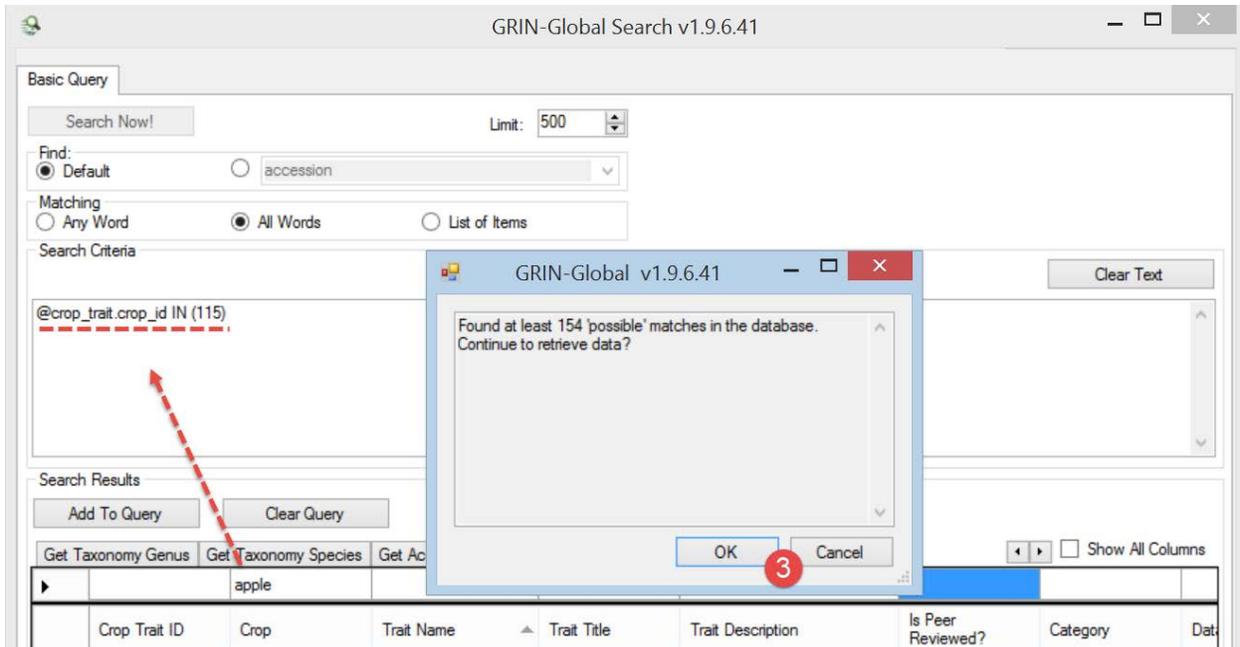
Find: Default accession

Matching: Any Word All Words List of Items

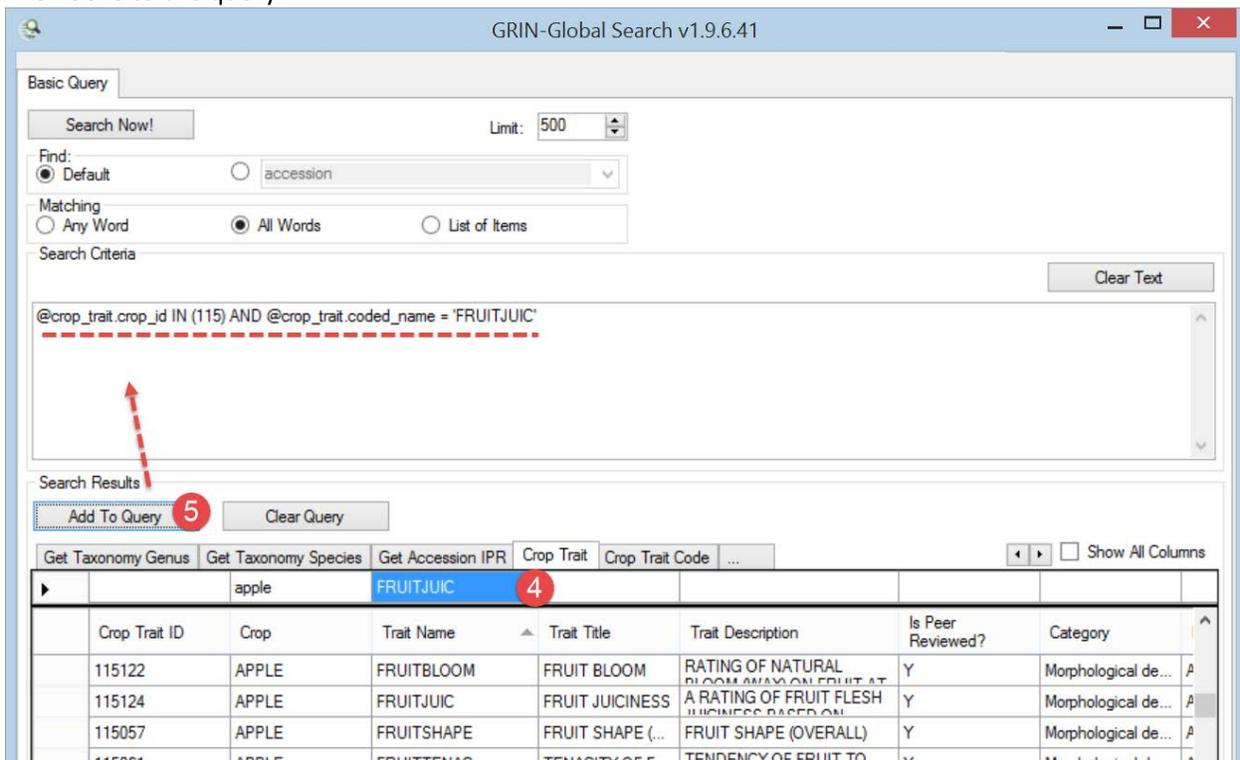
Search Criteria

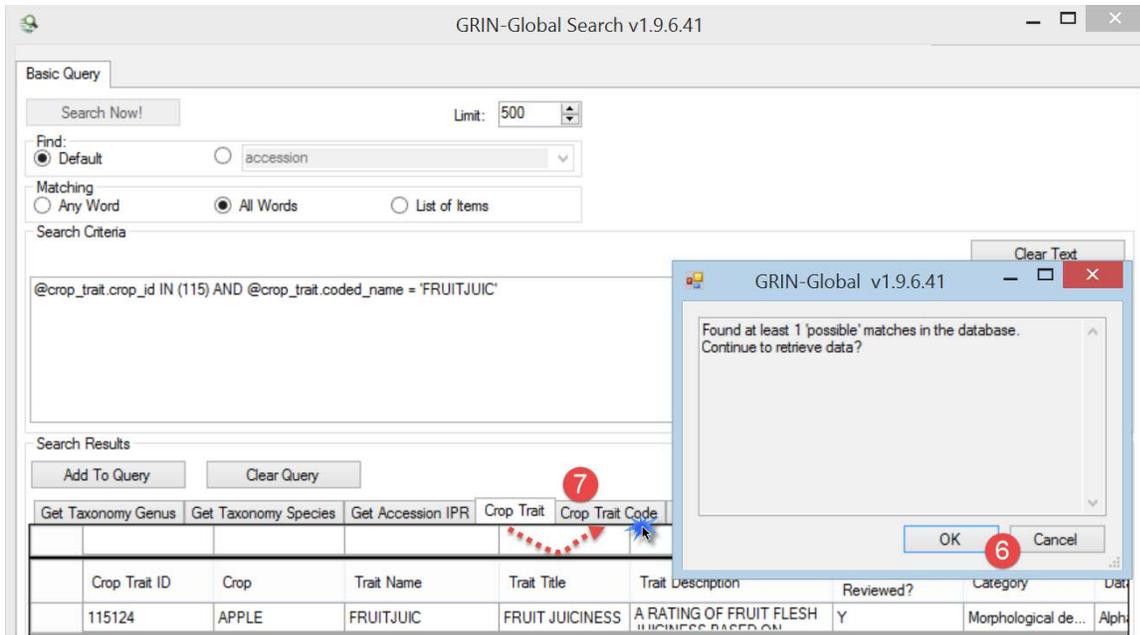
Search Results

Get Taxonomy Genus	Get Taxonomy Species	Get Accession IPR	Crop Trait	Crop Trait Code	...	<input type="checkbox"/> Show All Columns
	apple 1					
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category

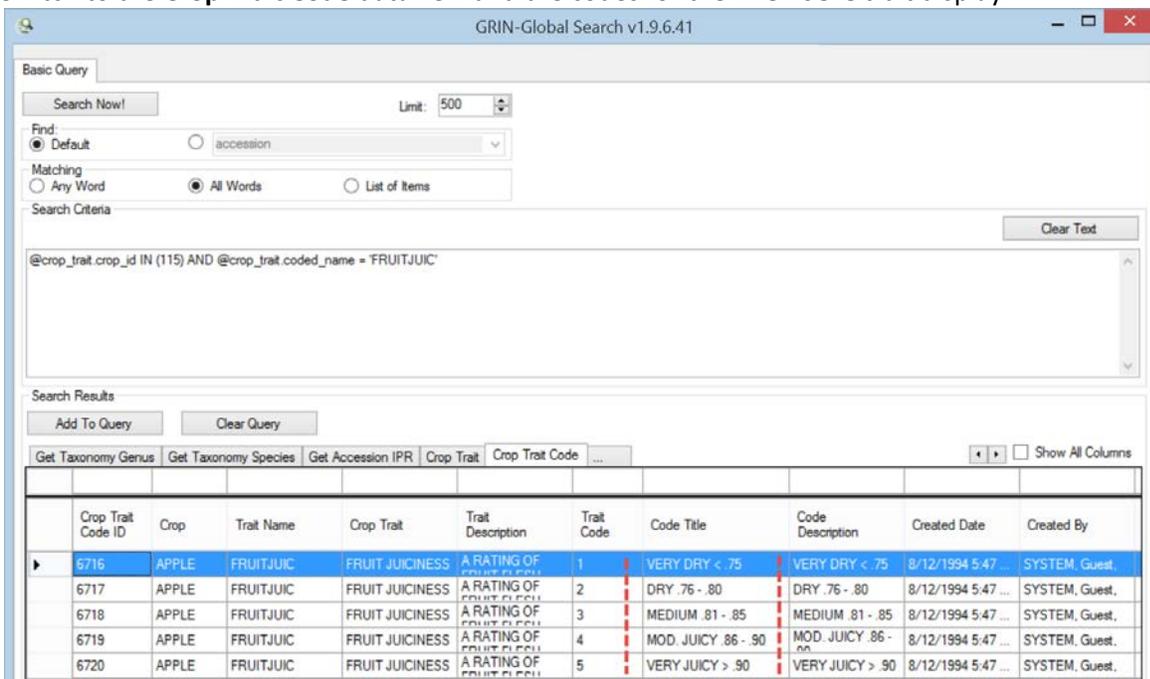


Sorting the list of records found by the Trait Name and scrolling down the list will display the row for **FRUIT JUICINESS**. Notice that the Trait Title is **FRUIT JUICINESS**; the Trait Name is **FRUITJUIC**. Add **FRUITJUIC** to the query:





Switch to the **Crop Trait Code** dataview and the codes for the **FRUITJUIC** trait display:



You can highlight the rows (in this case the five records for FRUIT JUICINESS) and drag them into Excel:

	A	B	C	D	E	F	G	H
1	Crop Trait	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description
2	6720	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUICINESS BASED ON	5	VERY JUICY > .90	VERY JUICY > .90
3	6719	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUICINESS BASED ON	4	MOD. JUICY .86 - .90	MOD. JUICY .86 - .90
4	6718	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUICINESS BASED ON	3	MEDIUM .81 - .85	MEDIUM .81 - .85
5	6717	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUICINESS BASED ON	2	DRY .76 - .80	DRY .76 - .80
6	6716	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUICINESS BASED ON	1	VERY DRY < .75	VERY DRY < .75

Now let's see what is needed to save an observation record.

