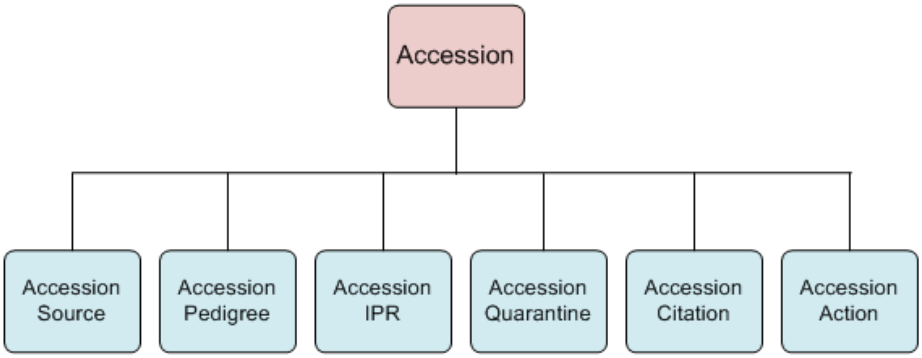
Accessions

Much of an accession's passport information is stored in various accession- related tables. In this section, we'll review accessions and explain the procedures for entering and updating accession data.

Topics

General Overview

The accession dataview primarily displays data stored in the accession table and the accession children tables. The accession data is stored in multiple related tables (not all are shown here):



The diagram does not show all of the Accession-related tables, nor does it show how all Inventory records are considered to be children of parent accession records. In order to create an inventory record, you must relate each inventory record to an existing accession record.

In GRIN-Global, the multicrop passport descriptors (MCPD) data, and other data, is distributed across multiple accession tables that are linked to each other. In contrast, inventory tables contain information about the physical germplasm, such as quantities available for distribution.

In the Curator Tool, many related dataviews have been designed for inputting and editing accession data stored in these tables. In fact, there are at least 10 accession-related dataviews. However, many of the tables' fields are optional and may never be used by some organizations. (GRIN-Global was designed to be flexible and accommodate the requirements of different organizations and genebanks.)

For more details on the various tables and fields, refer to the online GRIN-Global dictionary.

Schema Differences Between GG Version 1 and Later Versions

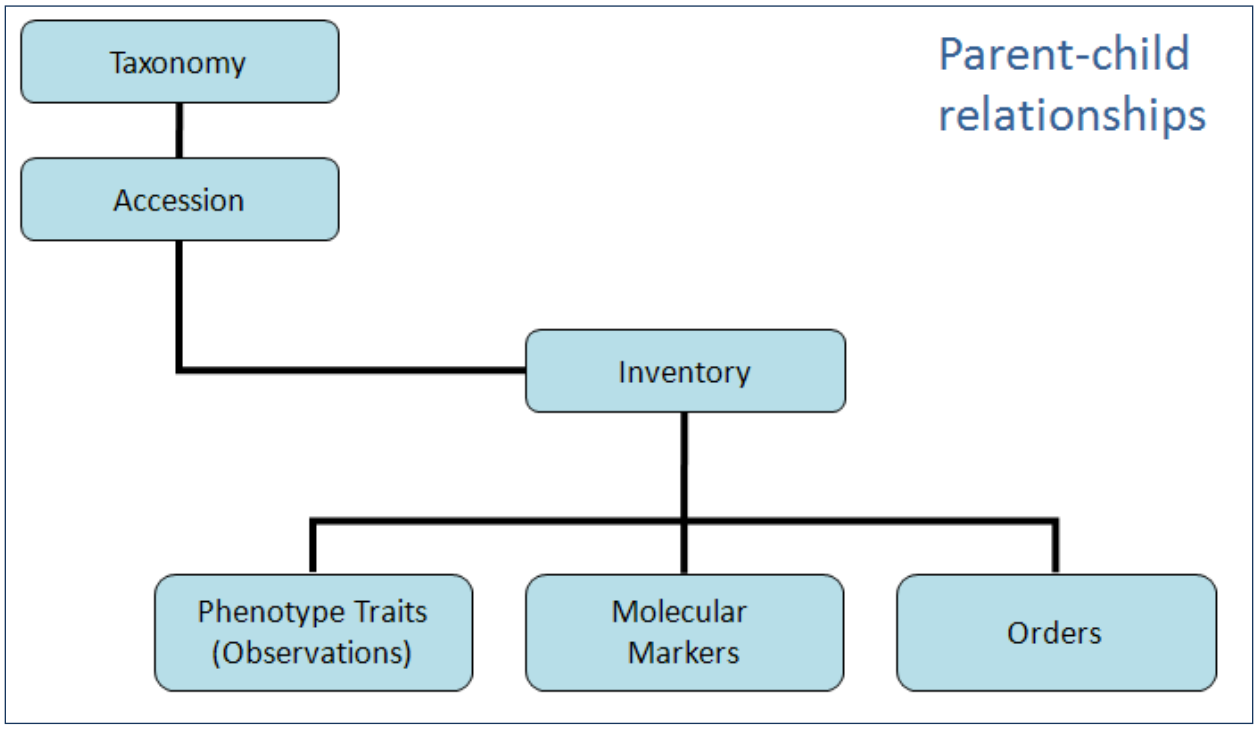
In GRIN-Global version 1.0, there is an accession_name table as well as an inventory_name table. Starting with the 1.5 schema, the accession and inventory *name* tables are merged into one table, taking advantage of the fact that every accession has at least one inventory record, a system-generated inventory record. A Name record can be associated with either the accession's system-generated inventory record, hence applying to the accession in general, or associated with a specific inventory record.

Accession Key and Required Fields

Typically, in many genebanks, the curator is required to first evaluate the passport data and then grow and observe the germplasm in order to determine if it is unique and whether it should be considered as a unique accession. Hence, an accession is typically assigned a local identifying number until a decision is made to assign it a permanent accession identifier.

For example, in the United States, the National Plant Germplasm System (NPGS) uses a code of "PI" for the prefix of the accession name for all accessions that are permanently assigned to the collection. (PI - *Plant Introduction* - is a term historically used by the NPGS.)

