

# Adding a crop, traits, & observations (documentation and self-paced exercise)

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Revision notes pertaining to this document are also summarized in the [Appendix](#). The Table of Contents which contains links to the document's sections

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## Overview

This document demonstrates the step-by-step process involved in recording evaluations (observations) in GRIN-Global. It goes beyond that in you also see how the crop, the traits, and the codes are created. Although creating new crops, traits, and codes is done relatively infrequently, by learning how to do so should prepare you for making observations.

A new elderberry crop is created as the example crop and then a trait (Leaf Color) is defined. As part of this example, the trait is a “coded trait” meaning it only accepts specific codes on a scale from 1 to 5. Finally, sample observations are recorded. The results are displayed in the Public Website.

Refer to other documents online which describe in detail how GG handles crops, descriptors, and observations. See:

[https://www.grin-global.org/docs/gg\\_observations\\_and\\_descriptors.docx](https://www.grin-global.org/docs/gg_observations_and_descriptors.docx) and  
[https://www.grin-global.org/docs/gg\\_coded\\_trait\\_examples.docx](https://www.grin-global.org/docs/gg_coded_trait_examples.docx)

The first document above is a complete reference and the second contains examples of actual crops and traits defined in the USDA database.

## This Document / Activity

Much text is included here, so I apologize up front for all of the reading!

This document assumes you will practice using the Curator Tool. To practice, you should already have created at least one accession, ideally one that has one or more physical inventory records.

The accession’s species doesn’t really matter for this exercise, but in a few pages the Crop Map concept will be discussed. Most likely you will need to create a **Taxonomy Crop Map** record for your accession’s species.

In this exercise, consider first making a few new accessions records and use *Sambucus nigra* for the species (Taxon field). If you use this species, then you can follow the directions as written. Spreadsheet is also provided using that species. Alternatively, you could use a different species – just remember to adjust the taxon as you do the activities!

If anything seems to be misleading, please contact me at [marty.reisinger@usda.gov](mailto:marty.reisinger@usda.gov) and I will address your comment/question.

--Marty Reisinger

## What is a “Crop”?

The term “crop” is generally used to group accessions of related taxa. But in GG, the term “Crop” is used even more broadly. It is used to group species under one crop name. This can be done for various purposes.



Remember that it is possible to have the same species in more than one crop.

For example, in the following example, USDA NPGS has two GRAPE Crops: GRAPE-DAVIS, and GRAPE-GENEVA. These two genebank sites maintain some overlapping grape species. For example, both sites maintain *Vitis vinifera* accessions and have included the species in their own respective crop.

Crop ID	Crop	Note	Created Date	Created By
273	GRAPE-DAVIS	Contains characteristic data on Grape accessions maintained at the National Clonal Germplasm Repository, Davis, CA. For additional information contact the Davis	5/6/2009 8:00 PM	SYSTEM, Gu
554	GRAPE-GENEVA	Grapes maintained at the Geneva site. Contact curator Joe Blyzick at grapemeister@vino.org	2/27/2021 5:39 ...	Reisinger, Ma
110	GRASS-COOLSEASON	Contains characteristic/evaluation data on grass	8/4/1994 8:09 AM	SYSTEM, Gu
244	GRASSES-MINOR-NC7	Contains characteristic data on minor grass accessions.	6/19/2005 8:00 ...	SYSTEM, Gu
436	GRASS-PEA		1/30/2018 5:41 ...	Schori, Melani

## Crop Record

The only required field for a new **Crop** record is the **Crop** field. However, the **Note** field is very useful, as the note displays on the Public Website.

Crop ID	Crop	Note	Owned By
418	ELDERBERRY	Contains evaluation data on Elderberry accessions as proposed by the Elderberry Crop Germplasm Committee. For more information, contact Daffy Crimp at the Plant Genetic Resources Conservation Unit in Geneva, NY 12345. Phone: (202) 123-3255. Email:	Reisinger, Martin A., Reisinger ...
-2			Reisinger, Martin A., Reisinger ...



The Crop record Note field can include HTML codes such as <br> which control the spacing on the website page. See example below – the left side is how the text displays on the GG page.

<b>ALFALFA</b>  Contains characteristic/evaluation data on Alfalfa (Medicago) accessions as proposed by the Alfalfa Crop Germplasm Committee (CGC). For additional information contact the curator:  Brian M. Irish, Ph.D. USDA-ARS, PGITRU Temperate-adapted Forage Legumes 24106 N. Bunn Road Prosser, WA 99350-9687 Phone: (509) 786-9316 Email: brian.irish@usda.gov	Contains characteristic/evaluation data on Alfalfa (Medicago) accessions as proposed by the Alfalfa Crop Germplasm Committee (CGC).            For additional information contact the curator:             Brian M. Irish, Ph.D.            USDA-ARS, PGITRU            Temperate-adapted Forage Legumes            24106 N. Bunn Road            Prosser, WA 99350-9687            Phone: ...  
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## Taxonomy Crop Map

Use the **Taxonomy Crop Map** table to create records mapping taxa to a crop.