In this partial screen capture of a **Crop Trait Observation** dataview, because of the violet color, we can determine that four fields are required:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor Cl
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method		
5404596	PI 613844	PI 613844 **	APPLE	FRUIT FLESH FLAVOR	ASTRINGENT STANDARD: M. C...	5			APPLE.MORPHOLOGI...		
5404646	PI 613844	PI 613844 **	APPLE	FRUIT FLESH OXIDATION	SLIGHTLY OXIDIZING 1-4%	2			APPLE.MORPHOLOGI...		
5404698	PI 613844	PI 613844 **	APPLE	FRUIT GROUND COLOR	RED STANDARD: MALUS 'CRAN...	8			APPLE.MORPHOLOGI...		
5404742	PI 613844	PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5			APPLE.MORPHOLOGI...		
5404794	PI 613844	PI 613844 **	APPLE	FRUIT LENGTH			11.00000		APPLE.MORPHOLOGI...		
5404846	PI 613844	PI 613844 **	APPLE	FRUIT WIDTH			11.00000		APPLE.MORPHOLOGI...		
10466247	PI 613844	PI 613844 **	APPLE	Ploidy Level	Diploid	2x			MALUS.PLOIDYDETE...		
10481111	PI 613844	PI 613844 **	APPLE	BUDBREAK	Fullswell	3			APPLE.MORPHOLOGI...		

Required Fieds:

- Inventory
- Crop
- Crop Trait
- Method

If the trait is a coded descriptor, then you will also need to supply a valid code in the **Coded Value** field. Notice in the above example that the **Trait Code** column has a gray color, indicating that in this dataview you cannot input or drag data into this field.

In the Curator Tool, with the **Crop Trait Observation** dataview active, drag a record that already has the Crop Trait **FRUIT JUICINESS** to a spreadsheet:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor Cl
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method		
5404646	PI 613844	PI 613844 **	APPLE	FRUIT FLESH OXIDATION	SLIGHTLY OXIDIZING 1-4%	2			APPLE.MORPHOLOGI		
5404698	PI 613844	PI 613844 **	APPLE	FRUIT GROUND COLOR	RED STANDARD: MALUS 'CRAN...	8			APPLE.MORPHOLOGI		
5404742	PI 613844	PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5			APPLE.MORPHOLOGI		
5404794	PI 613844	PI 613844 **	APPLE	FRUIT LENGTH			11.00000		APPLE.MORPHOLOGI		
5404846	PI 613844	PI 613844 **	APPLE	FRUIT WIDTH			11.00000		APPLE.MORPHOLOGI		
5404897	PI 613844	PI 613844 **	APPLE	FRUIT WEIGHT	> 50G	1			APPLE.MORPHOLOGI		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Crop Trait						Trait	Numeric	Text		Is			
2	Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Code	Value	Value	Method	Archived	Data	Original	Frequen
3		5404742	PI 613844	PI 613844 **	APPLE	FRUIT JUICINESS		VERY JUICY > .90	5		?	Quality	Value	y
4														

Now you can use the spreadsheet as a template for building your observation records. In this scenario we are only illustrating the bulk adding of **FRUIT JUICINESS** observations, but you can add any observations, as long as you provide the required fields and when traits are coded traits, you provide valid codes.

Previously we had dumped the valid codes into a spreadsheet. Use the values from the **Crop Trait Code** dataview's **Code Title** column when creating the observation records. (Note: further below, in the [English vs ENG](#) section, we'll discuss how you can use the Trait Codes instead.)



If you setup your spreadsheet with the valid **Crop Trait Code** dataview's **Code Title** values directly above the **Code Value** heading, you will benefit from Excel's handy feature which will supply an item from the list as you type.

A	B	C	D	E	F	G	H	I	J	K	L	M
					VERY JUICY > .90							
					MOD. JUICY .86 - .90							
					MEDIUM .81 - .85							
					DRY .76 - .80							
					VERY DRY < .75							
Crop Trait	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived?	Data Quality	Original Value
Observation ID	PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5				APPLE.MORPHOLOGIC.00	N		

Eventually you will have the new observation data in the spreadsheet ready to be dragged into the Curator Tool. Highlight the headings – you do not need them all, but you must include the empty **Crop Trait Observation ID** column. Including the empty **Accession** column is fine.

