Observations and Descriptors: CROP Dataviews

Revision Date
December 4, 2014

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.

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Observations

Get Crop Trait Observation

(GRIN users referred to this table as the "Observation" table.) This dataview contains the crop specific observations for an accession. The observation table holds all the crop-specific characteristic/evaluation data for all accessions and inventory.

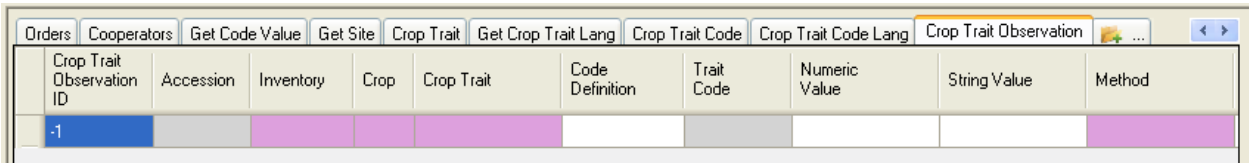
Assuming the descriptors ("crop traits") have already been added for the crops for which you are recording observations, as a Curator Tool user you may need to only use the **Observation** dataview in which to enter your evaluation results. In this first section of the document, besides showing how to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

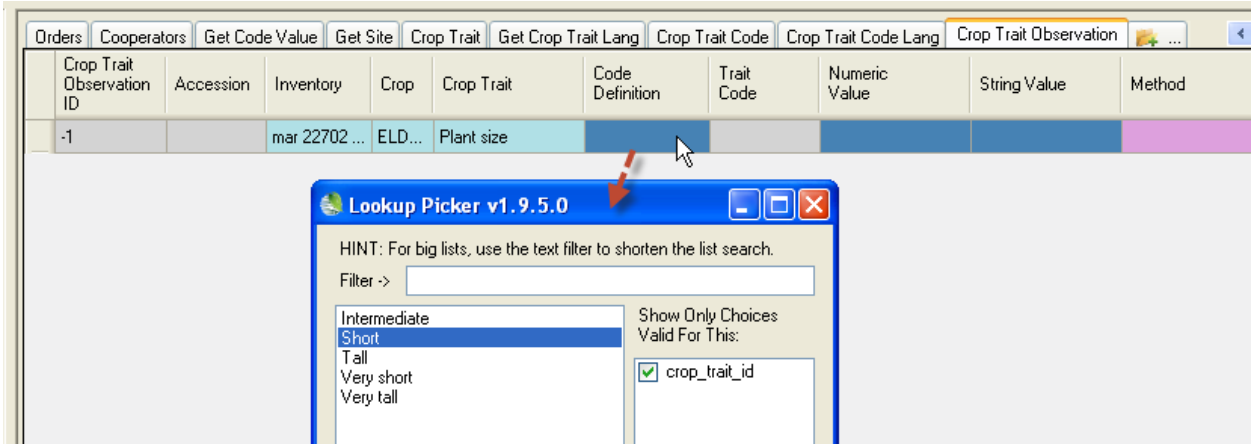
Tip

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.)

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

- Inventory
- Crop
- Crop Trait
- Method





Note

Violet colored cells are required; gray fields are read-only. In the above example, the **Accession** and **Trait Code** values will be supplied after the save.

Before the save:

Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Code | Crop Trait Code Lang | Crop Trait Observation

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Code Definition	Trait Code	Numeric Value	String Value	Method	Is
-1		mar 22702 ...	ELD...	Plant size	Short				ELDERBERRY-2...	

After saving (the **Trait Code** field fills in with the respective value):

Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Code | Crop Trait Code Lang | Crop Trait Observation

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Code Definition	Trait Code	Method	Nu Va
10273297	mar 22702 rei	mar 22702 rei **	ELDERBERRY	Plant size	Short	2	ELDERBERRY-2014	

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, it is possible to associate an observation 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 = "**")

Bulk Importing of Observations

At some point in time 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.

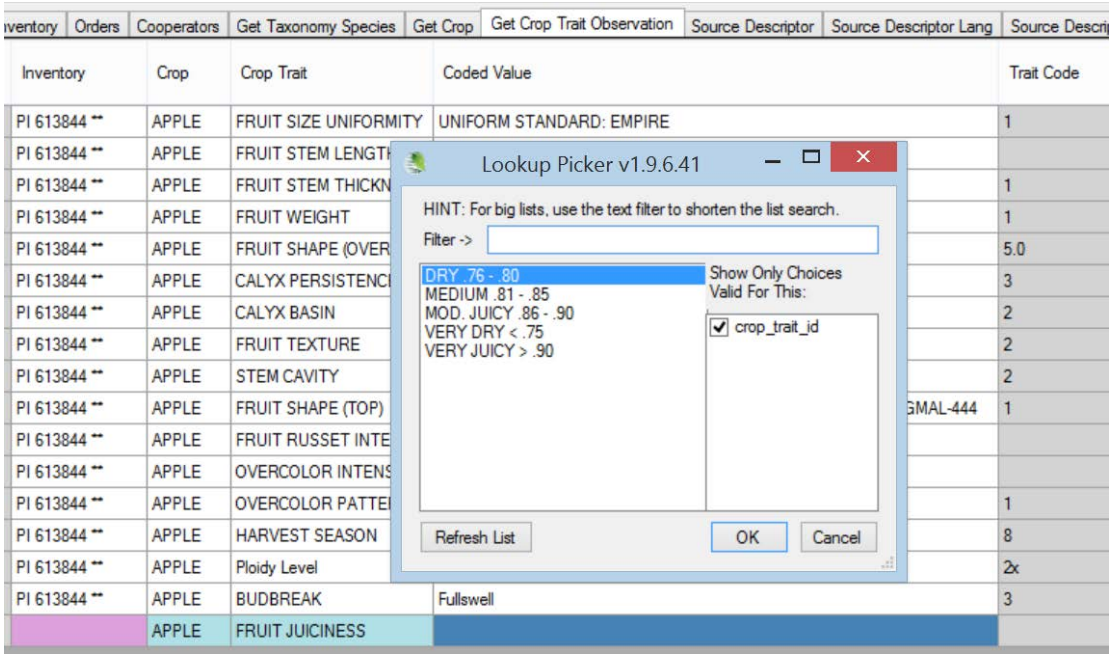
Sample Observation Data for Apples

Get Site | Accessions | Accession Source | Inventory | Orders | Cooperators | Get Taxonomy Species | Get Crop | Get Crop Trait Observation | Source Descriptor | Source Descriptor Lang | Source Descriptor Ca

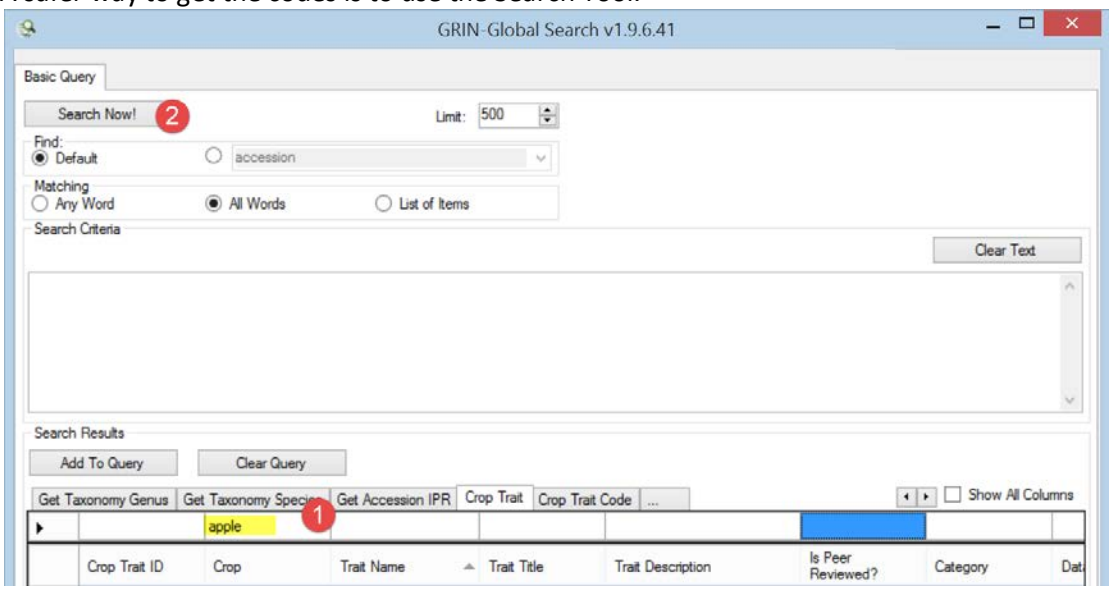
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code
4644682	PI 613844	PI 613844 .k SG	APPLE	Fire Blight Shoot (Natural)	Very resistant - no occurrence	1
4979138	PI 613844	PI 613844 .k SG	APPLE	Fire Blight Blossom (Natural)	ML/M, intermediate	3
5404444	PI 613844	PI 613844 **	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