To create *Crop Map* records:

1. Ensure the crop record exists. Use the search tool and the **Crop** dataview to verify:

Crop ID	Crop	Note	Created Date	Created By
273	GRAPE-DAVIS	Contains characteristic data on Grape accessions maintained at the National Clonal Germplasm Repository, Davis, CA. For additional information contact the Davis	5/6/2009 8:00 PM	SYSTEM, Gu
554	GRAPE-GENEVA	Grapes maintained at the Geneva site. Contact curator Joe Blyzick at grapemeister@vino.org	2/27/2021 5:39 ...	Reisinger, Ma
110	GRASS-COOLSEASON	Contains characteristic/evaluation data on grass	8/4/1994 8:09 AM	SYSTEM, Gu
244	GRASSES-MINOR-NC7	Contains characteristic data on minor grass accessions.	6/19/2005 8:00 ...	SYSTEM, Gu
436	GRASS-PEA		1/30/2018 5:41 ...	Schori, Melani

2. In the CT, open the **Taxonomy Crop Map** dataview:

The screenshot shows the 'Data View Properties' dialog box for the 'Taxonomy Crop Map' dataview. The 'Dataview Tab Name' is set to 'Taxonomy Crop Map'. Under the 'Dataview' section, the 'Category' is 'Client' and the 'Area' is 'Taxonomy'. The 'Dataview' dropdown is set to 'Taxonomy Crop Map'. Under the 'Viewer Style' section, the 'Spreadsheet' radio button is selected.

3. Add records and indicate the **Taxon**, **Crop**, and enter "N/A" for the **Alternate Crop Name** field. In this example the same species *S. nigra* is being connected to two crops:

Accession	Site	Cooperator	Inventory	Crop	Taxonomy Crop Map	Crop Trait	Crop Trait Code	Crop T
			Sambucus nigra					
			Taxonomy Crop Map ID	Taxon	Crop	Alternate Crop Name		
			25779	Sambucus nigra	ELDERBERRY	N/A		
			26121	Sambucus nigra	MAR-ELDER-NOV	N/A		

## Elderberry Crop Exercise

In this exercise, you will create a crop.

To simplify the instructions, assume that everyone is making their own version of an ELDERBERRY crop. For this exercise, follow the steps in the following pages, but whenever it states the crop is ELDERBERRY, **replace ELDERBERRY with ELDERBERRY-XXX, where xxx are your initials.** For example, if I were to create a new crop, I would call mine **ELDERBERRY-MAR.**



Crop names are not required to be in uppercase, but historically in the legacy GRIN system, the crop names were all in uppercase.

## Create a New Crop



Practice! **Create a new crop**

Open the Crop dataview.

The **Crop** (name) should be **ELDERBERRY-XXX** (XXX as explained above.)

The **Note** can be any text you desire. Remember that this text will be displayed on the Public Website, as shown below.

### Public Website | Descriptors

#### ALFALFA

Contains characteristic/evaluation data on Alfalfa (Medicago) accessions as proposed by the Alfalfa Crop Germplasm Committee (CGC).

For additional information contact the curator:

Brian M. Irish, Ph.D.  
USDA-ARS, PGITRU  
Temperate-adapted Forage Legumes  
24106 N. Bunn Road  
Prosser, WA 99350-9687  
Phone: (509) 786-9316  
Email: brian.irish@usda.gov



## Update your Crop Lookup table.

Lookup Table Loader v1.9.9.4

Click any Load button (or the Load All button) to begin loading...

Resource Demand:  Low  Med  High

Lookup Table	Status	Action
Cooperator Group Lookup	Green	Update
Cooperator Lookup	Green	Update
<b>Crop Lookup</b>	Green	Update
Crop Trait Code Lookup	Green	Update
Crop Trait Lookup	Green	Update
Exploration Lookup	Green	Update
Genetic Annotation Lookup	Green	Update
Genetic Marker Lookup	Green	Update

Other Options:

- Alternating row color...
- Remember Row Filters
- Prompt to Clear All Rows Hidden

Data Transmission Options:

Max rows allowed: 2000

Query Paging Size: 1000

Lookup Table Options:

- Warn about Lookup Table Updates
- Lookup Table Maintenance

Data Import/Export Options:

- Strip Special Characters On Export
- Strip Special Characters On Import

Save User Settings Now

Connected to: https://training.ars-grin.gov/GRINGlobal/GUI.aspx

The Elderberry Crop record as shown in the CT (below). Notice the ELDERBERRY Crop item in the left List Panel. Eventually, any traits defined for ELDERBERRY will automatically be listed under the **Crop** item in the List Panel, but since none have been defined yet, none are listed.