A	B	C	D	E	F	G	H	I	J	K
					MEDIUM .81 - .85					
					DRY .76 - .80					
					VERY DRY < .75					
Crop Trait	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived?
Observation ID	PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5				APPLE.MORPHOLOGIC.00	N
	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80					APPLE.MORPHOLOGIC.00	
	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75					APPLE.MORPHOLOGIC.00	
	PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90					APPLE.MORPHOLOGIC.00	

After dragging into the CT, but before saving:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor Cl
	Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	
	-1		PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90				APPLE.MORPHOLOGIC.00	
	-2		PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80				APPLE.MORPHOLOGIC.00	
	-3		PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75				APPLE.MORPHOLOGIC.00	
	-4		PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90				APPLE.MORPHOLOGIC.00	

After the Save:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor Cl
	Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	
	10481118	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80	2			APPLE.MORPHOLOGIC.00	
	10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75	1			APPLE.MORPHOLOGIC.00	
	10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90	4			APPLE.MORPHOLOGIC.00	

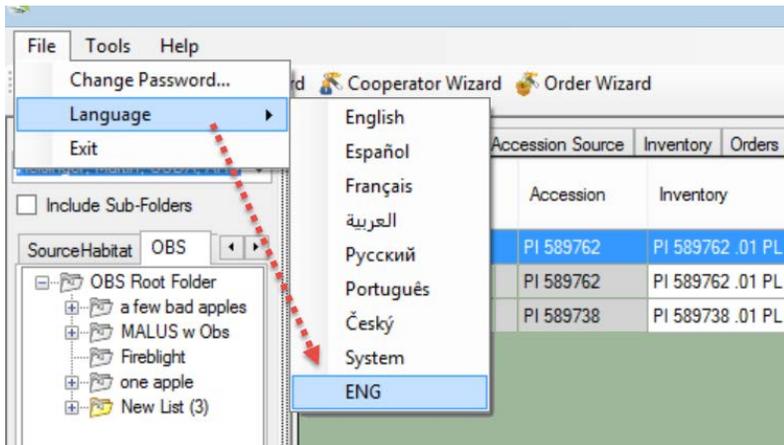
Why only three whereas the Excel table has four? The first record, which we used as a template, was already in the database. During the Save process, the Curator Tool highlights the duplicate and does not allow it to be saved again. Since it was already in the database, we only saved the three new records.

As an aside, the three observations in this example were associated to inventory records, not accessions. Remember that observations associated with [system inventory records](#) are associated to the accession.

English vs. ENG

A set of dataviews were created to allow the codes to be used, rather than the lengthier titles. Some people prefer using the ENG dataviews.

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor C
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method		
10481118	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80	2			APPLE.MORPHOLOG		
10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75	1			APPLE.MORPHOLOG		
10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90	4			APPLE.MORPHOLOG		



After you switch languages, you will be prompted to update your lookup tables. Since we are only working with the descriptors, we currently only need to update two:



(The **Crop Trait Lookup** updated before the screen capture completed.)

Click the **Refresh** button, and the Observation dataview (ENG) now looks like this:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor C.
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method		
10481118	PI 589762	PI 589762 .01 PL	APPLE	FRUITJUIC	2	2			APPLE MORPHOLO		
10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUITJUIC	1	1			APPLE MORPHOLO		
10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUITJUIC	4	4			APPLE MORPHOLO		

Compare the ENG version above with the English version we saw previously:

Get Site	Accessions	Accession Source	Inventory	Orders	Cooperators	Get Taxonomy Species	Get Crop	Get Crop Trait Observation	Source Descriptor	Source Descriptor Lang	Source Descriptor C.
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method		
10481118	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY 76 - 80	2			APPLE MORPHOLOG		
10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < 75	1			APPLE MORPHOLOG		
10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY 86 - 90	4			APPLE MORPHOLOG		

Notice especially the **Crop Trait** and the **Coded Value** fields. The **ENG** version is much simpler to bulk update. After you complete the updating, you can always switch from the **ENG** language version to the **English**.

The following is another example. In this example, the Crop Trait Fruit Shape for Watermelons is shown:

English Version:

Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Lang	Crop Trait Code Lang	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Tax
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Ar	
4714749	PI 596658	PI 596658 **	WATERMELON	Fruit shape	Round	1			WATERMELON.1...		
4714750	PI 596659	PI 596659 **	WATERMELON	Fruit shape	Oblong	3			WATERMELON.1...		
4714751	PI 596662	PI 596662 **	WATERMELON	Fruit shape	Variable	9			WATERMELON.1...		
4714759	PI 596677	PI 596677 **	WATERMELON	Fruit shape	Variable	9			WATERMELON.1...		
4714760	PI 596686	PI 596686 **	WATERMELON	Fruit shape	Oblate	2			WATERMELON.1...		
4714761	PI 596691	PI 596691 **	WATERMELON	Fruit shape	Round	1			WATERMELON.1...		
4714762	PI 596692	PI 596692 **	WATERMELON	Fruit shape	Round	1			WATERMELON.1...		
4714763	PI 596696	PI 596696 **	WATERMELON	Fruit shape	Oblong	3			WATERMELON.1...		
-1656											

ENG Version:

Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Lang	Crop Trait Code Lang	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Taxo
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	I	
4714749	PI 596658	PI 596658 **	WATERMELON	FRUITSHAPE	1	1			WATERMELON.1...		
4714750	PI 596659	PI 596659 **	WATERMELON	FRUITSHAPE	3	3			WATERMELON.1...		
4714751	PI 596662	PI 596662 **	WATERMELON	FRUITSHAPE	9	9			WATERMELON.1...		
4714760	PI 596686	PI 596686 **	WATERMELON	FRUITSHAPE	2	2			WATERMELON.1...		
4714761	PI 596691	PI 596691 **	WATERMELON	FRUITSHAPE	1	1			WATERMELON.1...		
4714762	PI 596692	PI 596692 **	WATERMELON	FRUITSHAPE	1	1			WATERMELON.1...		
4714763	PI 596696	PI 596696 **	WATERMELON	FRUITSHAPE	3	3			WATERMELON.1...		
-1656											

Refer to the document [English vs. ENG](#) for complete details on working with the **ENG** alternative language.

Archived Observations

Observation records have a TRUE/FALSE flag indicating whether the data for this observation has been archived. The default is "N." However, when set to "Y," the GRIN-Global Public Website user will not be

able to search this observation data, and the observation record is not displayed in the observation detail page. This term “archive” is misleading to some – the records are not being moved or archived somewhere else, they are simply no longer visible on the Public Website.