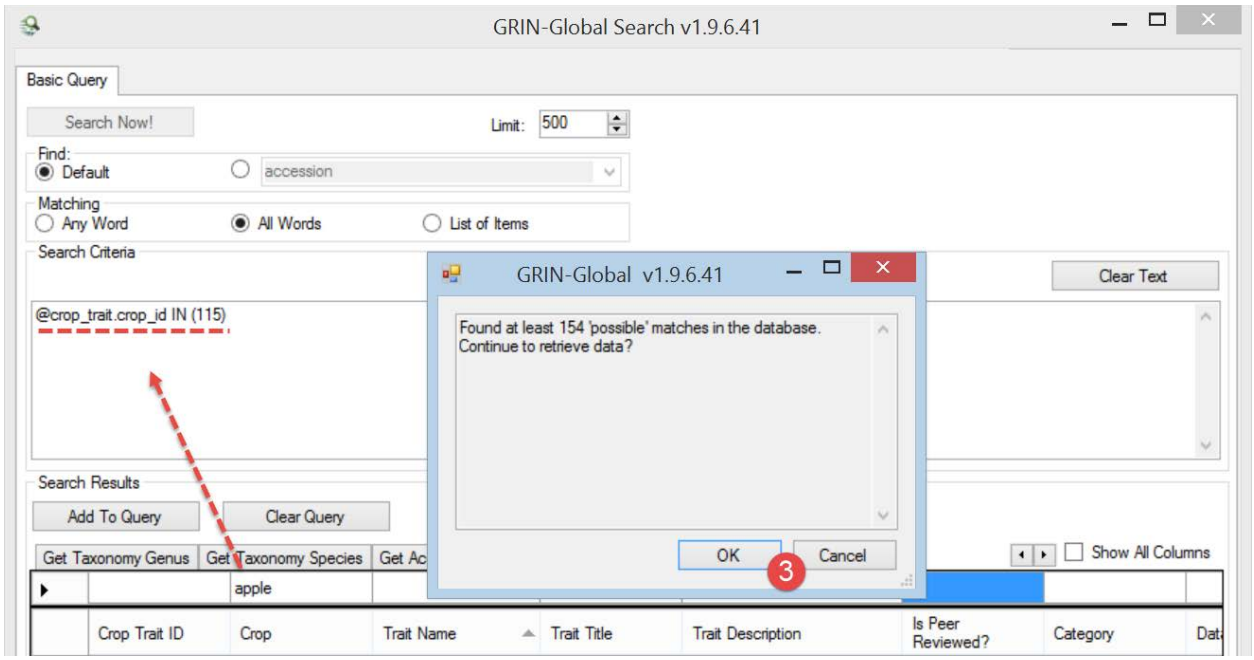
In the following scenario, assume that the observations being recorded are for the Apple trait **FRUIT JUICINESS**. **FRUIT JUICINESS** is a coded trait. There are several methods for determining what the possible valid codes are.

In EDIT mode, one simplistic method is to use the **Get Crop Trait Observation** dataview. You could start to add 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.

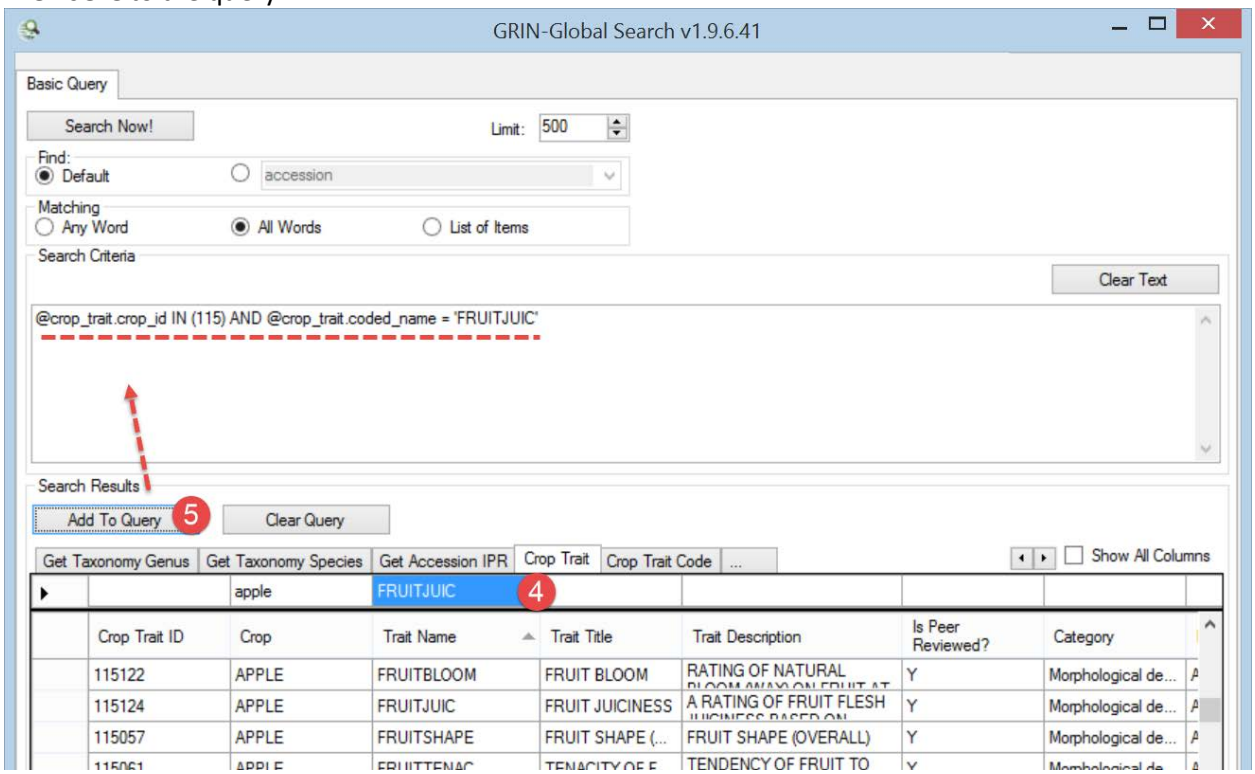


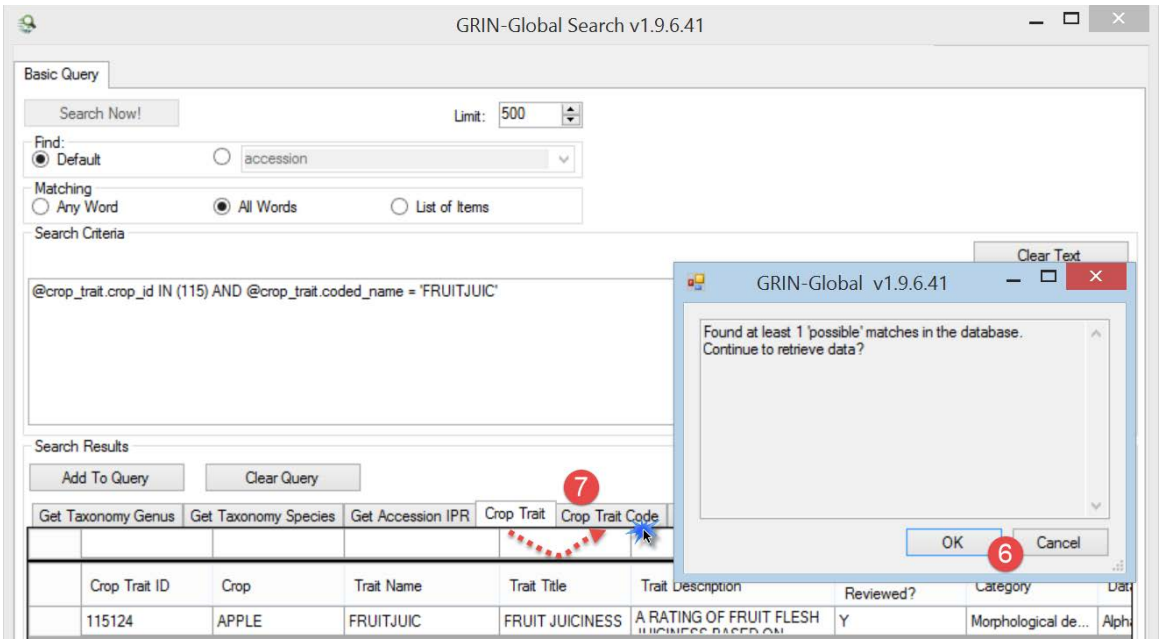
A safer way to get the codes is to use the Search Tool.



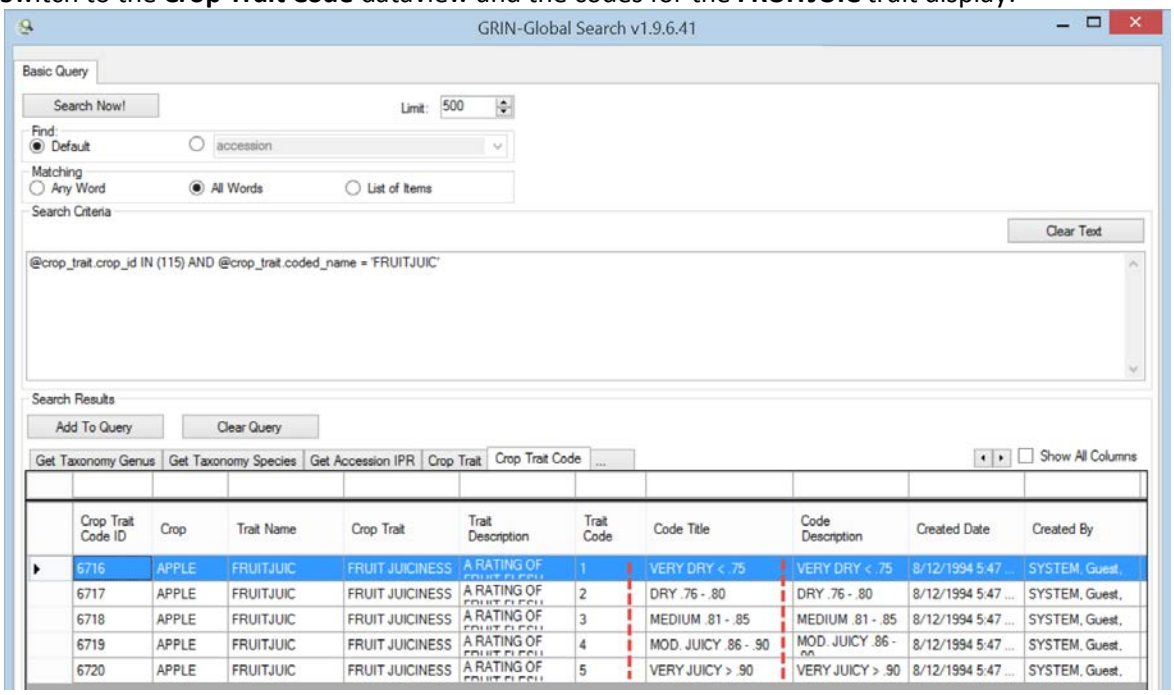


Sorting the list of records found by the Trait Name and scrolling down the list will display the row for **FRUIT JUICINESS.** Notice that the Trait Title is **FRUIT JUICINESS**; the Trait Name is **FRUITJUIC.** Add **FRUITJUIC** to the query:





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 JUI(	5	VERY JUICY > .90	VERY JUICY > .90
3	6719	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUI(	4	MOD. JUICY .86 - .90	MOD. JUICY .86 - .90
4	6718	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUI(	3	MEDIUM .81 - .85	MEDIUM .81 - .85
5	6717	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUI(	2	DRY .76 - .80	DRY .76 - .80
6	6716	APPLE	FRUITJUIC	FRUIT JUICINESS	A RATING OF FRUIT FLESH JUI(	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 Co

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...
-58									

Column Chooser | Other Options

Required Fieds:

- Inventory
- Crop
- Crop Trait
- Method

If the trait is a coded descriptor, then you will also need to supply a valid code. Notice in the above example that the **Trait Code** column has a gray color, inidicating 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 Co

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

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived ?	Data Quality	Original Value	Frequen y
2	5404742	PI 613844	PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5			APPLE.MORPHOLOGIC.00	N			
3														
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 JUCINESS** 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.)

Tip

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 Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived ?	Data Quality	Original Value
		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
4						MEDIUM .81 - .85					
5						DRY .76 - .80					
6						VERY DRY < .75					
7	Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is Archived ?
8			PI 613844 **	APPLE	FRUIT JUICINESS	VERY JUICY > .90	5			APPLE.MORPHOLOGIC.00	N
9			PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80				APPLE.MORPHOLOGIC.00	
10			PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75				APPLE.MORPHOLOGIC.00	
11			PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90				APPLE.MORPHOLOGIC.00	
12											

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 C

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.MORPHOLOGI
-2		PI 589762 .01 PL	APPLE	FRUIT JUICINESS	DRY .76 - .80				APPLE.MORPHOLOGI
-3		PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75				APPLE.MORPHOLOGI
-4		PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90				APPLE.MORPHOLOGI

Column Chooser

Options

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 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.MORPHOLOGI
10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUIT JUICINESS	VERY DRY < .75	1			APPLE.MORPHOLOGI
10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUIT JUICINESS	MOD. JUICY .86 - .90	4			APPLE.MORPHOLOGI

Column Chooser

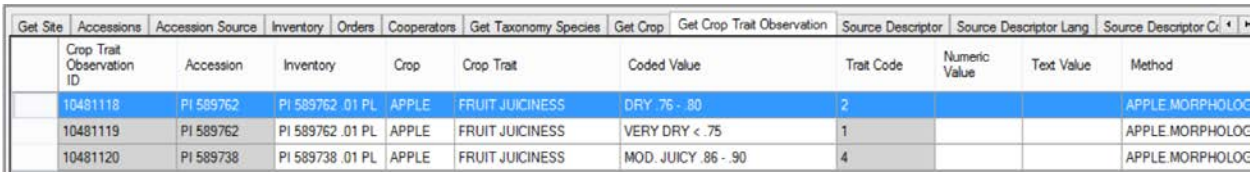
Options

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 saved just the three new records.

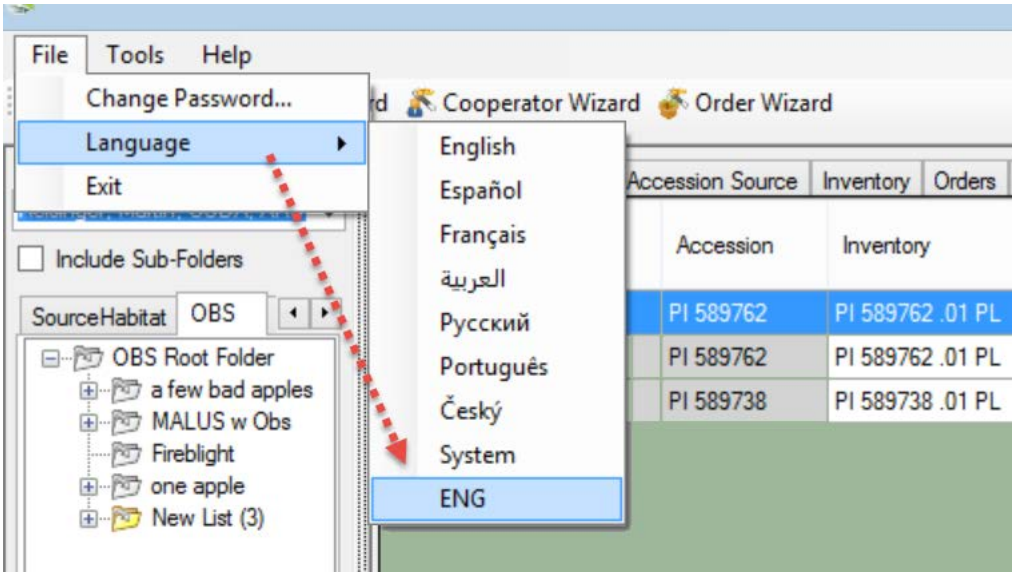
As an aside, the three observations in this example were associated to inventory records, not accessions. Remember that observations associated with system inventory records are associated to the accession.

English vs. ENG

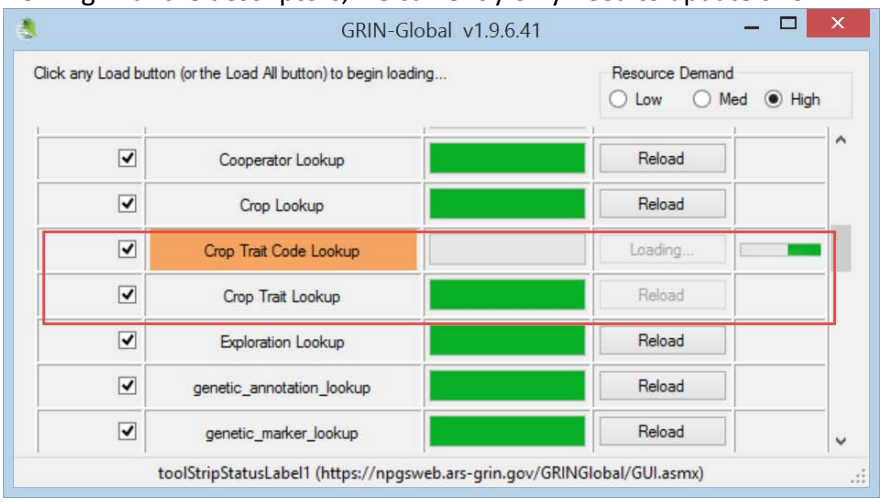
A set of dataviews were created to allow the codes to be used, rather than the lengthier titles. Some people prefer using the ENG dataviews.



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.MORPHOLC
10481119	PI 589762	PI 589762 .01 PL	APPLE	FRUITJUIC	1	1			APPLE.MORPHOLC
10481120	PI 589738	PI 589738 .01 PL	APPLE	FRUITJUIC	4	4			APPLE.MORPHOLC

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 back to the **English** version.

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.

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."

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.

Use the PW to Determine What Traits Have Observations

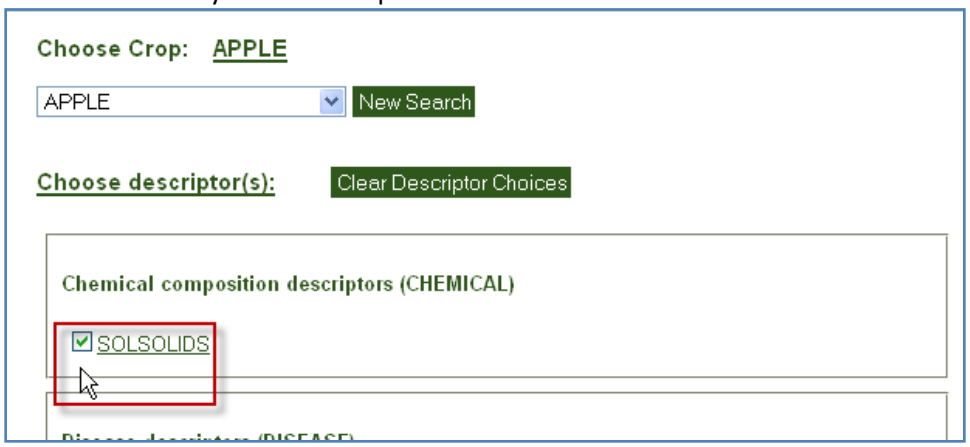
Besides using the Curator Tool, there are many features within the GRIN-Global Public Website which genebank personnel may also use to examine descriptors.