The following diagram illustrates the relationships between the primary GRIN-Global tables:



Reading from top down, the diagram is showing the dependencies and parent-child hierarchy among the data. For example, in order to input an accession, the database must first have the relevant taxonomic data. If the accession's taxon is *Helianthus tuberosus*, that taxon must be in the database first. When inputting the accession information, the GG user selects the taxon *Helianthus tuberosus*, from a list of

taxons, rather than enter it. This ensures that the taxonomic data is consistent and avoids typographical errors.

If the taxon is not in the database, then someone responsible for managing the organization's taxonomy must first add the taxonomy name(s) to their GRIN-Global database before the accession can be added.

How are Passport Descriptors Handled in the Curator Tool?

In GRIN-Global passport data is stored among several tables. In the GG Curator Tool , the group of Accession dataviews are used to view and edit the data.

Reviewing Existing Accessions

If an accession already exists in the database, you can use the Search Tool to find it. You can review the data within the search tool; however, If you intend to edit this data, you will need to display the record within the Curator Tool. Refer to the Curator Tool User Guide for detailed directions for searching for records and dragging them into the Curator Tool.

Using the Accession Wizard to Review Passport Data

In the CT, the simplest way to display or edit an accession's passport data is to select the accession record in the data grid and then start the accession wizard. Using the wizard, you can easily review the related accession dataviews where much of the passport data is stored. (Germplasm data is found via the Inventory dataviews.) The following table indicates where passport data is stored in GRIN-Global:

Data	GRIN-Global Dataview	Dataview Column Name
Institute Code, Breeding Institute Code, Donor Institute Code	Accession Name	Cooperator (a Cooperator can be a person or an organization)
Accession Number	Accession	Prefix, Number, and Suffix
Collecting Number, Accession Name, Donor Accession Number, Other Identification Numbers	Accession Inv Name	Plant Name
Common Crop Name	Accession IPR	IPR Crop Name
Genus and Species	Accession	Taxon
Species Authority, Subtaxa, Subtaxa Authority	Taxonomy_Species	Species Authority, etc.
Acquisition Date	Accession	Initial Received Date
Country of Origin	Accession Source	Geography (**Is Origin** field is checked)
Latitude, Longitude, Elevation	Accession Source	Latitude, Longitude, Elevation
Location of Collecting Site	Accession Source	Geography

Data	GRIN-Global Dataview	Dataview Column Name
Collecting Date	Accession Source	Source Date
Biological Status	Accession	Level of Improvement
Ancestral Data	Accession Pedigree	Female Accession, Male Accession…
Location of Safety Duplication Site	Accession	Backup Location 1, Backup Location 2
Type of Germplasm Storage	Inventory	Inventory Type
Remarks	Accession (& several child dataviews)	Note

Creating New Accessions

You can choose from various main approaches when creating new accession records:

Number of Accession Records	Use
one	Accession Wizard or the accession dataview
several	Accession Wizard (or one accession at a time via the accession dataview)
many	Drag and drop from a spreadsheet into the accession dataview

Using the *wizard* makes it possible to input data into the accession children tables when you create the new accession parent record. When using the Accession *dataview*, you will also need to manually select and choose from the other accession_ dataviews that handle any child accession records.

The significant advantage in using the "drag and drop" method is that you can add many accession records at one time. However, when bulk adding many accession records, you most likely will need to perform several additional drag and drop operations. (Since the accession data is spread across many tables, you will need to drag and drop data into the respective dataviews, using the parent accessions' primary keys as the connecting data.)

The three approaches (accession dataview, accession wizard, drag and drop many records from a spreadsheet) are explained below.

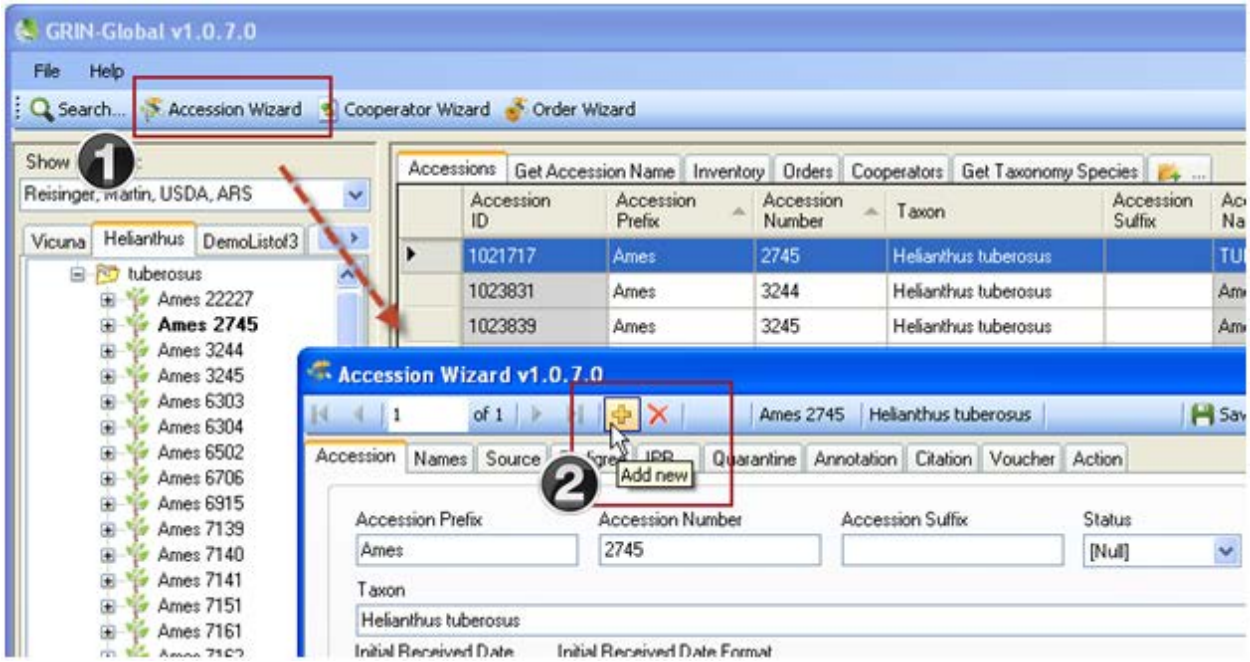
Create a new record using the Accession Dataview

General directions for adding any type of new record are included in the *Creating, Updating, and Deleting Records* section of the Curator Tool User Guide.