Descriptor Standards and Guidelines

Refer to Bioversity’s webpage on [descriptors and standards](#) and their Technical Bulletin Number 13, “[Developing crop descriptor lists, Guidelines for developers](#)” which cover the topic of crop descriptors in detail. Their webpage on descriptors states: “Descriptors lists and Derived Standards represent an important tool for a standardized characterization system and it is promoted by Bioversity throughout the world. It provides an international format and a universally understood 'language' for plant genetic resources data. The adoption of this scheme for data encoding, or at least the production of a transformation method to convert other schemes to the Bioversity format, will produce a rapid, reliable and efficient means for information exchange, storage, retrieval and communication, and will assist with the utilization of germplasm.”

The following definitions of descriptors are from the International Board for Plant Genetic Resources (IBPGR):

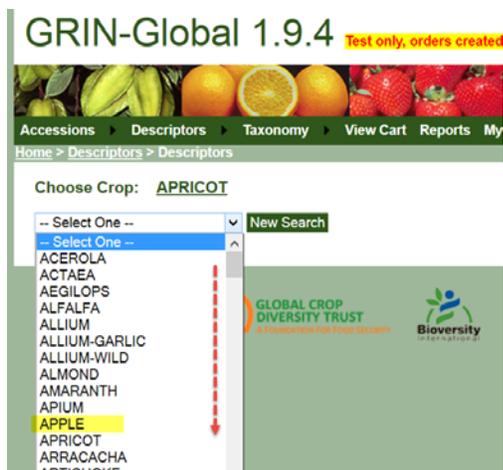
- characterization descriptors: “consists of recording those characters which are highly heritable, can be easily seen by the eye and are expressed in all environments.”
- preliminary evaluation descriptors: “consists of recording a limited number of additional traits thought desirable by a consensus of users of the particular crop.”

Using the Public Website to Determine What Traits Have Observations

Besides using the Curator Tool, there are many features within the GRIN-Global Public Website which genebank personnel may also use to examine descriptors.

Descriptors Search

Use the **Descriptors** option to review existing descriptors and observations. First select the desired crop; after doing so, you have several tools with which you can review descriptors and observations.



After the crop has been selected, if the crop has observations, all descriptors which have been used to denote the observations will be listed:

Choose Crop: **APPLE**

APPLE

Choose descriptor(s):

Chemical composition descriptors (CHEMICAL)

SOLSOLIDS

Disease descriptors (DISEASE)

FBBLNAT FBSHNAT

Morphological descriptors (MORPHOLOGY)

AFTERRIPE FRTFLSHCOL FRTWEIGHT LOBTUBRAT SHOOTCUTIC
 ANTHERCOLOR FRTFLSHFLA FRUITBLOOM OVERCOLOR SHOOTHAIR
 BARKCOLOR FRTFLSHFRM FRUITJUIC OVERCOLPAT SLENTINTEN
 CALLOBECOL FRTFLSHOXI FRUITSHAPE PETALHAIR SLENTSHAPE

You can select any of the descriptors to review the observations:

Choose Crop: **APPLE**

APPLE

Choose descriptor(s):

Chemical composition descriptors (CHEMICAL)

SOLSOLIDS

Disease descriptors (DISEASE)

After selecting the descriptors, scroll down and click the **Go** button:

Cytological or cellular descriptors (CYTOLOGIC)

PLOIDY

Growth descriptors (GROWTH)

TREEVIGOR

In this example, the Apple crop has 2780 observations recorded for the **Soluble Solids** trait. Of course multiple traits can be selected.

The screenshot shows a search interface for the trait 'Soluble Solids' in the crop 'APPLE'. The 'Choose Crop' dropdown is set to 'APPLE' with a 'New Search' button. The 'Choose descriptor(s):' dropdown is set to 'SOLUBLE SOLIDS (2780)' with a 'Clear Descriptor Choices' button. The 'Select descriptor values:' dropdown is set to '(Any)' with a 'Clear Descriptor Values' button. Below these are radio buttons for 'Results Match': 'All Conditions' (selected), 'Any Condition', and 'Results have observation data for all selected descriptors'. A list of values is shown: 1, 3.2, 6.4, and 6.8. The value '1' is highlighted.

In the value boxes you can select actual values in the database. The condition dropdown is used to indicate the filtering condition -- "ANY" is the default, but you can change that to "GREATER THAN," "EQUAL TO," etc.

When using criteria boxes, you can select multiple criteria:

The screenshot shows the 'SOLUBLE SOLIDS (2780)' search interface. The condition dropdown is '(Any)'. The value list shows 7.4, 8, 8.2, and 8.3. The values 7.4, 8, and 8.2 are highlighted in blue. A red text box says 'Hold Ctrl & click to select multiple values' with a mouse cursor pointing to the 8.3 value.

Click **Search** to continue:



The results are displayed and can also be exported to a spreadsheet:

Choose descriptor(s): [Clear Descriptor Choices](#)

Select descriptor values: [Clear Descriptor Values](#)

Results:

Actions... **Export with Options**

Select: All, None, Inverse, Highlighted **Options:** Show 25 items << < 1-25 > >> **Export...**

Group By: PlantID SOLUBLE SOLIDS +

<input type="checkbox"/>	PI 588745	12.8
<input type="checkbox"/>	PI 588746	9.5
<input type="checkbox"/>	PI 588748	15
<input type="checkbox"/>	PI 588749	13.5
<input type="checkbox"/>	PI 588750	13.4
<input type="checkbox"/>	PI 588751	13.3

The **Export with Options** feature provides additional data columns which can be selected to include in the export:

Home Page > Search Accessions > Descriptors

Query Criteria:
Crop: APPLE
SOLUBLE SOLIDS Equal To ALL VALUES;
Results match all trait conditions.