Descriptors Search

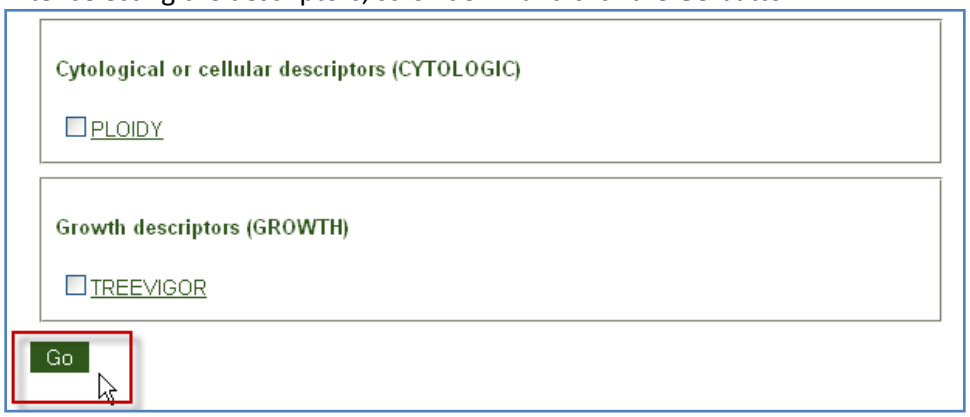
Use the **Search Descriptors** option to review existing descriptors and observations. First select the desired crop; after doing so, you have several tools with which you can review descriptors and observations.

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

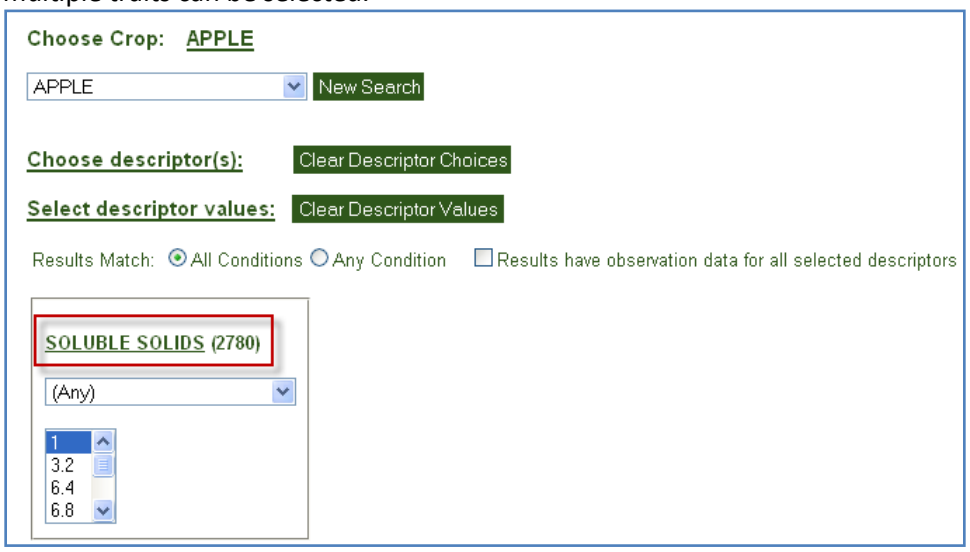
You can select any of the descriptors to review the observations:



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

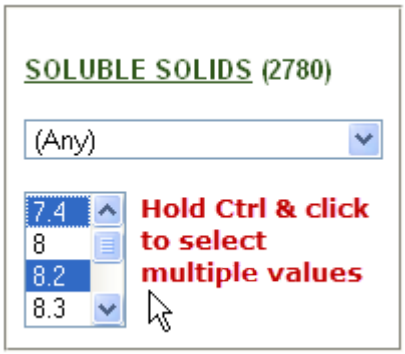


In this example, the Apple crop has 2780 observations recorded for the **Soluble Solids** trait. Of course multiple traits can be selected.

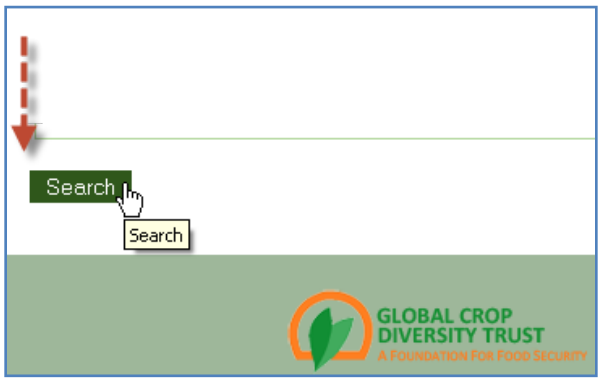


In the value boxes you can select actual values in the database. The condition dropdown is used to indicate the filtering condition -- "ANY" is the default, but you can change that to "GREATER THAN," "EQUAL TO," etc.

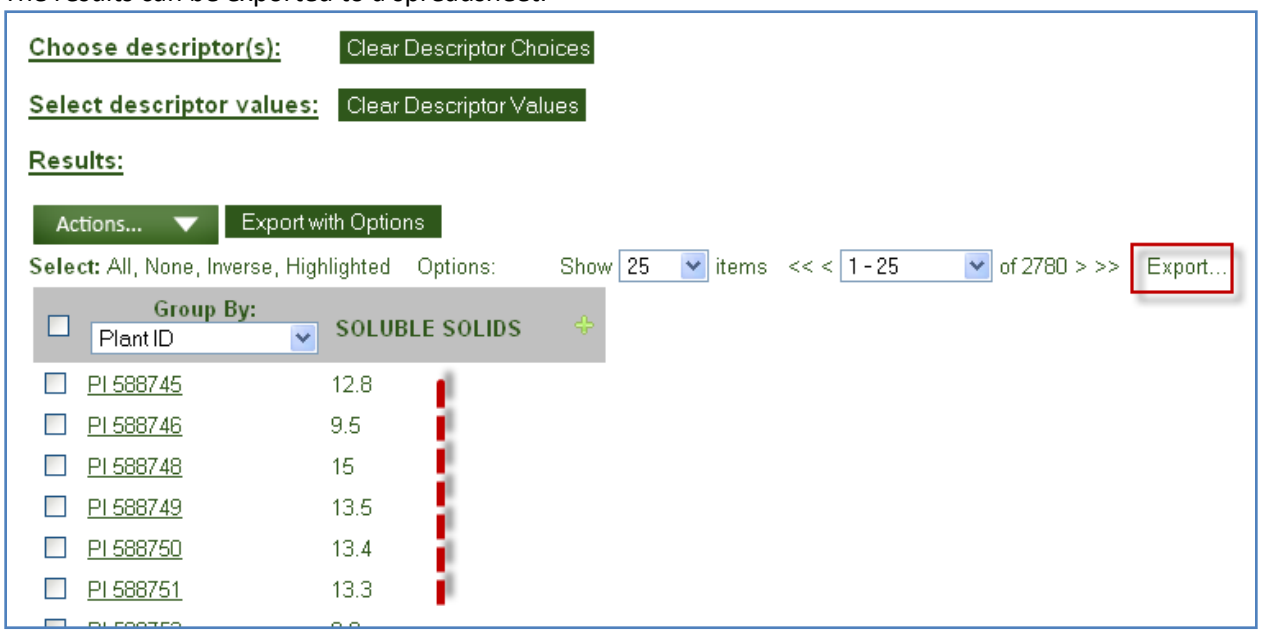
When using criteria boxes, you can select multiple criteria:



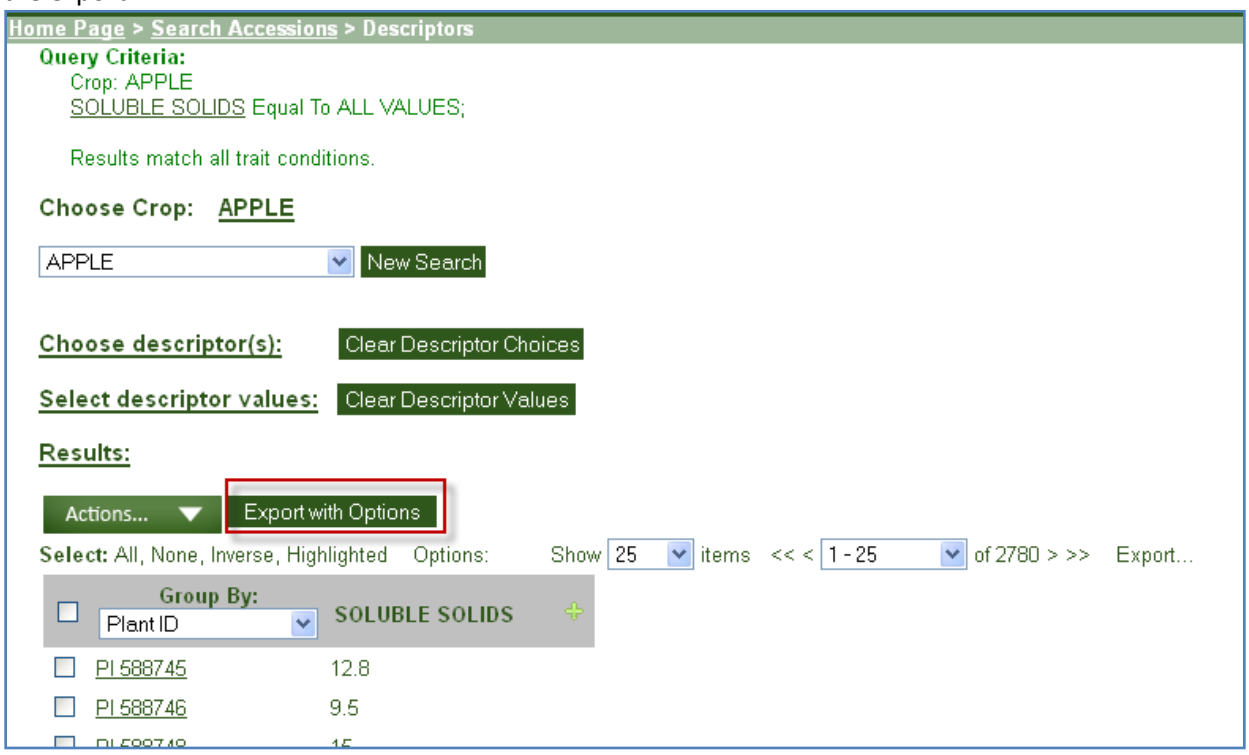
Click **Search** to continue:



The results can be exported to a spreadsheet.