Create a new record using the Accession Wizard

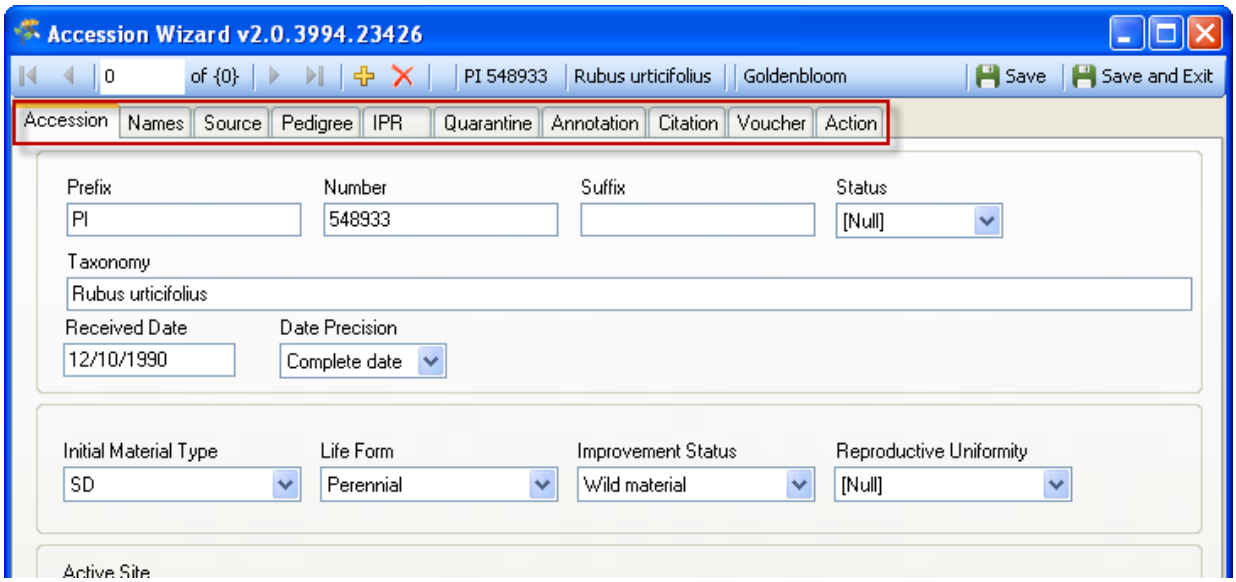
When *creating a new* record, it doesn't really matter which dataview you have open as the active dataview. To start the wizard, click the **Accession Wizard** button. When creating a new Accession

record, in the wizard screen, click the **Add New** button:

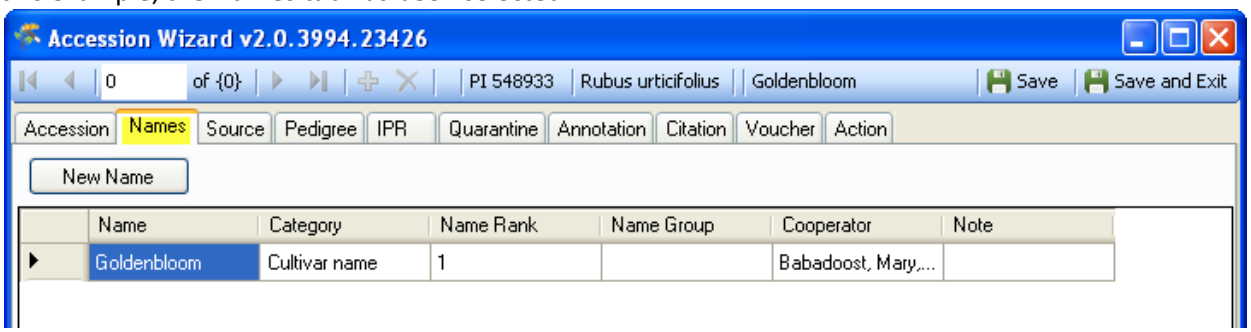


General Accession Wizard Concepts

After you click the Accession Wizard button on the main Curator Tool window , the **Accession** dataview displays in its own window. The accession wizard consists of 10 dataviews tabs; the tabs shown below illustrate this:



While using the wizard, you can click on any of the tabs to display that tab's corresponding dataview. In this example, the **Names** tab has been selected.



Saving the Data

In any window in which you enter data, in order to save the record, you must input data in the *required* fields' data. You do not need to complete every window, since they are dataviews to different tables.

When completing (or partially completing) a dataview, before proceeding to the next tab, click the **Save** button as you continue inputting in the wizard.

Use the **Save and Exit** button when you are finished using the wizard. (Since you can use the wizard to edit existing data, you can always return later and edit the data.)

The **Save and Exit** button will close the accession wizard and return to the Curator Tool, but first it will indicate that you were successful and also prompt you to add an item to the current list folder in the Curator Tool window. If you select **Cancel**, the database record will have been created, but no item pointing to it will be generated in the current list folder.