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Obsv...
Crop ID	Crop	Note	Created Date	Created By		
430	ELDERBERRY	Contains evaluation data on Elderberry accessions as proposed by the Elderberry Crop Gemplasm Committee. For more information, contact Daffy Crimp at the Plant Genetic Resources Conservation Unit in Geneva, NY 12345. Phone: (202) 123-3255. Email: alister.grumbee@ars.usda.gov	1/5/2018 5:41 PM	Reisinger, Martin ...		



Practice! Create a **Taxonomy Crop Map record** for your new crop. What taxa should you map to your new crop? Earlier I had suggested to use accessions with the species *Sambucus nigra*, but what accessions do you currently have in the database? What are their taxa? For this exercise, use the taxon that you are using for *your* accessions.

Review “your” taxa – and then map that taxa to your new crop.

Accessions	Get Accession Source	Get Accession Source Cooperator	Inventory	Get Order Request	Get Crop Trait	Get Crop Trait Lang	C
Accession ID	Digital Object Identifier	Accession Prefix	Accession Number	Accession Suffix	Taxon		
-1					Sambucus nigra		



The various species of *Sambucus* are commonly called elder or elderberry. You could make some new accessions specifically for this exercise, and use *Sambucus nigra* for the accession's Taxon field.

When you create the **Taxonomy Crop Map** record for your new crop, be sure to set up the record similar to the examples under [Crop Map](#). Use the Taxonomy Crop Map dataview which is under the Taxonomy area.

## Crop Traits



A spreadsheet with ELDERBERRY data to be used with this lesson is at <https://www.grin-global.org/files/elderberry.xlsx>

You will be directed to practice shortly. This spreadsheet will save you some typing. In the meantime, read on.

Shown here is a spreadsheet used to create a **Crop Trait** record:

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length	Numeric Format	Is Archived?
1	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	Y	Morphological descriptors	Alpha/numeric descriptor	Y	1		N

Four fields are required (look at the 2<sup>nd</sup> record below; for this example, ignore the first record which is an existing record already in the database):

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length
-1	ELDERBERRY	LEAFCOLOR			<input checked="" type="checkbox"/>	Morphologi...	Alpha/numeric ...	<input checked="" type="checkbox"/>	1
-2					<input type="checkbox"/>	[Null]	[Null]	<input type="checkbox"/>	

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

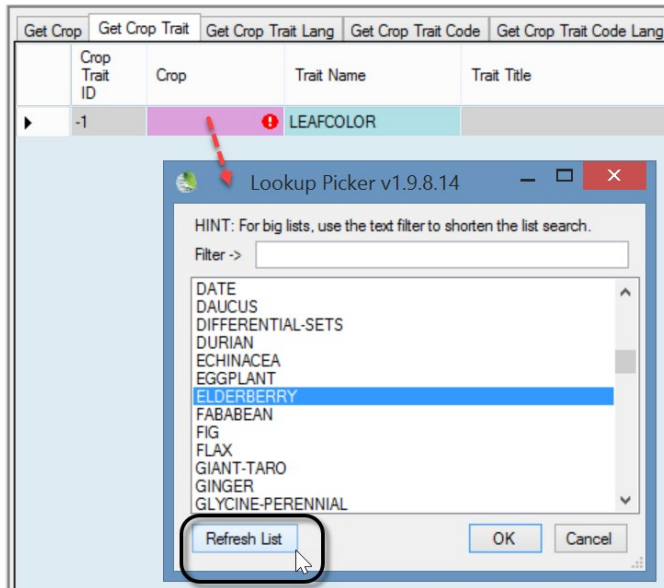
If you create the trait before the Crop lookup table has updated, you will receive an error:

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?
-1	ELDERBERRY	LEAFCOLOR			<input checked="" type="checkbox"/>

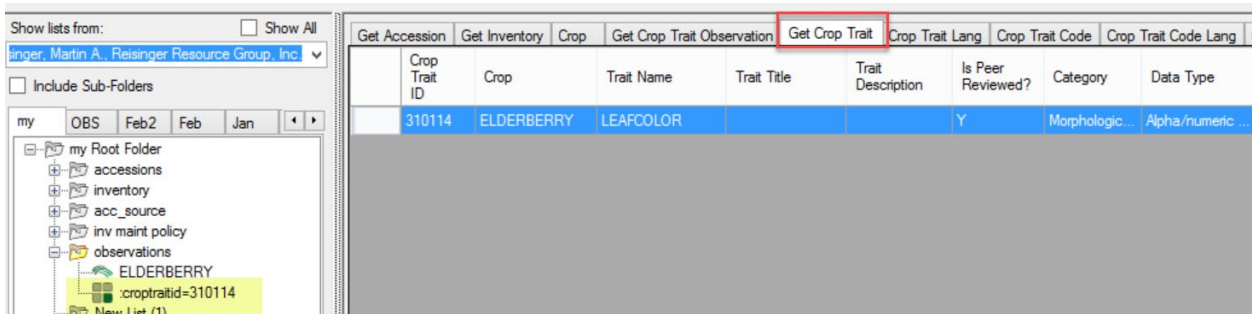
Could not find lookup value: ELDERBERRY



Refresh the lookup table and select ELDERBERRY(-XXX):