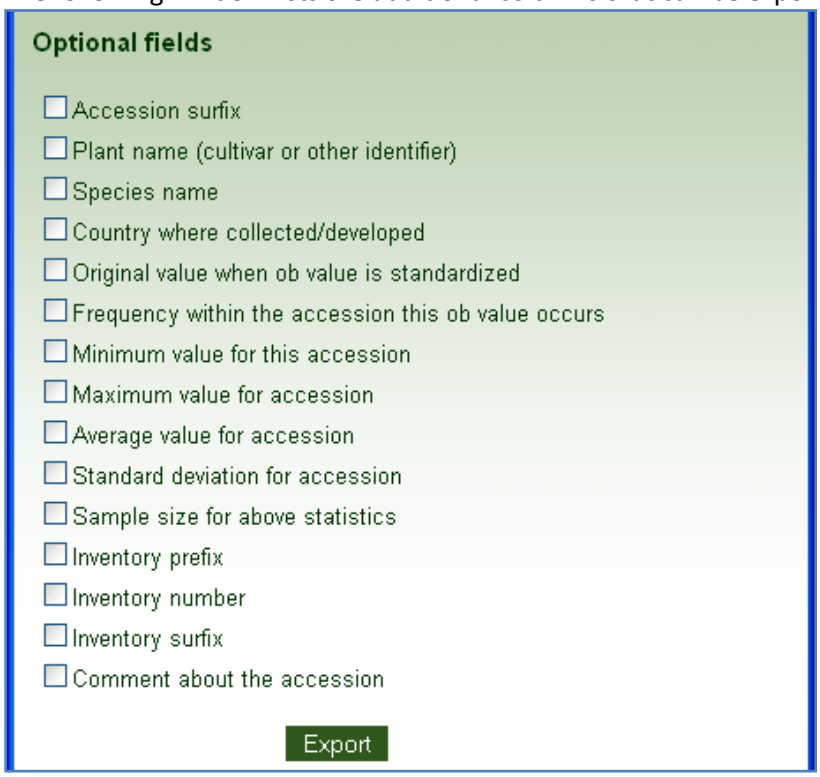


The **Export with Options** feature provides additional data columns which can be selected to include in the export:

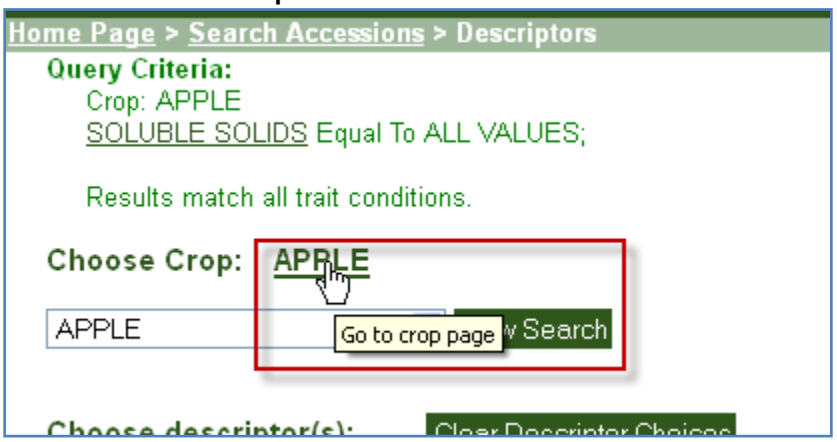


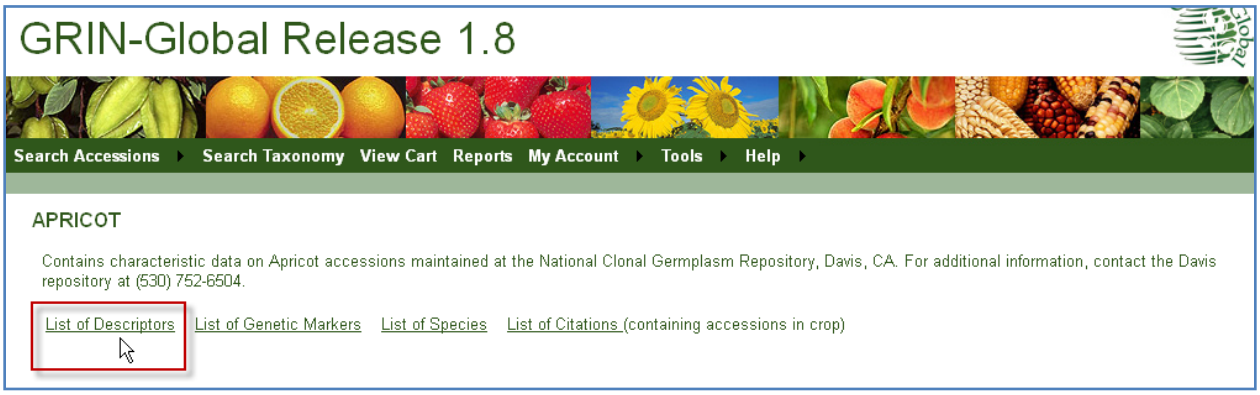
Export with Options

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

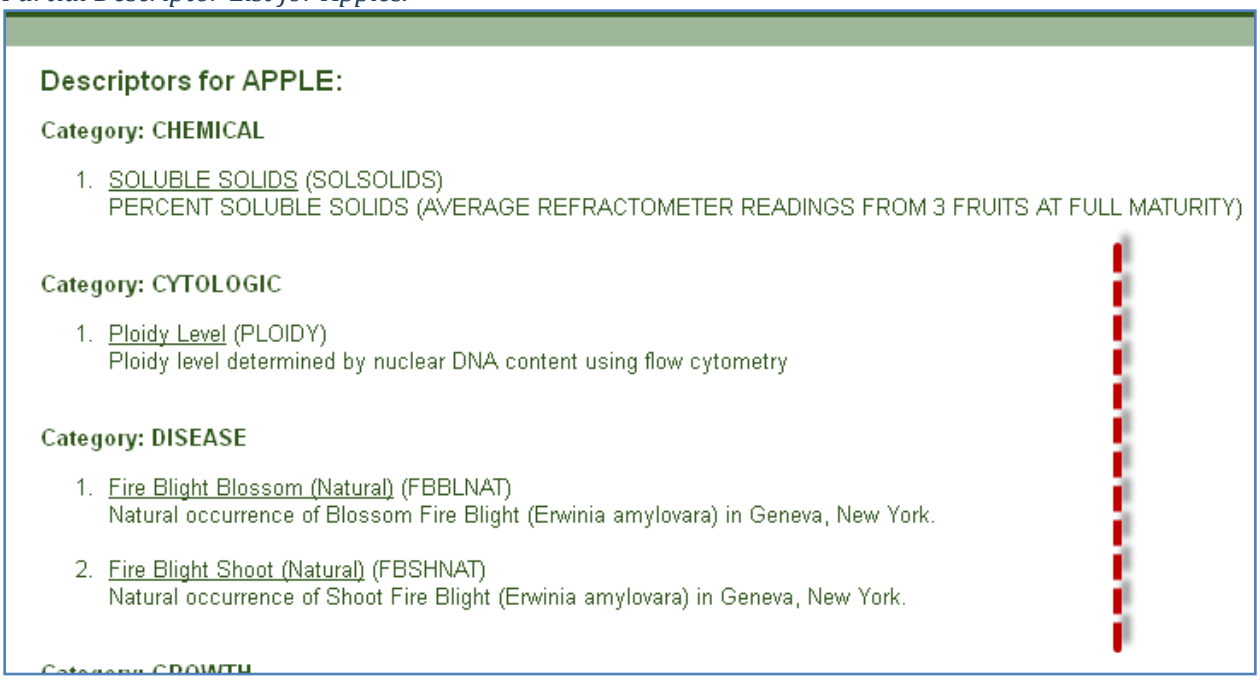


Use the link on the **Crop** name to access additional lists.