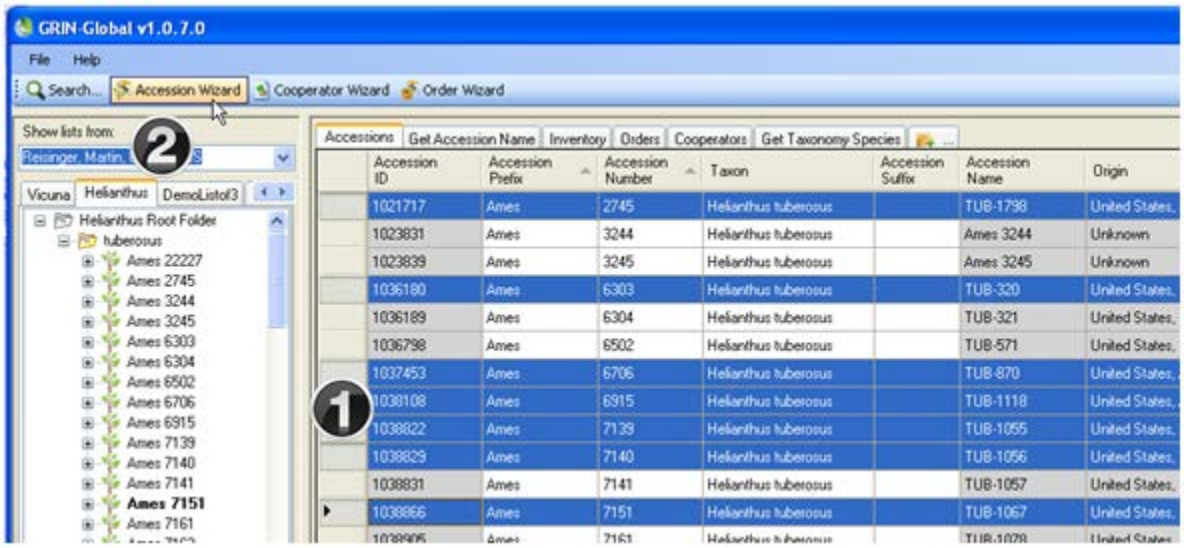
Modify Existing Accession Records

As in *creating* accession records, there are three main ways in which you can update existing records:

- Open the Accession dataview and edit an existing record
- Select existing records in the accession dataview and start the Accession Wizard
- Drag and drop data from a spreadsheet into the Curator Tool

If you wish to modify existing accession records, *before* starting the wizard, in the Data Grid, highlight the desired accession record (or multiple records) to be modified, then click the Accession Wizard

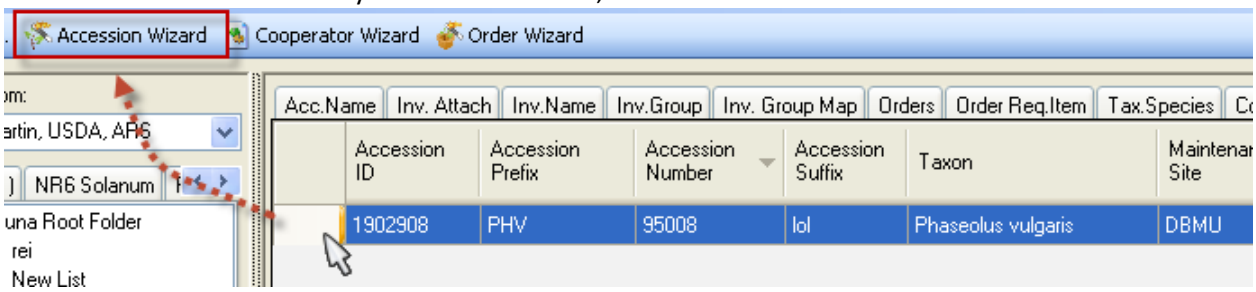
button.



Deleting Accession Records

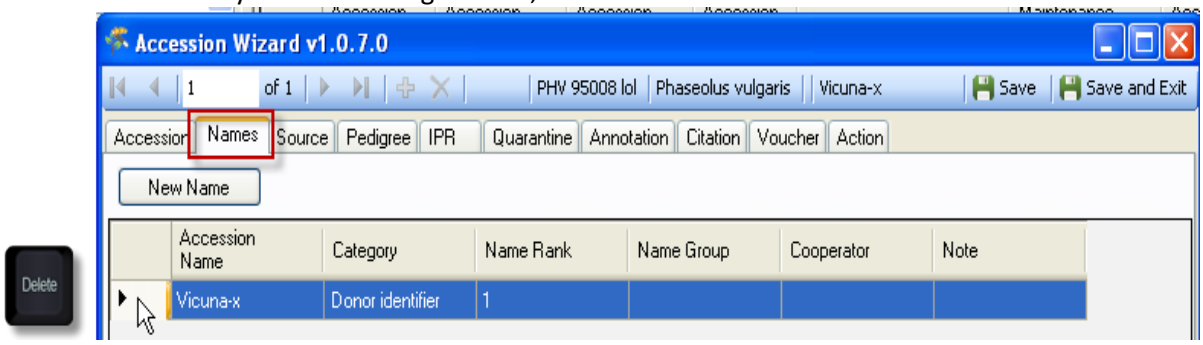
In a relational database where there are parent and children tables, the general principle is that a parent record cannot be deleted if it has any children records. In order to delete an Accession record, (which should be a rare occurrence), you must ensure that all of its children records are first deleted.

The Accession Wizard is useful for helping you to do this. First, select the Accession record in the Curator Tool Accession dataview that you intend to delete; click the Accession Wizard button:



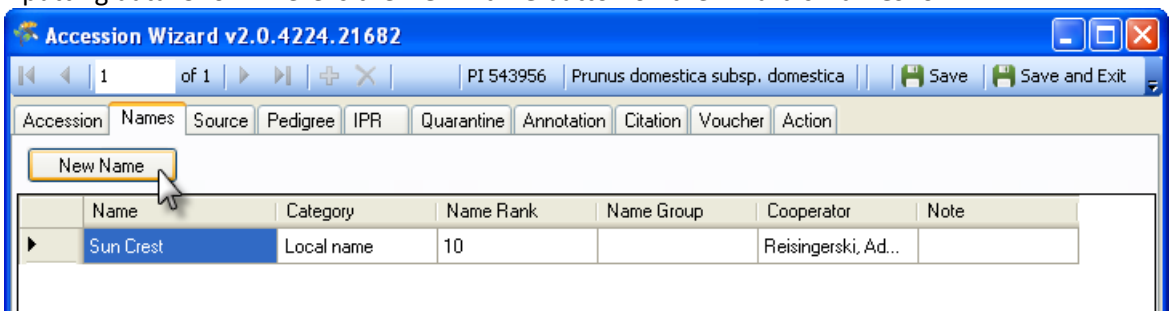
In the Accession Wizard, review for children rows. If the Accession has a child record, you can delete that record by selecting it and then clicking the keyboard's **Delete** key. In the example shown below, the Accession has a Name record; the user selected the row by clicking on the left margin; then the user

presses the **Delete** key. Before exiting this tab, the user needs to click the window's **Save** button:

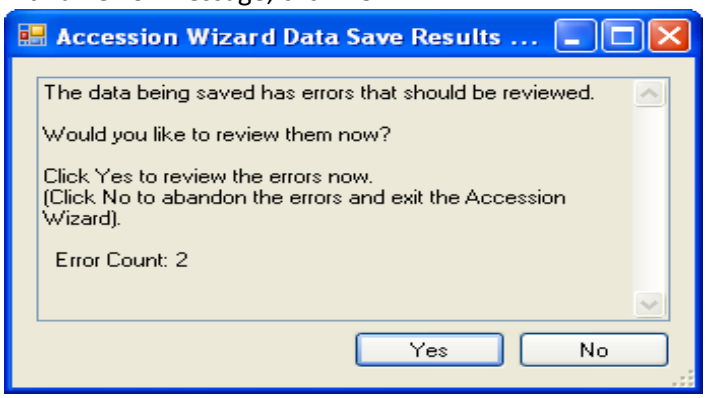


Subordinate Accession Dataviews

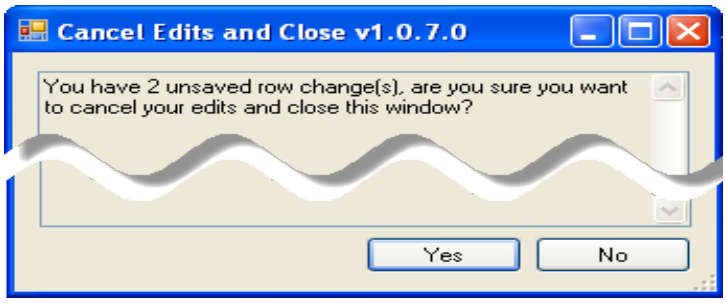
The subordinate (or "child") dataviews have their respective tabs. On each of these windows, there is a **New *dataview*** button. When clicked, the Curator Tool displays a new row on the dataview grid for inputting data. Shown here is the **New Name** button on the wizard's **Names** form.



In moving through the various subordinate Accession wizard windows, you may have clicked a **New** button without intending to do so. When you click on **Save and Exit**, you will be prompted with an error message; click **No**:



On the next window, click **Yes**:

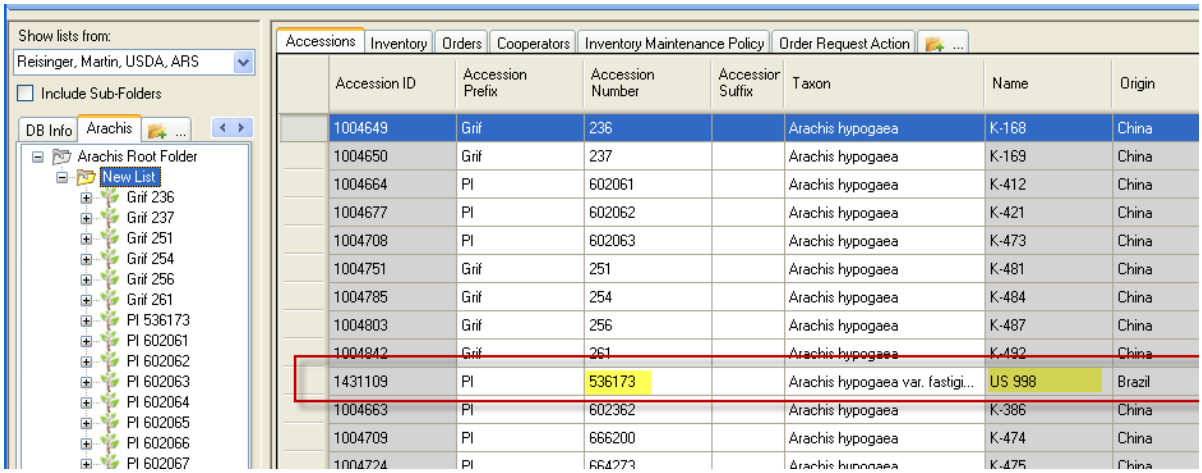


There are several fields in the Accession wizard dataviews which are unique and will be explained in detail here. Otherwise, when you require more information, refer to the online data dictionary for any accession-related fields.

