

# Observations and Descriptors: CROP Dataviews

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There are several inter-related dataviews that handle the descriptor data. This document begins by focusing on recording your observation data. Later it explains the supporting tables and dataviews and their functions.

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 only need to use the **Observation** dataview in which to enter your evaluation results. However, this document explains the “family” of trait/observation dataviews.

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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.



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

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Code Definition	Trait Code	Numeric Value	String Value	Method
-1									

Lookup Picker v1.9.5.0

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

Filter ->

Intermediate  
Short  
Tall  
Very short  
Very tall

Show Only Choices  
Valid For This:  
 crop\_trait\_id

Before the save:

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



The gray **Trait Code** field is read-only ; its value will be supplied after the save.

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

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

### English vs. ENG

The same record above is shown below, but in a “different language.” In response to requests by some NPGS users familiar with GRIN, this additional language was established to facilitate the bulk loading of observations using codes for the descriptors. (The codes generally involve less characters.)

Notice in this example that the **Crop Trait** is now “PLANTSIZE” and the **Code Definition** is “2” rather than “Short.”

Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Code Definition	Trait Code	Numeric Value
10273297	mar 22702 rei	mar 22702 rei **	ELDERBERRY	PLANTSIZE	2	2	
-2							

### Attach Observations to the Accession or Inventory?

It is possible to associate an observation with a specific inventory record, which is generally the case. 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 associated with the accession’s system inventory record (type = “\*\*”)

## 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."

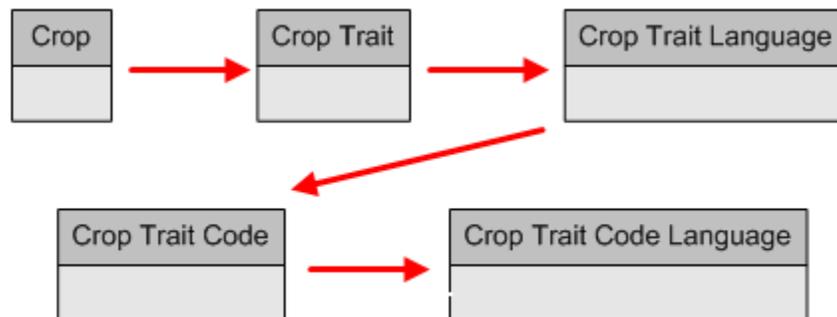
The following definitions of descriptors are from the International Board for Plant Genetic Resources (IBPGR):

- 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."

## Crops and Traits 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:

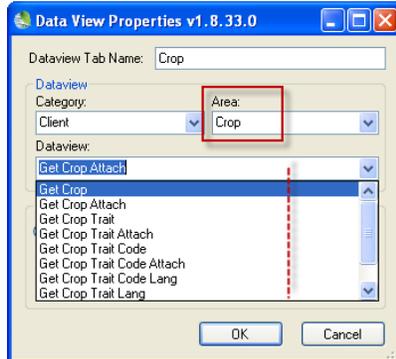


The **Crop** dataview is the "grand" parent dataview. That is, if you don't have the crop defined in the **Crop** dataview, you cannot enter in any of the traits related to the crop or the various possible code values that each trait can handle.

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.

## GRIN-Global Curator Tool Descriptor Data Views

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

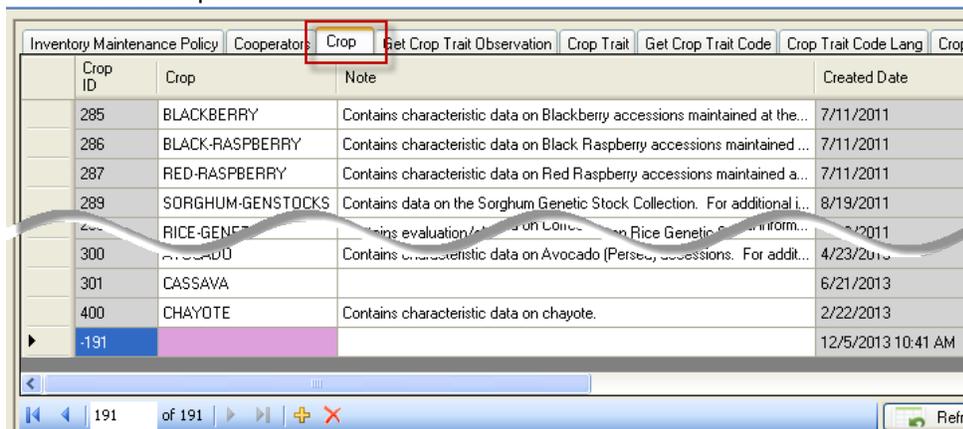
The hierarchy of the observation tables begins with the Crop table. Since certain characteristics transcend taxonomies, they are “grouped” under Crops. For example, the GRASS-WARMSEASON Crop includes *Acroceras macrum*, *Alloteropsis cimicina*, *Andropogon distachyos*, *Andropogon gayanus*, and many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