Until the Crop Trait gets its **Trait Title** and **Trait Description** fields (via the **Crop Trait Lang** dataview), the list item displays as it does below – :croptraitid=crop trait record ID



GG uses “lang” tables to provide the Titles and Descriptions for traits and codes. There are two separate tables, **Crop Trait Lang**, and **Crop Trait Code Lang**. After entering the trait(s), you must enter the **Trait Titles** and **Trait Descriptions** in the **Crop Trait Lang** table.



Practice! **Adding traits**

A spreadsheet with ELDERBERRY data to be used with this lesson is at

<https://www.grin-global.org/files/elderberry.xlsx>



Create several *traits* for your ELDERBERRY-XXX crop. Use the **Trait** tab in the spreadsheet provided above.

Crop Trait ID	Crop	Trait Name	Trait Title	Trait Description	Is Peer Reviewed?	Category	Data Type	Is Coded?
2	ELDERBERRY	LEAFCOLOR			Y	Morphological descriptors	Alpha/numeric descriptor	Y
3	ELDERBERRY	PLANTSIZE			Y	Morphological descriptors	Alpha/numeric descriptor	Y
4	ELDERBERRY	ANTIOXIDANTS			Y	Morphological descriptors	Alpha/numeric descriptor	Y



Remember to *always* include the ID column when dragging data from Excel to the CT. The cells below the heading remain empty when adding new records to the database. When updating records, the IDs must be included.

### Crop Trait Lang

Shown here is a spreadsheet used to create a **Crop Trait Lang** record:

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description
2	ELDERBERRY	LEAFCOLOR	English	Mature Leaf Color	Color of the leaf at 60 - 90 days

The Curator Tool is showing the required fields. Notice that the record is displaying an error – the **Crop Trait** field shows the error indicator:

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Obsen
Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description	
-1	ELDERBERRY		English	Mature Leaf Color	Color of the leaf at 60 - 90 days	

Could not find lookup value: LEAFCOLOR

This error often happens because the Lookup Table for **Crop Trait** hasn't been updated yet. Click in the **Crop Trait** field and then refresh the trait list; select **LEAFCOLOR**:

Lookup Picker v1.9.8.14

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

Filter -> [ ]

LEAFCOLOR

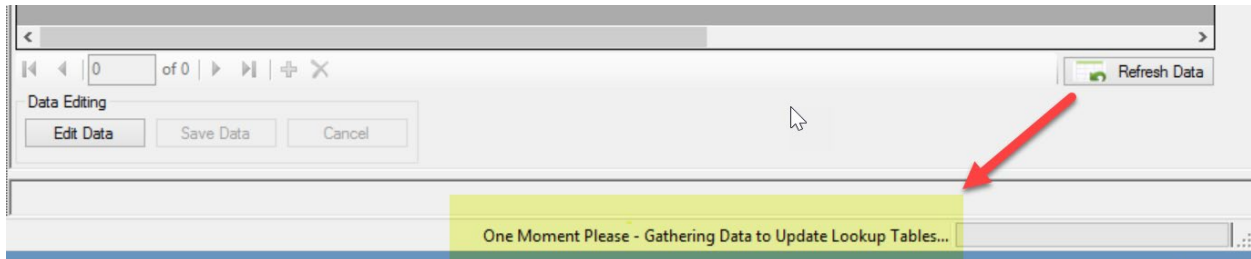
Show Only Choices Valid For This:

crop\_id

Refresh List

OK Cancel

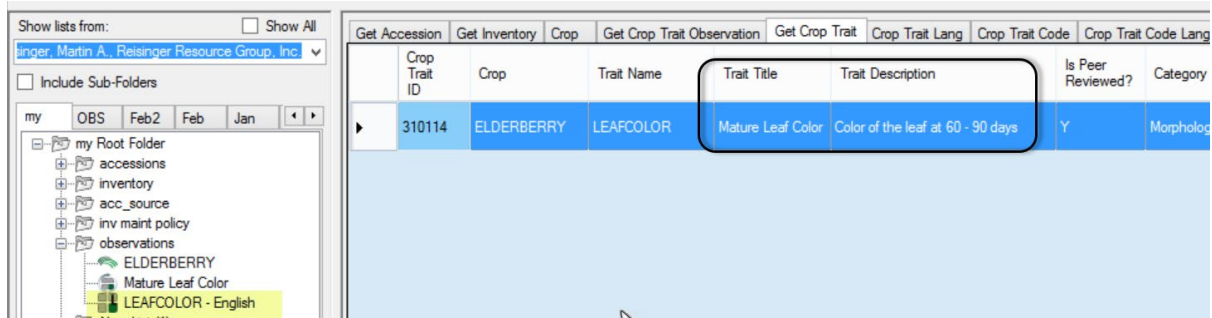
Alternatively, in the datagrid you could have clicked the **Refresh Data** button and waited for the lookups to update:



The drag and drop (or the manual inputting of the record) will then work properly and you can save the new **Crop Trait Lang** record:

Crop Trait Lang ID	Crop	Crop Trait	Language	Trait Title	Trait Description
-1	ELDERBERRY	LEAFCOLOR	English	Mature Leaf Color	Color of the leaf at 60 - 90 days

Previously the trait list item reflected the record ID number (see [croptraitid](#)). After the language record (**Crop Trait Lang**) is saved, that item indicator will reflect the trait name and the language. The **Trait Title** and **Trait Description** will be filled as well:



### Practice!

Create several **Crop Trait Lang** records. Use the sample data provided on the online spreadsheet, using the **Crop Trait Lang** tab.

As mentioned earlier, GG uses “lang” tables to provide the Titles and Descriptions for traits and codes. There are two separate tables, **Crop Trait Lang**, and **Crop Trait Code Lang**. After entering the trait(s), one must enter the **Trait Titles** and **Trait Descriptions** in the **Crop Trait Lang** table.

## Crop Trait Code

Three fields are required when creating a new **Crop Trait Code** record – the **Crop**, the **Trait**, and the **Code**:

Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description
-1							
1	ELDERBERRY	LEAFCOLOR	Mature Leaf Color		1	1 (1 = LIGHT GREEN, 5 = DARK GREEN)	Very Light Green
2	ELDERBERRY	LEAFCOLOR	Mature Leaf Color		2	2 (1 = LIGHT GREEN, 5 = DARK GREEN)	Light Green
3	ELDERBERRY	LEAFCOLOR	Mature Leaf Color		3	3 (1 = LIGHT GREEN, 5 = DARK GREEN)	Medium Green
4	ELDERBERRY	LEAFCOLOR	Mature Leaf Color		4	4 (1 = LIGHT GREEN, 5 = DARK GREEN)	Darker than Medium
5	ELDERBERRY	LEAFCOLOR	Mature Leaf Color		5	5 (1 = LIGHT GREEN, 5 = DARK GREEN)	Dark Green

In the spreadsheet image above, also shown are the **Code Titles** and **Code Descriptions**. However, these fields are not involved yet. But having them here helps with your understanding of the meaning of the actual code values.

When using the Drag and Drop method to create new code records, you don't include the **Code Title** and **Code Description** fields. In fact, you can't here, because these two fields will be defined later in a separate dataview, the **Crop Trait Code Lang** dataview. The Code Title and Description fields were not shown in the CT's **Crop Trait Code** dataview image above, but scrolling to the right, the screen below shows that both of those fields are Read-only:

Crop Trait	Trait Description	Trait Code	Code Title	Code Description

After the drag, but before the records are saved, this is how the new records display:

Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title
-2	ELDERBERRY		Mature Leaf Color		1	
-3	ELDERBERRY		Mature Leaf Color		2	
-4	ELDERBERRY		Mature Leaf Color		3	
-5	ELDERBERRY		Mature Leaf Color		4	
-6	ELDERBERRY		Mature Leaf Color		5	

However, if, when you attempted to save, you received the following error, then you need to update the **Crop Trait** lookup table (as we did earlier when updating the Crop Trait Code Lang – see [Create Crop Trait Lang](#)):

Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title
-1	ELDERBERRY		Mature Leaf Color			
-2	ELDERBERRY		Mature Leaf Color		2	
-3	ELDERBERRY		Mature Leaf Color		3	
-4	ELDERBERRY		Mature Leaf Color		4	
-5	ELDERBERRY		Mature Leaf Color		5	

If you refresh the first record's trait, you can then use Ctrl-D to copy down (similar to the copy down command used in Excel), to copy the trait for all of the new records. Notice in the second screen below (after the save) that the **Trait Name** and **Trait Description** have filled in as well:

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Observ
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title
-1	ELDERBERRY		Mature Leaf Color		1	
-2	ELDERBERRY		Mature Leaf Colo!		2	
-3	ELDERBERRY		Mature Leaf Colo!		3	
-4	ELDERBERRY		Mature Leaf Colo!		4	
-5	ELDERBERRY		Mature Leaf Colo!		5	

Five codes successfully added:

Get Inventory	Crop	Get Crop Trait Observation	Get Crop Trait	Crop Trait Lang	Crop Trait Code	Crop Trait Code Lang	Crop Attach	Crop Trait Attach	Method	Get Site
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title	Code Description			
24960	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	1					
24961	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	2					
24962	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	3					
24963	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	4					
24964	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90 days	5					



Practice! Add **Trait Titles** and **Descriptions**, using the **Crop Trait Lang** dataview.