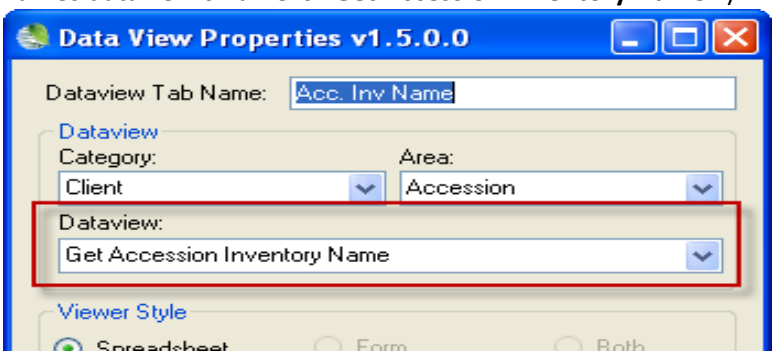
Accession Inventory Names Dataview

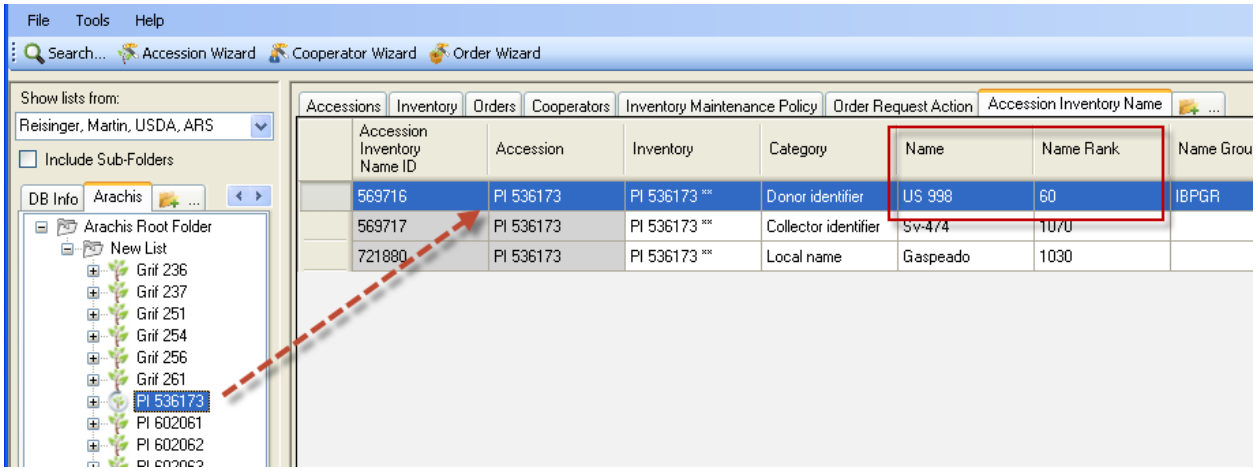
The same accession may be referenced by multiple names. For instance, it may have a name designated by the donor as well as a local or common name. Other developed accessions may be known by a breeder's cultivar name or in some cases a trademark name. GRIN-Global provides the capability for unlimited names to be associated with accessions. In the main Accession dataview only one accession name is displayed. A subordinate (child) table viewed by the **get_accession_inv_name** dataview (**Accession Inventory Names**) stores all of the associated names for the accession.

In the example below, in the Accessions dataview, the Accession Name displayed for Accession Number 536173 is "US 998."



However, there are several names for this Accession when you click on the **Names** dataview. (The Names dataview's name is "**Get Accession Inventory Name**.")





How does the Curator Tool determine which name to display in the **Accessions** dataview? The Curator Tool doesn't arbitrarily pick a name from the **Name** dataview, but rather selects the name from the record in the associated **Names** dataview whose **Name Rank** field has the lowest value. In this example, the lowest **Name Rank** was "60,**"** so the name displayed in the **Accessions** dataview was "US 998."

To keep this simple, if you have multiple records for one Accession in the Names dataview, enter "1" in the **Name Rank** field in the **Name** dataview for the record whose name is to be listed in the Accession dataview. (Some genebanks might refer to this as the "top name.") Some organizations may use a fairly complicated algorithm for assigning numeric values to names, but ultimately in the Curator Tool the name associated with the lowest value in the **Name Rank** field determines the name that will be displayed in the corresponding accession dataview record.

If two (or more) accession name records exist for the same accession and have the same lowest **Name Rank** value, then the one whose name is alphabetically first will be displayed in the accession dataview.

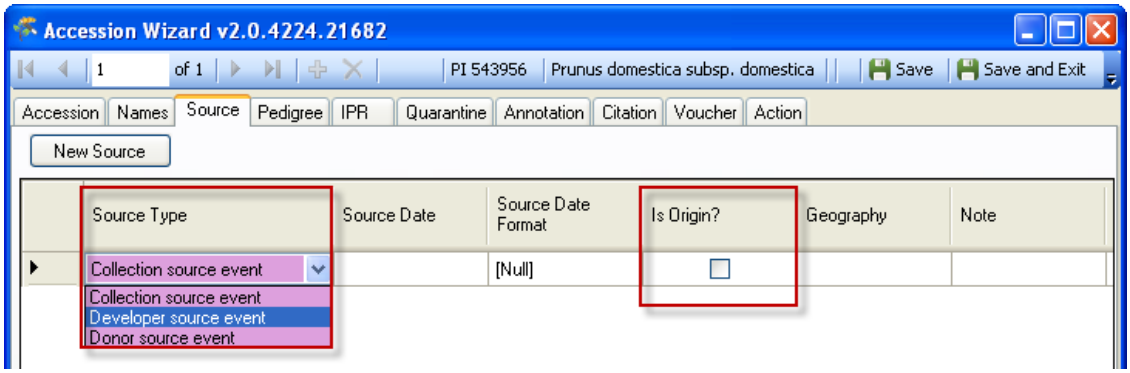
Accession Source Dataview

The **Source** dataview maintains data pertaining to accessions collected in the wild or obtained from farmers, markets, or other local sources, and donations from breeders.

Source Type

There are three possible **Source Types**:

- Collection source event
- Developer source event
- Donor source event



Is Origin?

This "**Is Origin?**" checkbox, when checked, indicates that this record's **Geography** field will be considered as the accession's source location.

Source Descriptors, Codes, and Data for Source Habitat Information

In the 1.0 schema, the habitat section of the accession_source table held the core data that has been associated with an accession collected in the wild (e.g. latitude, longitude, elevation, general source description, general associated species, etc.). In the 2.0 schema, this core set of collection site/habitat information still remains in the accession_source table, while five new source_ tables have been added. The five new tables provide an extremely flexible method for adding more detailed information about the collection site which was not possible with 1.0's single accession_source table. Now genebank managers can create custom descriptors and codes for an unlimited amount of detail on the collection site.

For example, within a category called Soil Descriptors there could be sub-descriptors such as Moisture, Texture, Magnesium Content, etc. The level of detail and range of descriptors is up to the database managers.

In order to use this expanded functionality, there are four essential steps to follow:

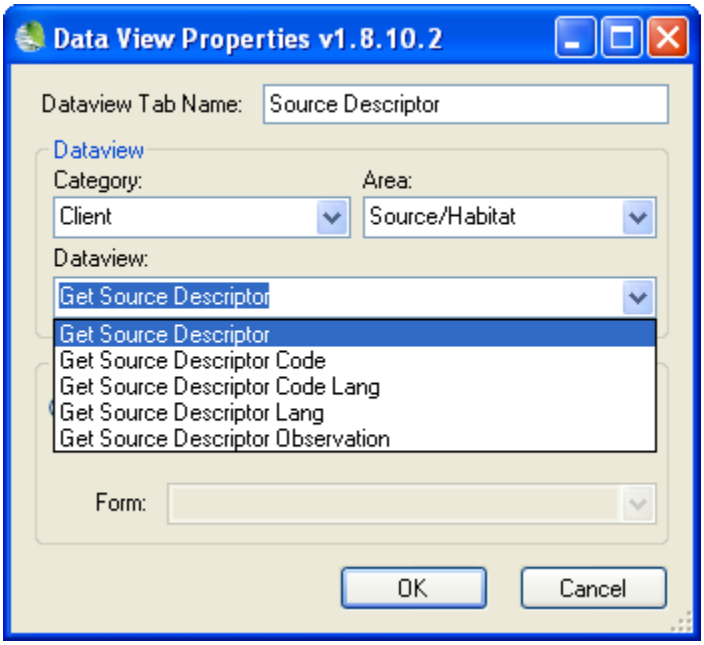
1. the organization determines what habitat descriptors and codes are to be added to the database. The column names and translations of the descriptors and their codes are entered into the GG database using the Source Descriptor Lang and Source Descriptor Code Lang dataviews