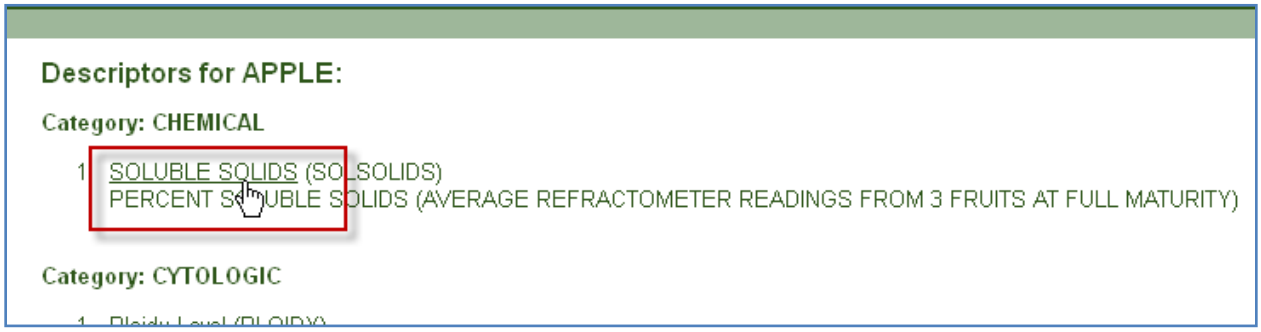


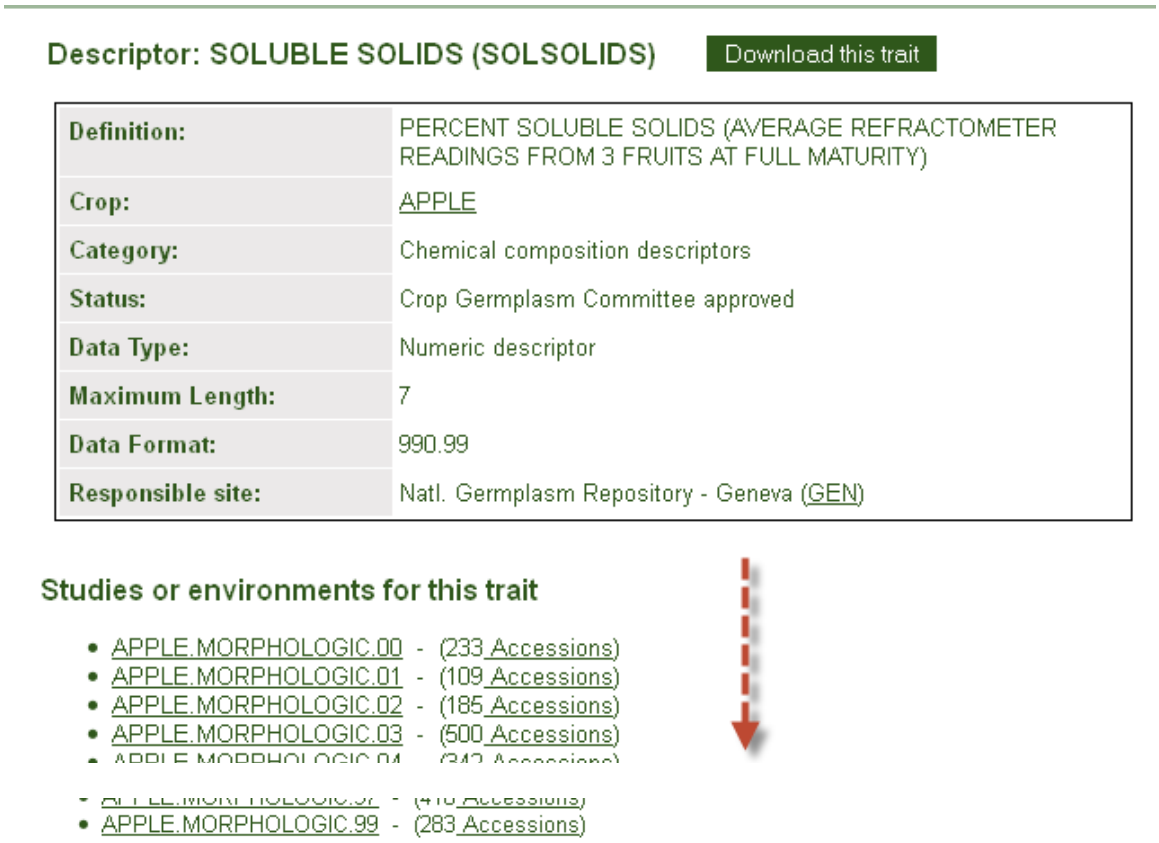


Partial Descriptor List for Apples:



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





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

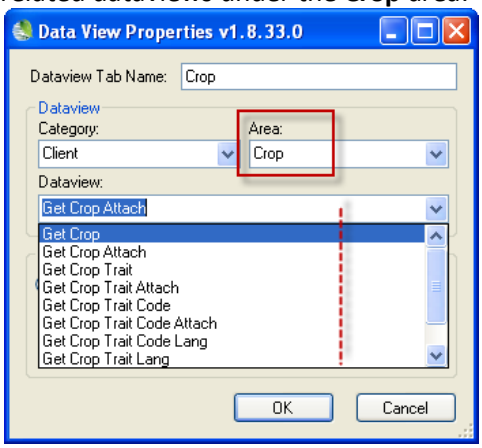
Crop

The hierarchy of the observation tables begins with the Crop table. Since certain characteristics transcend taxonomies, they are "grouped" under Crops. For example, the GRASS-WARMSEASON Crop includes Acroceras macrum, Alloteropsis cimicina, Andropogon distachyos, Andropogon gayanus, and many other species.

Also, 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.

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:

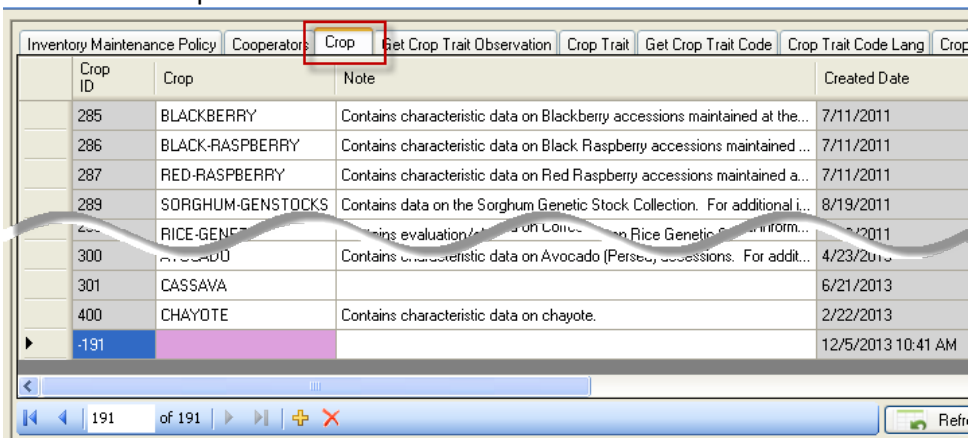


Crop Dataview

Two fields in this dataview can be inputted:

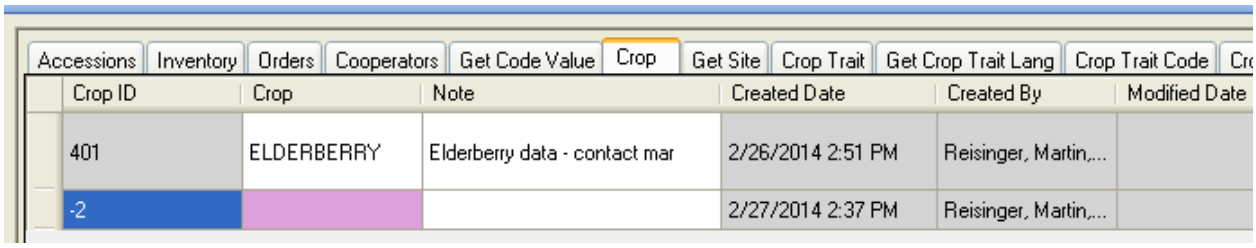
- **Crop** (required)
- **Note**

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:



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 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 | Get Code Value | Get Site | Crop Trait | Crop Trait Observation | ...

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the berries	N	Morphological ...	Alpha/numeri
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the	N	Morphological ...	Alpha/numeri
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	Y	Morphological ...	Alpha/numeri

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 | ...

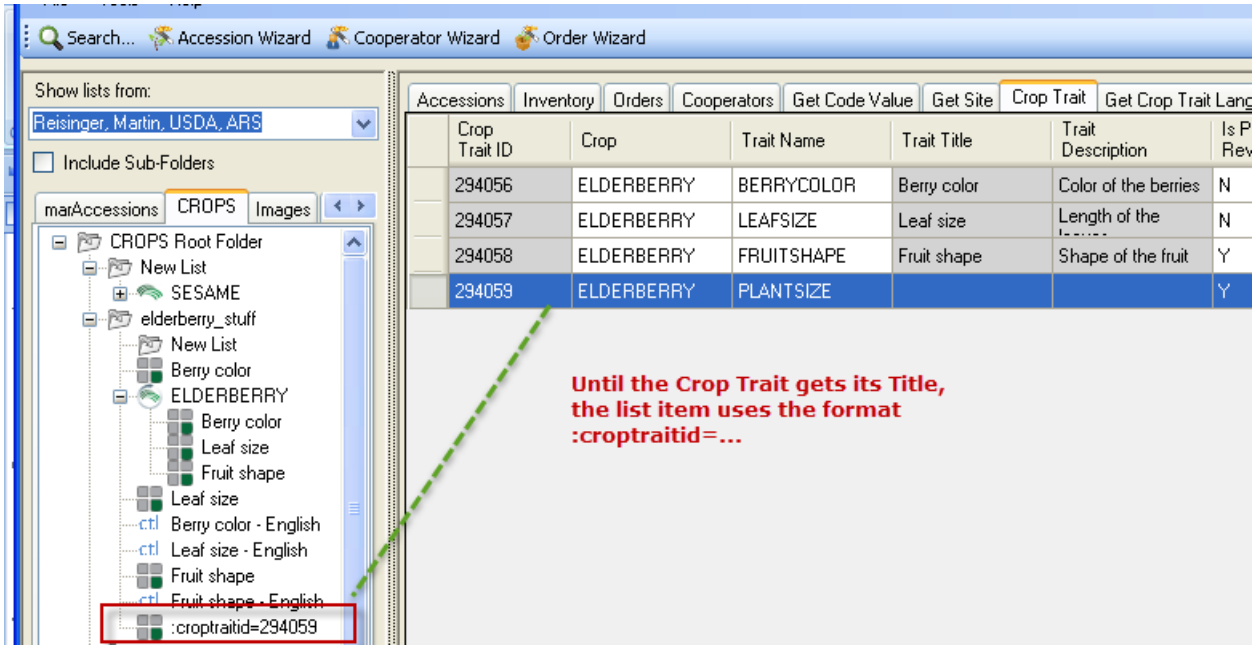
Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?
294056	ELDERBERRY	BERRYCOLOR	Berry color	Color of the ber...	☐	Morphological...	Alpha/numeric d...	☑
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the le...	☐	Morphological...	Alpha/numeric d...	☐
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	☑	Morphological...	Alpha/numeric d...	☑
-4					☐	[Null]	[Null]	☐