Choose Crop: APPLE
APPLE **New Search**

Choose descriptor(s): [Clear Descriptor Choices](#)

Select descriptor values: [Clear Descriptor Values](#)

Results:

Actions... **Export with Options**

Select: All, None, Inverse, Highlighted **Options:** Show 25 items << < 1-25 > >> **Export...**

Group By: PlantID SOLUBLE SOLIDS +

<input type="checkbox"/>	PI 588745	12.8
<input type="checkbox"/>	PI 588746	9.5
<input type="checkbox"/>	PI 588748	15

Export with Options

The following window lists the additional columns that can be exported:

Optional fields

- Accession suffix
- Plant name (cultivar or other identifier)
- Species name
- Country where collected/developed
- Original value when ob value is standardized
- Frequency within the accession this ob value occurs
- Minimum value for this accession
- Maximum value for accession
- Average value for accession
- Standard deviation for accession
- Sample size for above statistics
- Inventory prefix
- Inventory number
- Inventory suffix
- Comment about the accession

Export



There is an additional feature available only to genebank staff who have their Public Website Username attached to their Curator Tool account – on this window they will see an **Export Fieldbooks** button.

Home Page > Descriptors > Descriptors

Query Criteria:
Crop: APPLE
SOLUBLE SOLIDS Equal To ALL VALUES;
Results match all trait conditions.

Choose Crop: **APPLE** (Click this link to go to crop page)

APPLE

Choose descriptor(s):

Select descriptor values:

Results:

Select: All, None, Inverse, Highlighted Options: Show 25 items

Group By:
 Plant ID **SOLUBLE SOLIDS** +

<input type="checkbox"/>	PI 588745	12.8
<input type="checkbox"/>	PI 588746	11.3: 9.5

Displaying CROP Descriptors, species, and other Information

Use the link on the **Crop** name to access additional lists.

Home Page > Search Accessions > Descriptors

Query Criteria:
Crop: APPLE
SOLUBLE SOLIDS Equal To ALL VALUES;

Results match all trait conditions.

Choose Crop: **APPLE**

APPLE

Choose descriptor(s):



Accessions > Descriptors > Taxonomy > View Cart Reports My Account > Help > Choose language English

APPLE

Contains characteristic data on Apple (Malus) accessions as proposed by the Apple Crop Germplasm Committee (CGC). For additional information on the evaluations, contact the Plant Genetic Resources Unit, Geneva, NY 14456-0462, 315-787-2390.

[List of Descriptors](#) [List of Genetic Markers](#) [List of Species](#) [List of Citations](#) (containing accessions in crop)

Partial Descriptor List for Apples:

Descriptors for APPLE:

Category: CHEMICAL

- SOLUBLE SOLIDS (SOLSOLIDS)
PERCENT SOLUBLE SOLIDS (AVERAGE REFRACTOMETER READINGS FROM 3 FRUITS AT FULL MATURITY)

Category: CYTOLOGIC

- Ploidy Level (PLOIDY)
Ploidy level determined by nuclear DNA content using flow cytometry

Category: DISEASE

- Fire Blight Blossom (Natural) (FBBLNAT)
Natural occurrence of Blossom Fire Blight (Erwinia amylovora) in Geneva, New York.
- Fire Blight Shoot (Natural) (FBSHNAT)
Natural occurrence of Shoot Fire Blight (Erwinia amylovora) in Geneva, New York.

Category: GROWTH

Click on any descriptor link to list the descriptor details, studies, and distributions of values for the selected trait:

Descriptors for APPLE:

Category: CHEMICAL

1 [SOLUBLE SOLIDS \(SOLSOLIDS\)](#)
PERCENT SOLUBLE SOLIDS (AVERAGE REFRACTOMETER READINGS FROM 3 FRUITS AT FULL MATURITY)

Category: CYTOLOGIC

1 [Ploidy Level \(PLOIDY\)](#)

Descriptor: SOLUBLE SOLIDS (SOLSOLIDS) [Download this trait](#)

Definition:	PERCENT SOLUBLE SOLIDS (AVERAGE REFRACTOMETER READINGS FROM 3 FRUITS AT FULL MATURITY)
Crop:	APPLE
Category:	Chemical composition descriptors
Status:	Crop Germplasm Committee approved
Data Type:	Numeric descriptor
Maximum Length:	7
Data Format:	990.99
Responsible site:	Natl. Germplasm Repository - Geneva (GEN)

Studies or environments for this trait

- [APPLE.MORPHOLOGIC.00](#) - (233 [Accessions](#))
- [APPLE.MORPHOLOGIC.01](#) - (109 [Accessions](#))
- [APPLE.MORPHOLOGIC.02](#) - (185 [Accessions](#))
- [APPLE.MORPHOLOGIC.03](#) - (500 [Accessions](#))
- [APPLE.MORPHOLOGIC.04](#) - (342 [Accessions](#))
- [APPLE.MORPHOLOGIC.07](#) - (410 [Accessions](#))
- [APPLE.MORPHOLOGIC.99](#) - (283 [Accessions](#))

Distribution of Values for SOLUBLE SOLIDS (SOLSOLIDS)

Range	Number of Accessions
1.00000 - 73.90000	2779
73.90000 - 146.80000	0
146.80000 - 219.70000	0
219.70000 - 292.60000	0
292.60000 - 365.50000	0
365.50000 - 438.40000	0

The Crop “Family” of Dataviews - Overview

There are five crop-related dataviews that need to be considered when setting up the crops and crop traits for your organization *before Observations can be recorded*.