2. the collectors collect and record their field data

3. an accession record is created with its child source record and a source that documents the collection event

4. the Source Descriptor Observation data is recorded in GRIN-Global in the Source Descriptor Observation dataview

In the Curator Tool, there are 5 inter-related habitat dataviews in the Source/Habitat area:



- Source Descriptor Code
- Source Descriptor Code Lang
- Source Descriptor
- Source Descriptor Lang
- Source Descriptor Observation

The Global Information System/Georeferencing data is stored in the Curator Tool in the Accession Source dataview.

Other Ancillary Accession Dataviews

For information about the other fields used in the accession dataviews, refer to the online data dictionary.

Drag and Drop Method for Adding New Accessions

The following section explains how to copy accession data stored in a spreadsheet into the GRIN-Global Curator Tool. More detailed instructions are included in the Curator Tool User Guide.

Assume the source accession data is stored in a spreadsheet. In this example, the user's data is in columns, but the spreadsheet headings do not match the Curator Tool column headings. (Not all of the fields in this spreadsheet are being shown):

	A	B	C	D	E	F	H	J	O	P
1		acp	acno	acs	**Taxon**	**PI**	**Variety**	**PVP Numbe**	**Inventory**	
2		PI	667734		*Glycine max*	PI 667734	LG01-5087-5		NSSL 499203.01	
3		PI	667735		*Glycine max*	PI 667735	Brookings		NSSL 499204.01	
4		PI	667736		*Glycine max*	PI 667736	Codington		NSSL 499205.01	
5		PI	667737		*Glycine max*	PI 667737	Roberts		NSSL 499206.01	
6		PI	667738		*Glycine max*	PI 667738	SD06-322		NSSL 499207.01	
7		PI	667739		*Glycine max*	PI 667739	SD06-525		NSSL 499208.01	
8		PI	667740		*Glycine max*	PI 667740	UA 5612		NSSL 499209.01	
9		PI	667741		*Glycine max*	PI 667741	G08PR-394		NSSL 499210.01	
10		PI	667742		*Glycine max*	PI 667742	G09PR-80		NSSL 499211.01	
11		PI	667743		*Triticum aestivum*	PI 667743	Antero		NSSL 499212.01	
12		PI	667744		*Triticum aestivum*	PI 667744	ARS-Selbu		NSSL 499213.01	
13										

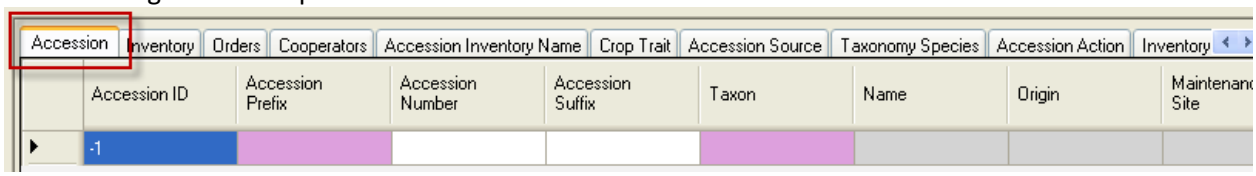
In GRIN-Global, the data is stored in multiple tables. The starting point for bulk adding accession records is the accession dataview. Although you may have all of the accession's data in one spreadsheet, most likely you will need to perform several drag and drop operations in order to populate the respective tables used by GRIN-Global to manage the accession data.

First, rename the spreadsheet column headings to match the Curator Tool column names. For example:

Spreadsheet	**GRIN-Global Column Headings ("friendly names")**
acp	Accession Prefix
acno	Accession Number
acs	Accession Suffix (not used in this illustration)
PI	Accession
Variety	Name
Received	Initial Received Date

The renaming is important because all drag and drop actions into the Curator Tool expect the spreadsheet column headings to match with the CT field names. Alternatively, the actual GRIN-Global table field names may be used.

The following screen is a partial view of an Accession dataview:



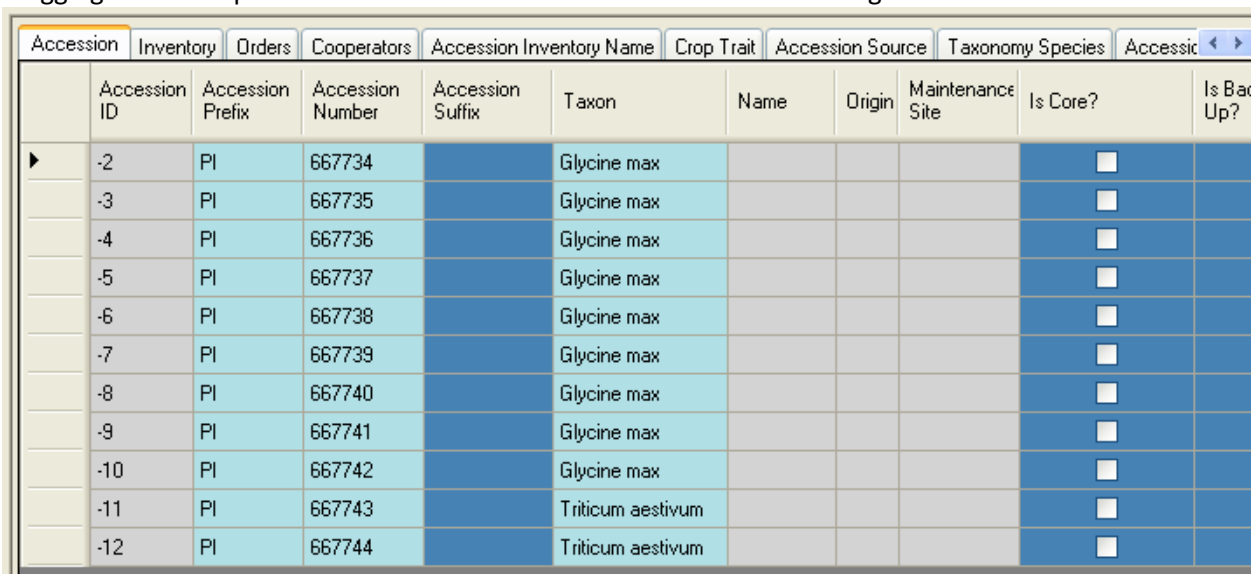
Note that in Edit mode, the violet-colored cells indicate required fields.