Use the **Crop Trait Lang** tab of the Excel spreadsheet for your data source.

### Crop Trait Code Lang

When creating the **Crop Trait Code Lang** records, four fields are *required*:

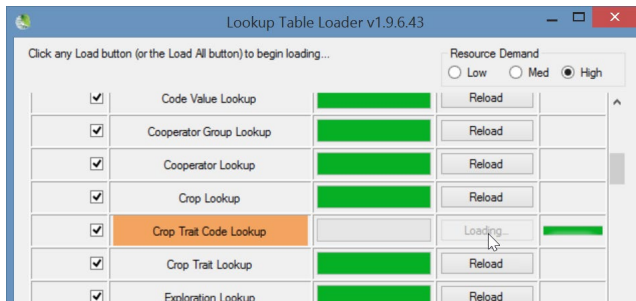
- **Crop**
- **Crop Trait**
- **Code Definition**
- **Language**

However, the purpose of this dataview is to add the **Code Titles** and **Code Descriptions**, so you really enter six fields.

Assuming you just completed the step to add **Crop Trait Codes**, you need to update the respective lookup, else you will get the following error when you attempt to add language records:

Get Inventory	Crop	Get Crop Trait Observation	Get Crop Trait	Crop Trait Lang	Crop Trait Code	Crop Trait Code Lang	Crop Attach	Crop Trait Attach	Method	Get Site
Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description	
-3	ELDERBE...	Mature Leaf Color					English	1 (1 = LIGHT GREE...	Very Light Green	
-4	ELDERBE...	Mature Leaf Color					English	2 (1 = LIGHT GREE...	Light Green	
-5	ELDERBE...	Mature Leaf Color					English	3 (1 = LIGHT GREE...	Medium Green	
-6	ELDERBE...	Mature Leaf Color					English	4 (1 = LIGHT GREE...	Darker than Medium	
-7	ELDERBE...	Mature Leaf Color					English	5 (1 = LIGHT GREE...	Dark Green	

Therefore, launch the Lookup Table Loader and update the **Crop Trait Code Lookup**:



or use the **Refresh Data** button below the grid:

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Obsen
Crop Trait Code ID	Crop	Trait Name	Crop Trait	Trait Description	Trait Code	Code Title
25108	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90	1	
25109	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90	2	
25110	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90	3	
25111	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90	4	
25112	ELDERBERRY	LEAFCOLOR	Mature Leaf Color	Color of the leaf at 60 - 90	5	

Get Inventory	Crop	Get Crop Trait Observation	Get Crop Trait	Crop Trait Lang	Crop Trait Code	Crop Trait Code Lang	Crop Attach	Crop Trait Attach	Method	Get Site
Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description	
-1										

The following Excel shows illustrates the spreadsheet ready for a drag and drop to the Curator Tool:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
1	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	1			English	1 (1 = LIGHT GREEN, 5 = DARK GREEN)	Very Light Green
2	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	2			English	2 (1 = LIGHT GREEN, 5 = DARK GREEN)	Light Green
3	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	3			English	3 (1 = LIGHT GREEN, 5 = DARK GREEN)	Medium Green
4	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	4			English	4 (1 = LIGHT GREEN, 5 = DARK GREEN)	Darker than Medium
5	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	5			English	5 (1 = LIGHT GREEN, 5 = DARK GREEN)	Dark Green



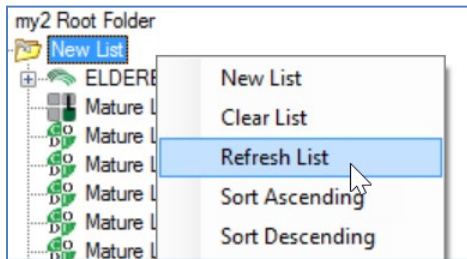
The following screen illustrates the CT before the save:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
-1	ELDERBERRY	Mature Leaf Color		1			English	1 (1 = LIGHT GREEN, 5 = DARK G...	Very Light Green
-2	ELDERBERRY	Mature Leaf Color		2			English	2 (1 = LIGHT GREEN, 5 = DARK G...	Light Green
-3	ELDERBERRY	Mature Leaf Color		3			English	3 (1 = LIGHT GREEN, 5 = DARK G...	Medium Green
-4	ELDERBERRY	Mature Leaf Color		4			English	4 (1 = LIGHT GREEN, 5 = DARK G...	Darker than Medium Green
-5	ELDERBERRY	Mature Leaf Color		5			English	5 (1 = LIGHT GREEN, 5 = DARK G...	Dark Green

and this after:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
24928	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	1	Mature Le...	Color of the leaf at 00	English	1 (1 = LIGHT GREEN,	
24929	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	2	Mature Le...	Color of the leaf at 00	English	2 (1 = LIGHT GREEN,	
24930	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	3	Mature Le...	Color of the leaf at 00	English	3 (1 = LIGHT GREEN,	
24931	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	4	Mature Le...	Color of the leaf at 00	English	4 (1 = LIGHT GREEN,	
24932	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	5	Mature Le...	Color of the leaf at 00	English	5 (1 = LIGHT GREEN,	