The following illustrates the general flow in inputting the data in the crop-related dataviews – this flow should be followed in establishing any new crop trait:

Step	Input Data for the...	Dataview to use
1	Crop	Crop
2	Trait	Crop Trait Crop Trait Lang
3	Code	Crop Trait Code Crop Trait Code Lang

If you don't have the crop defined in the Crop dataview, you cannot input any of the traits related to the crop. Similarly, before you can create the codes for a trait, you must define the traits first.

Conversely, you cannot delete a crop from the **Crop** table if it has traits associated to it. Similarly, traits cannot be removed from the **Crop Trait** dataview unless all of the dependent data in the children dataviews has been removed first.

Crop

The hierarchy of the observation tables begins with the Crop table. Historically in the GRIN system, the Crop data table was not necessarily set up to be taxonomy specific, since the expectation was that the public users would be more familiar with common rather than taxonomic names.

Crop Dataview

Two fields in this dataview can be inputted:

- **Crop** (required)
- **Note**

The note for each crop provides some general details about who is responsible for maintaining the crop descriptors or where additional information can be found. In setting up crop characterization and evaluation descriptor:

Crop ID	Crop	Note	Created Date
285	BLACKBERRY	Contains characteristic data on Blackberry accessions maintained at the...	7/11/2011
286	BLACK-RASPBERRY	Contains characteristic data on Black Raspberry accessions maintained ...	7/11/2011
287	RED-RASPBERRY	Contains characteristic data on Red Raspberry accessions maintained a...	7/11/2011
289	SORGHUM-GENSTOCKS	Contains data on the Sorghum Genetic Stock Collection. For additional i...	8/19/2011
400	RICE-GENSTOCKS	Contains evaluation/characterization data on Rice Genetic Stock from...	8/19/2011
300	AVOCADO	Contains characteristic data on Avocado (Persea), accessions. For addit...	4/23/2013
301	CASSAVA		6/21/2013
400	CHAYOTE	Contains characteristic data on chayote.	2/22/2013
-191			12/5/2013 10:41 AM



For this document I created an ELDERBERRY crop and then created supporting descriptor records to illustrate the family of Crop dataviews. If the example seems to not be botanically sound, it probably isn't!

--Marty Reisinger

Crop ID	Crop	Note	Created Date	Created By	Modified Date
401	ELDERBERRY	Elderberry data - contact mar	2/26/2014 2:51 PM	Reisinger, Martin,...	
-2			2/27/2014 2:37 PM	Reisinger, Martin,...	

Crop Trait

Crop Trait Dataview

This dataview accesses the descriptor table for the crop or descriptor set. It includes both characterization (plant height, oil content, days to flower, etc.) and evaluation parameters (resistance to an insect species, response to fertilizer, etc.)

Accessions	Inventory	Orders	Cooperators	Crop	Get Crop Trait	Crop Trait Observation	Inventory Quality Status	Taxonomy Species	Taxonomy Crop Map	...
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length	Num Forms
174018	GRAPE	BERRYSHAPE	Berry Shape	Typical berry shape	Y	Morphological ...	Alpha/numeric descriptor	Y	1	

Required fields:

- Crop
- Trait Name
- Category
- Data Type

Accessions	Inventory	Orders	Cooperators	Get Code Value	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Observation	...
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the ber...	<input type="checkbox"/>	Morphological...	Alpha/numeric d...	<input checked="" type="checkbox"/>	
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the lea...	<input type="checkbox"/>	Morphological...	Alpha/numeric d...	<input type="checkbox"/>	
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	<input checked="" type="checkbox"/>	Morphological...	Alpha/numeric d...	<input checked="" type="checkbox"/>	
-4					<input type="checkbox"/>	[Null]	[Null]	<input type="checkbox"/>	

The read-only fields, **Trait Title** and **Trait Description**, will be supplied after a corresponding **Crop Trait Language** record has been completed.

A new **Crop Trait** being added (not saved yet):

Accessions	Inventory	Orders	Cooperators	Get Code Value	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Observation	...
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the berries	<input type="checkbox"/>	Morphological ...	Alpha/numeri...	<input checked="" type="checkbox"/>	1
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the lea...	<input type="checkbox"/>	Morphological ...	Alpha/numeri...	<input type="checkbox"/>	3
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	<input checked="" type="checkbox"/>	Morphological ...	Alpha/numeri...	<input checked="" type="checkbox"/>	2
-4	ELDERBERRY	PLANTSIZE			<input type="checkbox"/>	Morphological ...	Alpha/numeri...	<input checked="" type="checkbox"/>	1

Search... Accession Wizard Cooperator Wizard Order Wizard

Show lists from: Reisinger, Martin, USDA, ARS

Include Sub-Folders

marAccessions CROPS Images

CROPS Root Folder

- New List
- SESAME
- elderberry_stuff
 - New List
 - Berry color
 - ELDERBERRY
 - Berry color
 - Leaf size
 - Fruit shape
 - Leaf size
 - Berry color - English
 - Leaf size - English
 - Fruit shape
 - Fruit shape - English
 - :croptraitid=294059**

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is P Rev
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the berries	N
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the	N
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	Y
294059	ELDERBERRY	PLANTSIZE			Y

Until the Crop Trait gets its Title, the list item uses the format :croptraitid=...

Later:

Show lists from: Reisinger, Martin, USDA, ARS

Include Sub-Folders

marAccessions CROPS Images

CROPS Root Folder

- New List
- SESAME
- elderberry_stuff
 - New List
 - Berry color
 - ELDERBERRY
 - Berry color
 - Leaf size
 - Fruit shape
 - Leaf size
 - Berry color - English
 - Leaf size - English
 - Fruit shape
 - Fruit shape - English
 - Plant size**
 - PLANTSIZE - English

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the berries	N	Morphological ...
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the	N	Morphological ...
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	Y	Morphological ...
294059	ELDERBERRY	PLANTSIZE	Plant size	Size of the plant	Y	Morphological ...

filled in after the corresponding Crop Trait Language record was saved

The **Trait Title** and the **Trait Description** fields are displayed now because the corresponding **Crop Trait Language** record had been saved.