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

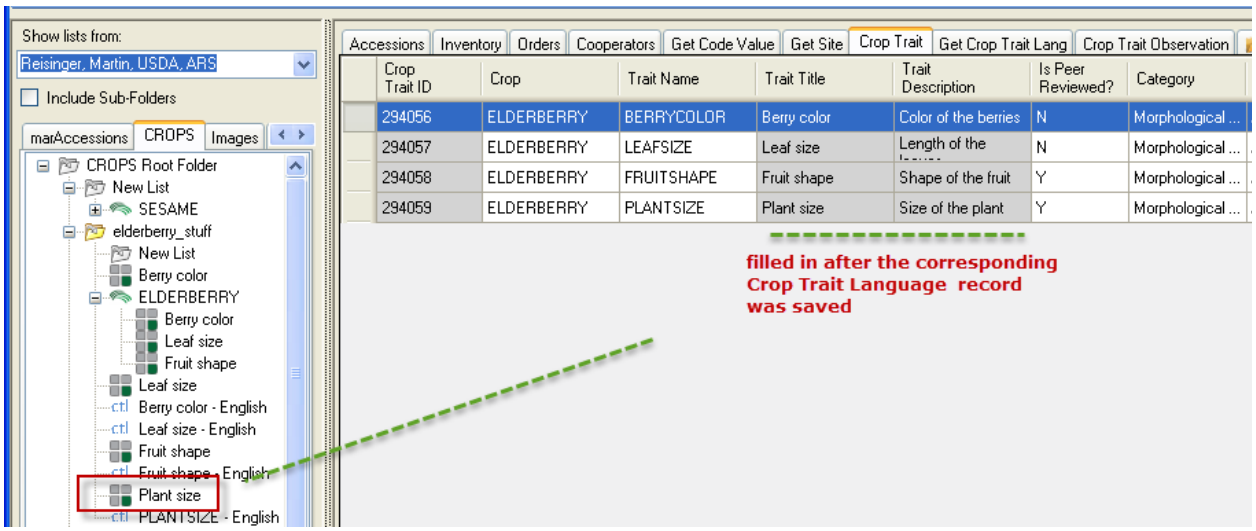
A new **Crop Trait** being added:

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	☐	Morphological ...	Alpha/numeri...	☑	1
294057	ELDERBERRY	LEAFSIZE	Leaf size	Length of the lea...	☐	Morphological ...	Alpha/numeri...	☐	3
294058	ELDERBERRY	FRUITSHAPE	Fruit shape	Shape of the fruit	☑	Morphological ...	Alpha/numeri...	☑	2
-4	ELDERBERRY	PLANTSIZE			☐	Morphological ...	Alpha/numeri...	☑	1



Later:

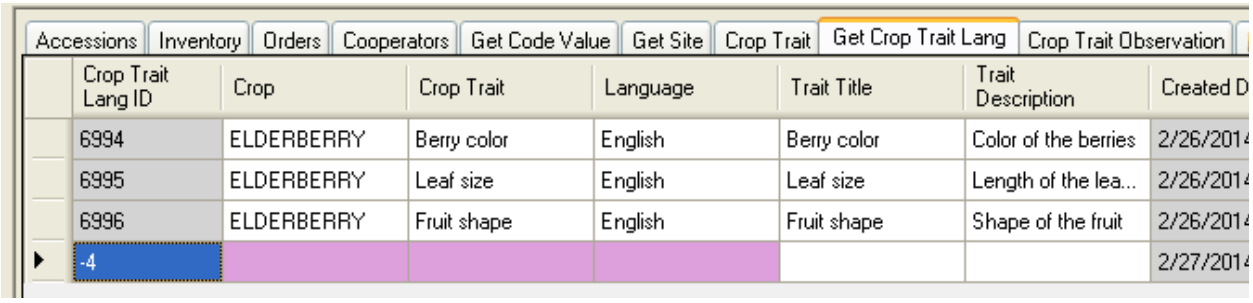


The **Trait Title** and the **Trait Description** fields are displayed now because the corresponding **Crop Trait Language** record had been saved.

Crop Trait Language Dataview

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

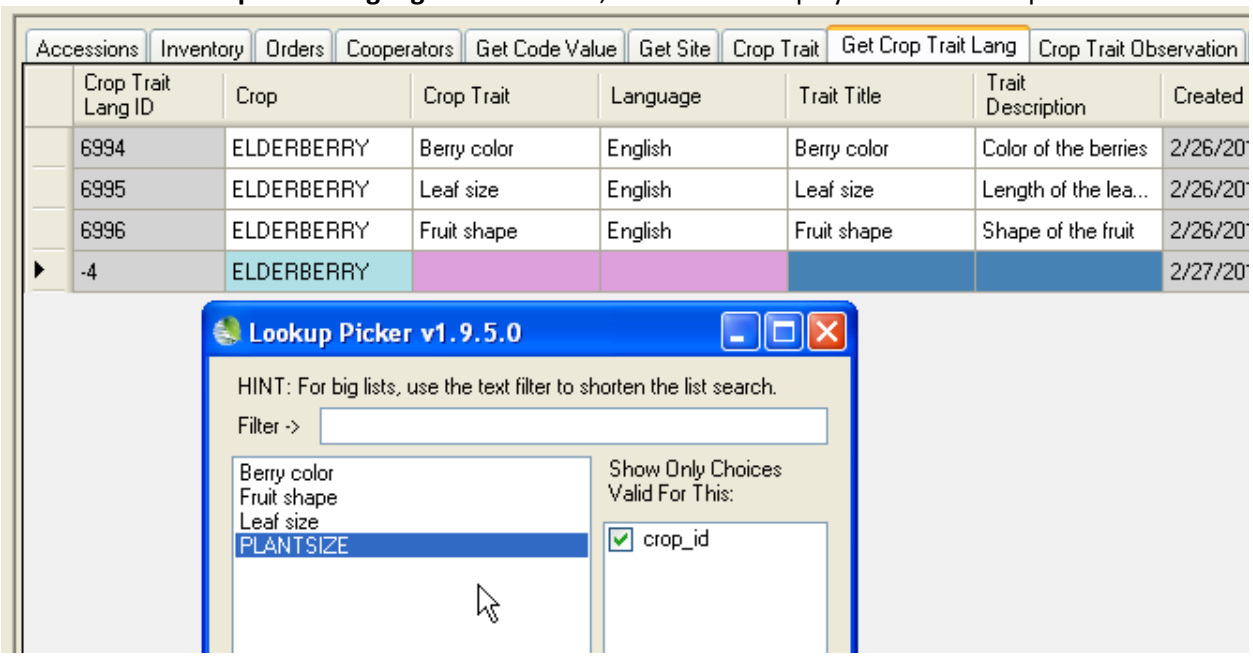
- Crop
- Crop Trait
- Language



Accessions | Inventory | Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Observation

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	2/26/201
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the lea...	2/26/201
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/201
-4						2/27/201

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 title will display in future lookups.



Accessions | Inventory | Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Observation

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	Created
6994	ELDERBERRY	Berry color	English	Berry color	Color of the berries	2/26/20
6995	ELDERBERRY	Leaf size	English	Leaf size	Length of the lea...	2/26/20
6996	ELDERBERRY	Fruit shape	English	Fruit shape	Shape of the fruit	2/26/20
-4	ELDERBERRY					2/27/20

Lookup Picker v1.9.5.0

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

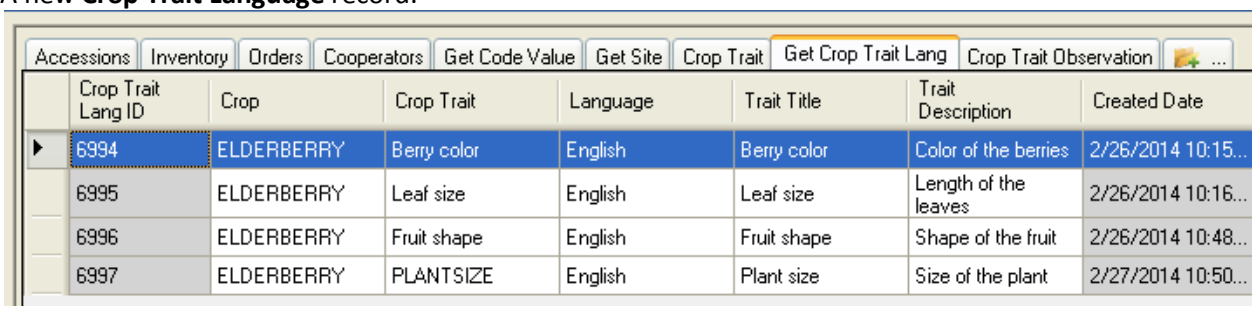
Filter ->

Berry color
Fruit shape
Leaf size
PLANTSIZE

Show Only Choices Valid For This:

crop_id

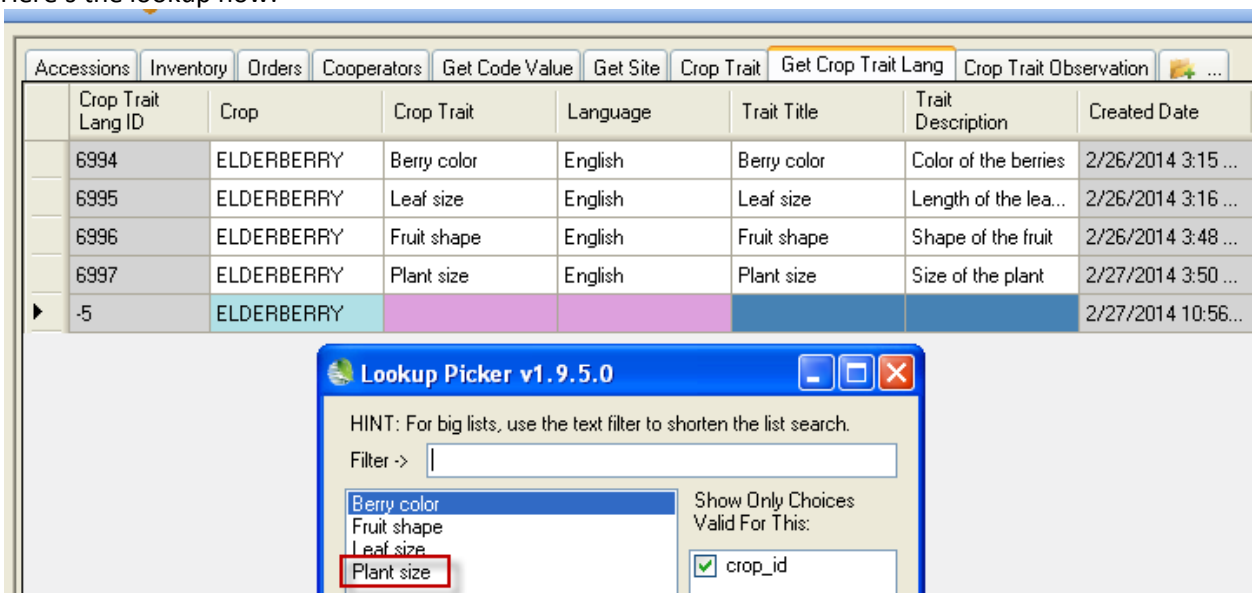
A new **Crop Trait Language** record:



Accessions | Inventory | Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Observation | ...

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:



Accessions | Inventory | Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Observation | ...

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.

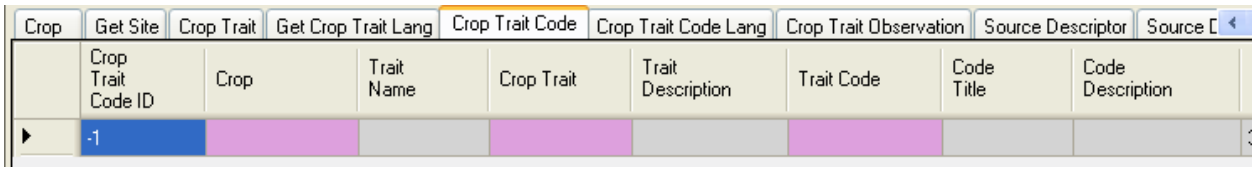
In the example above, **Plant size** was set up here as a coded field. (In the "real world," some organizations may simply record the actual height measurement for the Plant Size trait. Nevertheless, for this example, we will establish this trait as a coded field to illustrate what is needed when setting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



After the Save:

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.

Tip

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	Cr
23069	ELDERBERRY	PLANTSIZE	Plant size	Size of the plant	1	Very short	(<1.2 meters)	2/2

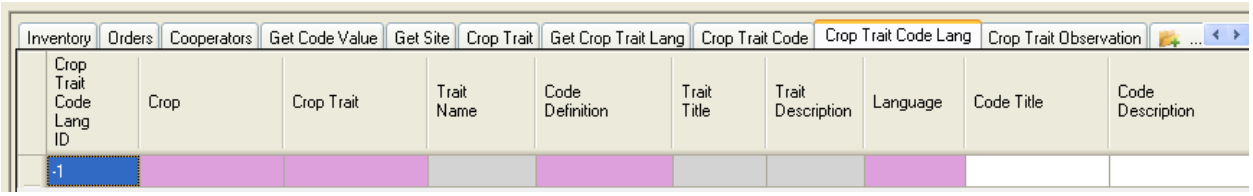
Crop Trait Code Language Dataview

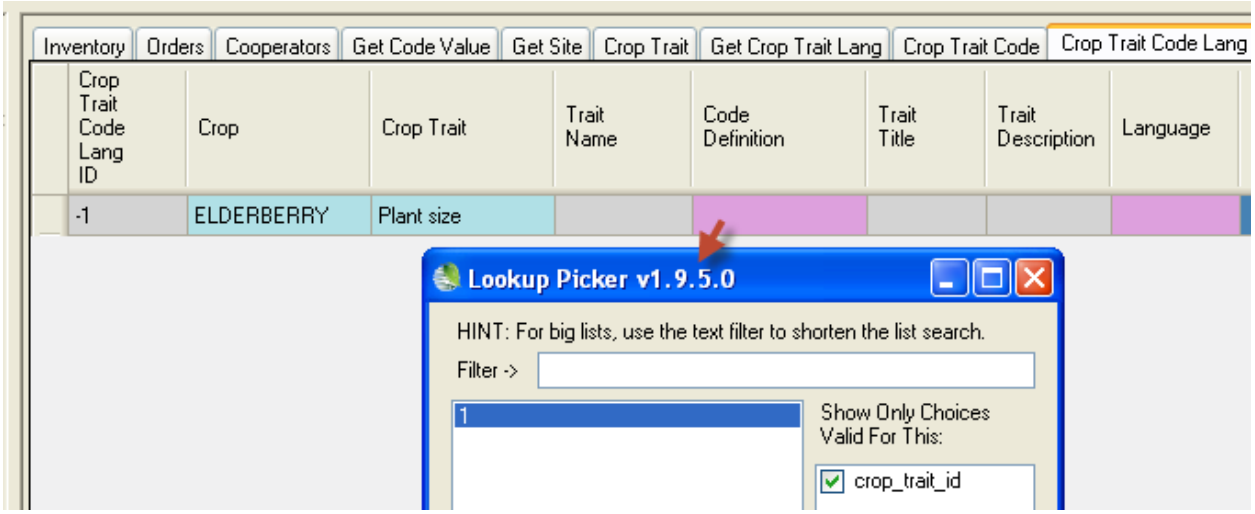
The **Crop Trait Code Language** record is used to assign a **Code Title** and **Code Description** to a **Crop Trait Code** record. Six fields can be supplied (while not shown in the violet color and technically not required fields, why else would you create this record if you were not supplying at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

Required fields:

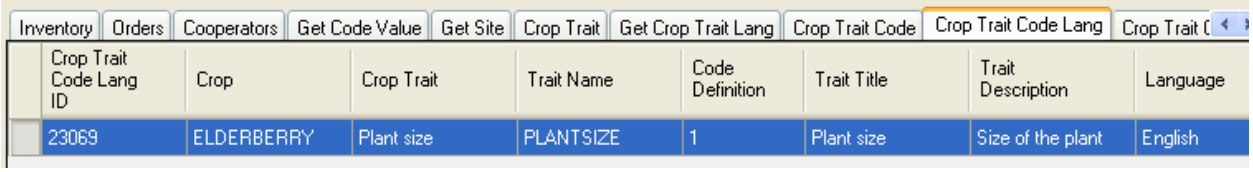
- Crop
- Crop Trait
- Code Definition
- Language

Before:





After:



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

old?

Inventory | Orders | Cooperators | Get Code Value | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Code | Crop Trait Code Lang | Crop Trait Observa

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)

correct?

Crop | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Code | Crop Trait Code Lang | Crop Trait Observation | Source Descriptor | Source Descriptor Cc

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
23069	ELDERBERRY	PLANTSIZE	PLANTSIZE	1	Plant size	Size of the plant	English	Very short	(<1.3 meters)
23070	ELDERBERRY	PLANTSIZE	PLANTSIZE	2	Plant size	Size of the plant	English	Short	(1.3 --1.5 meters)
23071	ELDERBERRY	PLANTSIZE	PLANTSIZE	3	Plant size	Size of the plant	English	Intermediate	(1.6 --1.8 meters)
23072	ELDERBERRY	PLANTSIZE	PLANTSIZE	4	Plant size	Size of the plant	English	Tall	(1.9 -- 2.1 meters)
23073	ELDERBERRY	PLANTSIZE	PLANTSIZE	5	Plant size	Size of the plant	English	Very tall	(> 2.1 meters)

ENG Version:

Crop | Get Site | Crop Trait | Get Crop Trait Lang | Crop Trait Code | Crop Trait Code Lang | Crop Trait Observation | Source Descriptor | Source Descriptor Cc

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
23069	ELDERBERRY	PLANTSIZE	PLANTSIZE	1			English	Very short	(<1.3 meters)
23070	ELDERBERRY	PLANTSIZE	PLANTSIZE	2			English	Short	(1.3 --1.5 meters)
23071	ELDERBERRY	PLANTSIZE	PLANTSIZE	3			English	Intermediate	(1.6 --1.8 meters)
23072	ELDERBERRY	PLANTSIZE	PLANTSIZE	4			English	Tall	(1.9 -- 2.1 meters)
23073	ELDERBERRY	PLANTSIZE	PLANTSIZE	5			English	Very tall	(> 2.1 meters)