In the List Panel, right-click and Refresh your list:



Ideally, the final result:

Crop Trait Code Lang ID	Crop	Crop Trait	Trait Name	Code Definition	Trait Title	Trait Description	Language	Code Title	Code Description
24928	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	1 (1 = LIGHT...	Mature Le...	Color of the leaf at 00	English	1 (1 = LIGHT GREEN,	
24929	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	2 (1 = LIGHT...	Mature Le...	Color of the leaf at 00	English	2 (1 = LIGHT GREEN,	
24930	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	3 (1 = LIGHT...	Mature Le...	Color of the leaf at 00	English	3 (1 = LIGHT GREEN,	
24931	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	4 (1 = LIGHT...	Mature Le...	Color of the leaf at 00	English	4 (1 = LIGHT GREEN,	
24932	ELDERBERRY	Mature Leaf Color	LEAFCOLOR	5 (1 = LIGHT...	Mature Le...	Color of the leaf at 00	English	5 (1 = LIGHT GREEN,	

At this point, you should have defined:

- the crop ELDERBERRY-XXX
- one trait, LEAFCOLOR.
- LEAFCOLOR is a coded trait - five codes have been defined for it

Typically, additional traits and codes would be defined (and could have been at the same time when we created the LEAFCOLOR trait and codes). For simplicity, we won't here, but instead move on to recording an observation using this new crop and trait.

## Observations

The Observation dataview expects certain fields to be filled in:

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Observation Data	Get Method			
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is
-1										

Note that this isn't the complete dataview – it is wider than what is shown here and includes other fields. The main fields that must be entered are the four required fields (in pink) and *only one* of the three Value fields (highlighted here in yellow).

Continuing with our example, our trait is a coded trait, so we will be filling in the **Coded Value** field.

So far in this database we know there aren't any accessions/inventory that have been observed for this new trait since we just created it. Notice in the **Crop Trait Observation** dataview above, we will be selecting an inventory record, not an accession. Why? Accession is a gray read-only field. Observations are typically recorded at the inventory (lot) level.

(When we want to record an observation for the accession, we will use the accession's system inventory record. These records always have the \*\* for their type code.)

In Edit mode:

Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Observation Data	Get Method			
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value	Method	Is
-1										

After we fill in the inventory, crop, trait, and a code:

Cooperators	Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Observation Data	
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text
11340284	MR 10518 ...	MR 10518 RRG...	ELDERBERRY	Mature Leaf Color	3	3		

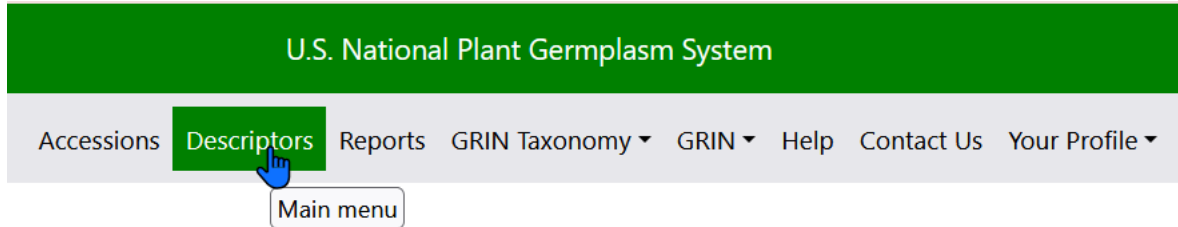


After we refresh the dataview:

Cooperators	Get Crop	Get Crop Trait	Get Crop Trait Lang	Get Crop Trait Code	Get Crop Trait Code Lang	Get Crop Trait Observation	Get Crop Trait Observation Dat	
Crop Trait Observation ID	Accession	Inventory	Crop	Crop Trait	Coded Value	Trait Code	Numeric Value	Text Value
11340284	MR 10518...	MR 10518 RRG...	ELDERBERRY	Mature Leaf Color	3 (1 = LIGHT GREEN, 5 = D...	3		

Refresh Data

To search for a crop's observations, start at **Descriptors** on the Public Website menu:



Step 1 – Choose Crop

Filter dropdown  Filter dropdown by

MAR-ELDERBERRY  
MAR-ELDER-NOV

Start the search:

MANGO  
MAR-ELDERBERRY  
MAR-ELDER-NOV

Click for crop detail page.