Crop Trait Language Dataview

The **Crop Trait Language** dataview has three required fields:

- Crop
- Crop Trait
- Language

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	Created D
6994	ELDERBERRY	Berry color	English	Berry color	Color of the berries	2/26/2014
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the lea...	2/26/2014
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/2014
-4						2/27/2014

Notice in the following screen, the **Trait Name** is displayed in the lookup list. After the **Trait Title** is entered and the **Crop Trait Language** record saved, the **Trait Title** will display in future lookups.

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	Created
6994	ELDERBERRY	Berry color	English	Berry color	Color of the berries	2/26/2014
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the lea...	2/26/2014
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/2014
-4	ELDERBERRY					2/27/2014

Lookup Picker v1.9.5.0

HINT: For big lists, use the text filter to shorten the list search.

Filter ->

Berry color

Fruit color

Fruit shape

Leaf size

PLANTSIZE

Show Only Choices Valid For This:

crop_id

A new **Crop Trait Language** record:

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	Created Date
6994	ELDERBERRY	Berry color	English	Berry color	Color of the berries	2/26/2014 10:15...
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the leaves	2/26/2014 10:16...
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/2014 10:48...
6997	ELDERBERRY	PLANTSIZE	English	Plant size	Size of the plant	2/27/2014 10:50...

Here's the lookup now:

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	Created Date
6994	ELDERBERRY	Berry color	English	Berry color	Color of the berries	2/26/2014 3:15 ...
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the lea...	2/26/2014 3:16 ...
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/2014 3:48 ...
6997	ELDERBERRY	Plant size	English	Plant size	Size of the plant	2/27/2014 3:50 ...
-5	ELDERBERRY					2/27/2014 10:56...

Lookup Picker v1.9.5.0

HINT: For big lists, use the text filter to shorten the list search.

Filter ->

- Berry color
- Fruit shape
- Leaf size
- Plant size

Show Only Choices Valid For This:

crop_id

Crop Trait Code

Crop Trait Code Dataview

Table of the list of acceptable code values for the crop descriptors.

In the example above, **Plant size** was set up here as a coded field. (In the “real world,” some organizations may simply record the actual height measurement for the Plant Size trait. Nevertheless, for this example, we will establish this trait as a coded field to illustrate what is needed when setting up a coded field.)

When adding a code via the **Crop Trait Code** dataview, three fields are to be supplied – all three are required:

- Crop
- Crop Trait
- Trait Code

The **Crop** and **Crop Trait** fields use lookups to have their entries selected; the actual code is inputted in the **Trait Code** field. The read-only fields **Trait Name** and **Trait Description** will be automatically filled after the save.

Before:

Crop	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Code	Crop Trait Code Lang	Crop Trait Observation	Source Descriptor	Source C
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description	
-1								

After the Save:

Accessions	Inventory	Orders	Cooperators	Get Code Value	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Code	Crop Trait Obser
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description		
23069	ELDERBERRY	PLANTSIZE	Plant size	Size of the plant	1				

The **Code Title** and **Code Description** fields are also “read-only;” they will be filled *after* a corresponding **Crop Trait Code Language** record has been created.



In Edit mode, use **Ctrl – N** to create additional records below the one new record; and add any additional Trait Codes that will be used.

Later, after a corresponding **Crop Trait Code Language** record was saved:

Inventory	Orders	Cooperators	Get Code Value	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Code	Crop Trait Code Lang	Crop
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description		
23069	ELDERBERRY	PLANTSIZE	Plant size	Size of the plant	1	Very short	(<1.2 meters)		

Crop Trait Code Language Dataview

The **Crop Trait Code Language** record is used to assign a **Code Title** and **Code Description** to a **Crop Trait Code** record. Six fields can be supplied (while not shown in the violet color and technically not required fields, why else would you create this record if you were not supplying at least the **Code Title** field?)

Required fields:

- Crop
- Crop Trait
- Code Definition
- Language

Before:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
-1									

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language
-1	ELDERBERRY	Plant size					

Lookup Picker v1.9.5.0

HINT: For big lists, use the text filter to shorten the list search.

Filter ->

1

Show Only Choices Valid For This:

crop_trait_id

After:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language
23069	ELDERBERRY	Plant size	PLANTSIZE	1	Plant size	Size of the plant	English

Shown here are the **Crop Trait Code Language** records for all five codes designed for the “Plant size” **Crop Trait** for the ELDERBERRY crop:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
23069	ELDERBERRY	Plant size	PLANTSIZE	Very short	Plant size	Size of the plant	English	Very short	(<1.3 meters)
23070	ELDERBERRY	Plant size	PLANTSIZE	Short	Plant size	Size of the plant	English	Short	(1.3 --1.5 meters)
23071	ELDERBERRY	Plant size	PLANTSIZE	Intermediate	Plant size	Size of the plant	English	Intermediate	(1.6 --1.8 meters)
23072	ELDERBERRY	Plant size	PLANTSIZE	Tall	Plant size	Size of the plant	English	Tall	(1.9 -- 2.1 meters)
23073	ELDERBERRY	Plant size	PLANTSIZE	Very tall	Plant size	Size of the plant	English	Very tall	(> 2.1 meters)

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
12067	GRAPE	Berry Shape	BERRYSHAPE	Roundish	Berry Shape	Typical berry shape	English	Roundish	Roundish

Appendix: Changes in this Document

October 21, 2015

- reviewed document and replaced outdated screens

February 23, 2015

- added extensive overviewed
- replaced Observations screens which have been modified
- replaced PW pages to include Descriptors option on the menu