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-GENETIC	Contains evaluation/notes on Collection on Rice Genetic Stock Uniform...	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

Accessions	Inventory	Orders	Cooperators	Get Code Value	Crop	Get Site	Crop Trait	Get Crop Trait Lang	Crop Trait Code	Cro
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 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...	<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:

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...

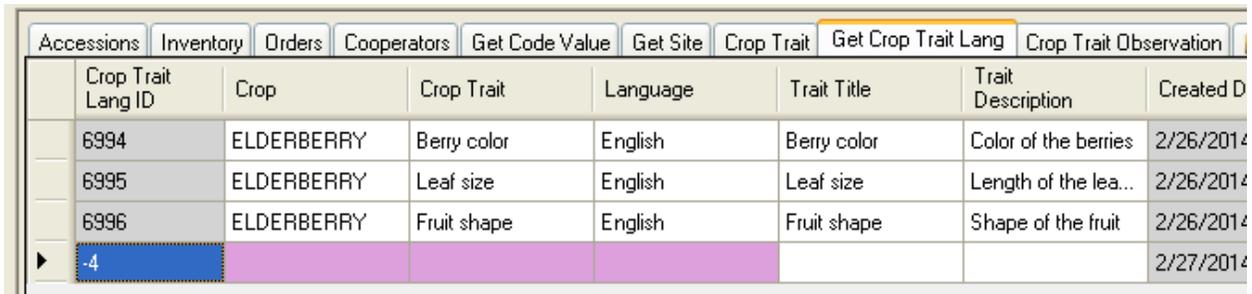
filled in after the corresponding Crop Trait Language record was saved

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

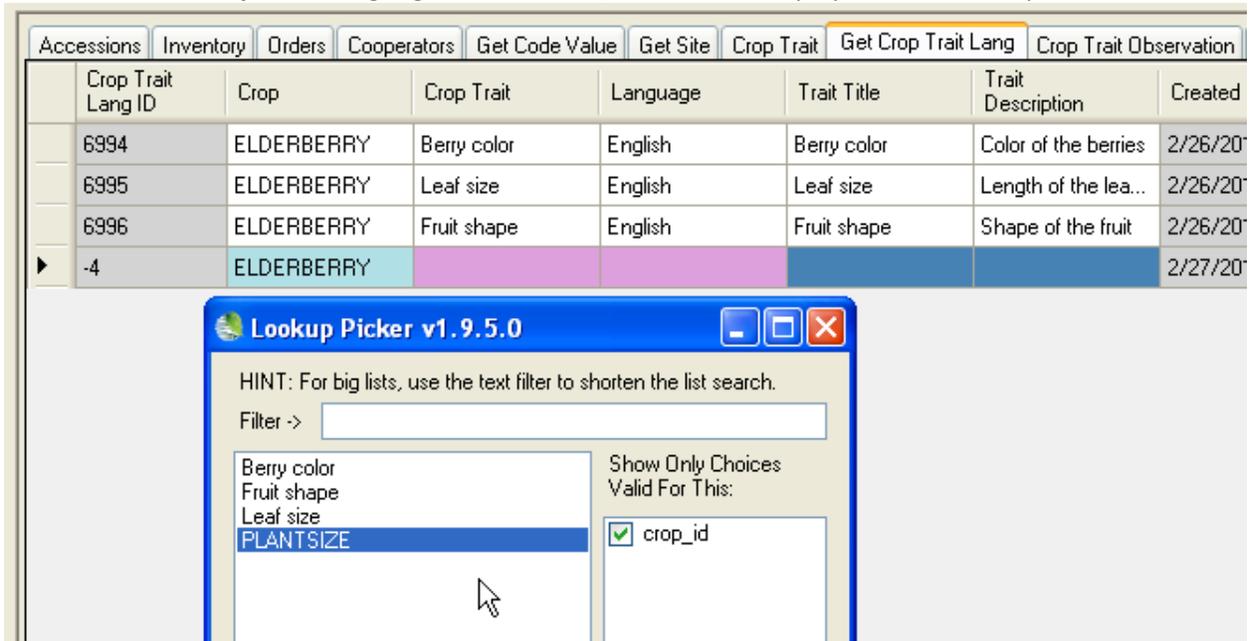
The **Crop Trait Language** dataview has three required fields:

- 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 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 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	PLANT SIZE	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 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 L
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:

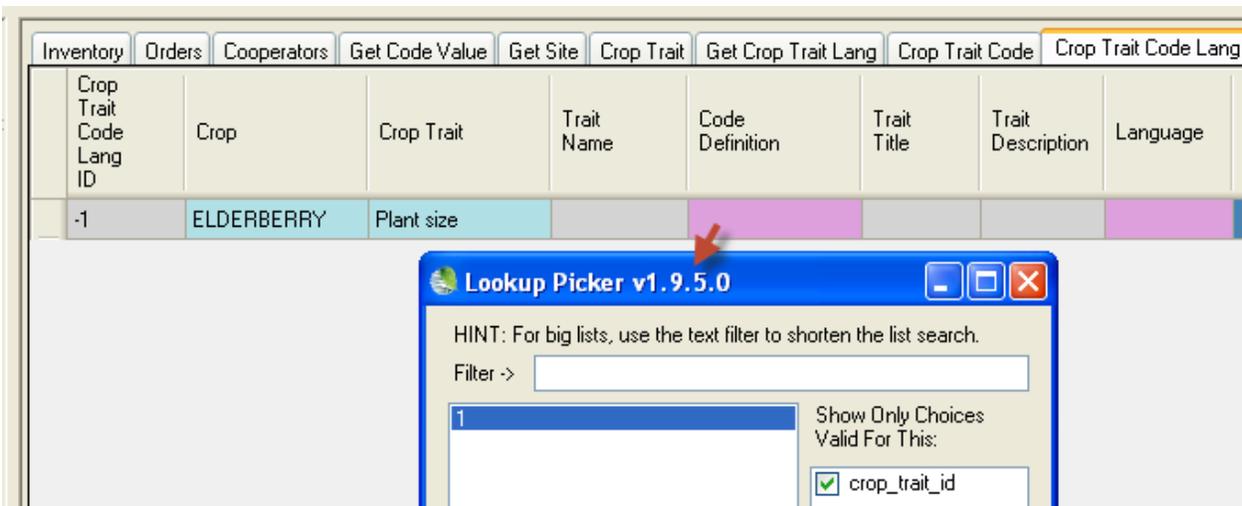
- Crop
- Crop Trait
- Code Definition
- Language

Before:



The screenshot shows a data table with the following columns: Crop Trait Code Lang ID, Crop, Crop Trait, Trait Name, Code Definition, Trait Title, Trait Description, Language, Code Title, and Code Description. The first row has a value of '-1' in the first column, and the other columns are empty.

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



The screenshot shows the same data table as above, but with a 'Lookup Picker v1.9.5.0' dialog box open. The dialog box has a 'Filter ->' field, a list box containing '1', and a 'Valid For This:' section with a checked checkbox for 'crop\_trait\_id'. A red arrow points to the 'Code Definition' column in the table, which is highlighted in pink.

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

After:



The screenshot shows the data table with the following columns: Crop Trait Code Lang ID, Crop, Crop Trait, Trait Name, Code Definition, Trait Title, Trait Description, Language, Code Title, and Code Description. The first row has values: 23069, ELDERBERRY, Plant size, PLANTSIZE, 1, Plant size, Size of the plant, and English.

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	1	Plant size	Size of the plant	English		

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

old?

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 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 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)