Step 2 – Choose descriptor(s)

+ Choose all    × Remove all

Morphological descriptors

Fruit color

Alternatively, a search for the accession, but looking for the observations:

Simple Search List Search Advanced Search Results

If your results aren't what you expected, try using the Advanced Search tab and filling in more information.  
Your query included: **All accessions** mar 36 rrg

View Observation Data

Selected item(s) below: Add to Cart View Accession Details

Additional Info Show 10 rows Copy Excel

Showing 1 to 1 of 1 entries

ACCESSION NAME TAXONOMY

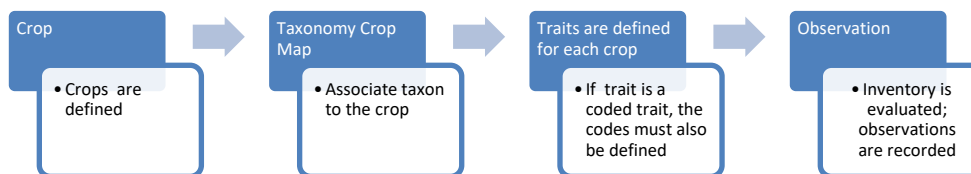


Practice! Add some observations for your inventory.

The spreadsheet has sample observations in the **Observation** tab.

## Points to Remember

- Before a single observation for an accession can be recorded, the curator / genebank staff must define the crop. They must also create a Taxonomy Crop Map record to map the taxon to the crop. The traits and any codes used with specific traits must also be defined.



- The Trait & Code Titles and Descriptions are added also, but in the respective Trait and Code **Lang** dataviews.
- After an observation is recorded for an accession (via inventory), GRIN-Global remembers the Crop for that taxon, so when another observation record is being recorded, GG checks to ensure that the Crop matches taxonomy.
- It is possible to have a species be used in more than one crop. For example, in NPGS, *Vitis vinifera* is in two crops. (The Taxonomy Crop Map makes this possible.) Refer to the document **Observations and Descriptors: CROP Dataviews** online at <https://www.grin->

[global.org/docs/gg\\_observations\\_and\\_descriptors.docx](http://global.org/docs/gg_observations_and_descriptors.docx) for details on setting up the Crop Map records or as discussed earlier.



When recording an observation, it is not obvious which value type is valid: *Coded*, *Numeric*, or *Text*. When uncertain, use the Search Tool to look up the traits, or perhaps better yet, set up a folder with the crop in it. When the crop is selected in the List Panel, with the **Crop Trait** dataview active in the right panel, you can review the traits and determine what is expected – coded, numeric, or text value.

Crop	Trait Name	Trait Title	Is Peer Reviewed?	Category	Data Type	Is Coded?	Maximum Length	Numeric Format	N M
MAIZE	PRIMARY-RACE	Primary Race	Y	Taxonomic descri...	Alpha/numeric descriptor	Y	7		
MAIZE	SECONDARY-RACE	Secondary Race	Y	Taxonomic descri...	Alpha/numeric descriptor	Y	7		
MAIZE	EUROPEAN-CORNBORER1	European Com Borer...	Y	Insect descriptors	Alpha/numeric descriptor	Y	1		
MAIZE	EUROPEAN-CORNBORER2	European Com Borer...	Y	Insect descriptors	Alpha/numeric descriptor	Y	1		
MAIZE	DAYS-TO-SILK	Days to Silk	Y	Phenological des...	Numeric descriptor	N	4	##0	
MAIZE	DAYS-TO-POLLEN	Days to Pollen Shed	Y	Phenological des...	Numeric descriptor	N	4	##0	
MAIZE	CORE	Core Subset	Y	General information	Alpha/numeric descriptor	Y	1		
MAIZE	ETHNIC-GROUP	Ethnic Group	Y	General information	Alpha/numeric descriptor	N	30		
MAIZE	NODES-ABOVE-EAR	Node Number Above...	N	Morphological de...	Numeric descriptor	N	5	#0.#	
MAIZE	ECB2-SHANK	ECB2 Shank Damage	N	Insect descriptors	Numeric descriptor	N	6	#0.##	

Type of Observation	Data Type field	Is Coded? field
Text	Alpha/numeric descriptor	N
Numeric	Numeric descriptor	N
Coded	either Alpha or Numeric	Y

## Appendix: Document Change Notes

### – **November 10, 2023**

- updated PW screen captures
- minor wording changes

### – **February 27, 2021**

- additional material, especially on mapping

### – **August 6, 2020**

- included practice / exercise material

### – **March 1, 2020**

- included reference for Crop Map details