Also, for Accession records, the combination of Prefix, Number, and Suffix must be unique.

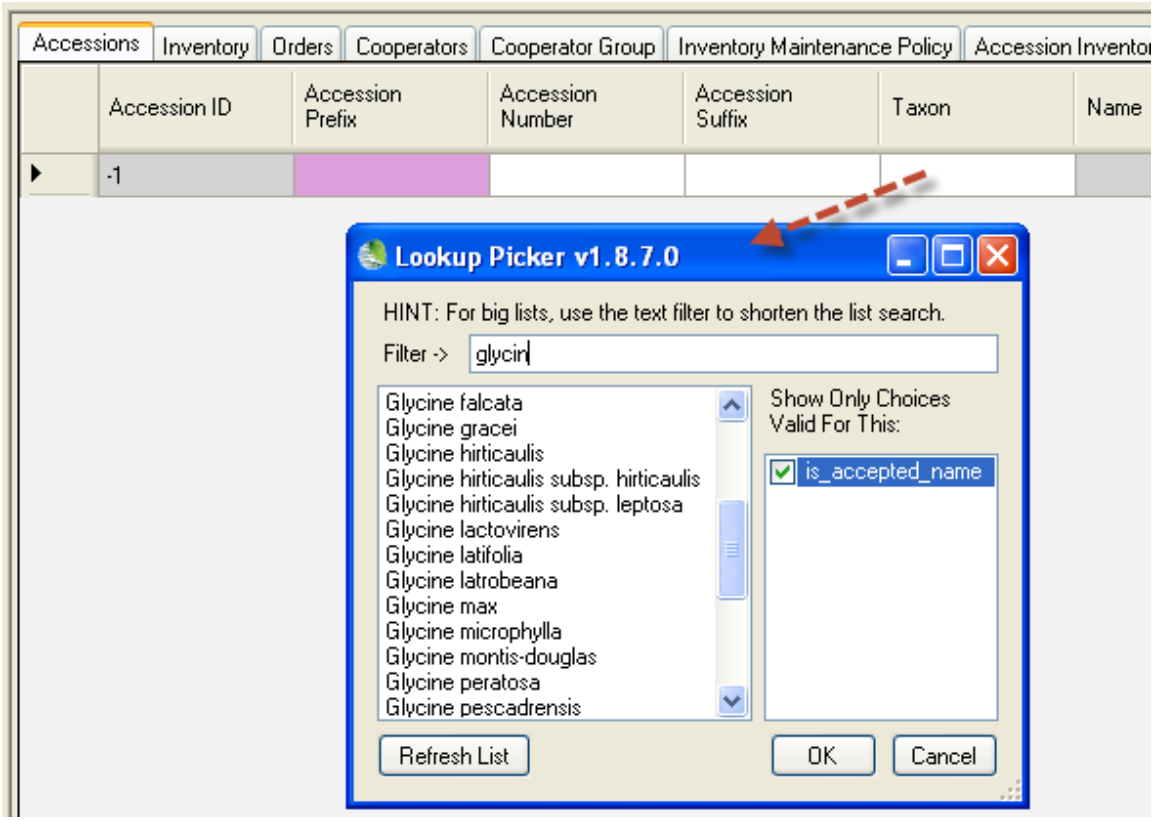
Because these are new accessions, do not include an **Accession ID**. Notice that the Curator Tool DV column headings (above) match the heading in the spreadsheet example below.

A	B	C	D	E	F	K
Accession ID	Accession Prefix	Accession Number	acs	Taxon	Initial Received Date	
	PI	667734		Glycine max	4/24/2013	
	PI	667735		Glycine max	5/2/2013	
	PI	667736		Glycine max	5/2/2013	
	PI	667737		Glycine max	5/2/2013	
	PI	667738		Glycine max	5/2/2013	
	PI	667739		Glycine max	5/2/2013	
	PI	667740		Glycine max	5/6/2013	
	PI	667741		Glycine max	5/22/2013	
	PI	667742		Glycine max	5/22/2013	
	PI	667743		Triticum aestivum	4/22/2013	
	PI	667744		Triticum aestivum	5/21/2013	

Dragging from the spreadsheet to the Curator Tool results in the following:



Before dragging your data into the Curator Tool, consider validating the **Taxon** entries to ensure your spreadsheet data will match the Taxonomy records stored in the GRIN-Global database. One way to do this is to make the Accession dataview active and click the **Edit** button. Mimic the steps for creating a new record, that is, click the + (Add) button. Click in the **Taxon** field and determine the correct spelling for each taxonomy in your spreadsheet data.



One option each organization has when installing GRIN-Global is to pre-load the Taxonomy database that originated from the GRIN database. Furthermore, an organization can include additional taxonomy records to the database, but these taxonomy records must be added before adding the accessions in the drag and drop. (A workaround is to select an existing Taxon, drag your spreadsheet data, and then add/correct the taxonomy data – this is a workaround, and is not ideal, since you may forget to update the taxonomy data!)

After the accession data has been successfully dropped into the CT, when you click the Save Data button, you will also be prompted to add links to the current list – you can choose to do so, or indicate "No" to proceed with the save, but not add items to the current list.