GRIN-Global Workshop

4-Day Workshop Participant Guide

Revision Date
June 2, 2015

This document was designed as the participant workbook for a 4-day workshop covering the GRIN-Global Curator Tool and Public Website, as used by genebank personnel. Review the Table of Contents which contains links to the document's sections.

Complete documentation on many aspects of GRIN-Global is online and can be downloaded from the GRIN-Global Training page: http://www.grin-global.org/index.php/Training

This document's Appendix contains link to other documents that describe in detail the data stored within the GRIN-Global database.

Comments/Suggestions:
Please contact feedback@ars-grin.gov with any suggestions or questions related to this document.

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Workshop Agenda

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Topic	Time	(min)	Description / Files/ Links
Introductions		30	Welcome Welcoming Remarks & Introductions; Workshop Objectives (& Logistics)
The GRIN-Global Environment [Break]		60	GG Environment GG Programs Database | Schema Relational databases vs. spreadsheets Dataview and tables Dictionary / GG Online Materials
Curator Tool (CT) Starting Up		15	Starting Up Selecting a server / adding a server to the list Changing passwords / password rules (Optional Demo: Select Server / Password)
Dataview Basics (CT)		45	Keyboard Shortcuts / Dragging Data CT Screen Overview Creating Lists & Tabs Dataviews Creating a Single Accession Record Required / Read-only / Audit fields Inventory items (virtual nodes) "System" inventory Editing an Accession Record Displaying / Hiding Fields (Columns) Changing column order, width, and sort order Switching to the Grid Form (Accessions only) Displaying Other Dataviews Tables / Dataviews / (Category / Area) Brief survey review of all dataviews (dictionary)
Search Tool Basics (ST)		60	Basic Search for an Accession Record (Search Tool Basics) Search Tool Interface Filtering the Search Results / Status info Drag & drop from the ST to the Curator Tool Find: Default vs. DV dropdown All / Any / List of items Searching for "everything" Wildcard basics Switching Dataviews within the ST Selecting multiple rows w/ Ctrl & Shift; Selecting all rows
Lunch		30	

Day 1 Afternoon

Topic	Time	(min)	Description / Files/ Links
List Management		60	Dragging Records to Lists List menu options: Properties / Clear / Refresh / Rename / Sorting Deleting: records: one or many list items: clearing; deleting Folders (advantages of having many) Lists ("Treeview") Adding Tabs in the List Panel Sharing lists (Show all; Copying lists)
Drag & Drop Records to & from Excel		60	Importing Records from a Spreadsheet Adding multiple new accession records Updating multiple existing accession records
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Accessions		60	Bulk modifying/updating existing accession records Update existing accession records Bulk add Accession_Inventory Name records
Lunch			

Day 2 Afternoon

Topic	Time	(min)	Description / Associated Files
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(CT) Dynamic Folders [Break]		60	Dynamic Folders Advantages / When to use (vs. Static Folders) Creating a basic query Modifying criteria to be "readable" DF library (Sharing)
(PW) Public Website (PW)		75	Public Website Finding an accession PW Interface (excluding Germplasm Requests) Descriptors – brief introduction Exporting & Drag and Drop
		15	End-of-Day Review

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Reports		60	Reports CT Reports PW Reports SQL Query Libraries for the Public Website
Security		60	Security Ownership Permissions
Lunch			

Day 4 Afternoon

Topic	Time	(min)	Description / Files/ Links
Codes and Code Groups		15	Code Groups Review / Administration of the Code Groups
Taxonomy (optional)		30	Taxonomy How does a Taxon get added? Taxonomy Dataviews
"Other" Dataviews (optional)		30	Other Dataviews Viability Literature references Citations Methods Genetic Markers
Source Habitat Descriptors		15	Source Habitat Descriptors Overview Review Accession Wizard: Adding Source Habitat Observations to an Accession Creating Source Habitat Descriptors
Open Review			Open Review Review of the GG system with focus on participant questions; reviews as needed
Final Case *(alternative to Open Review)*			Full Case Participants will create and manage a list of new accessions that have been introduced to the genebank… inventory… orders… observations… viability…
Workshop Closing		30	Workshop Closing Debrief / Final evaluation / Closing

Welcoming Remarks/Introductions

Workshop Objectives

Participants will be able to…

- use the Curator Tool to manage accession, inventory, germplasm orders, and accession evaluation data
- add, update, and search for data
- fulfill germplasm orders
- become comfortable with the GG jargon, terms, and the GG programs' interface
- manage security ownership and permission settings to facilitate a site's workflow and processing
- use the GG Public Website as a tool to also manage the organization's accession data
- explain to an institute's germplasm requestors how to use the Public Website

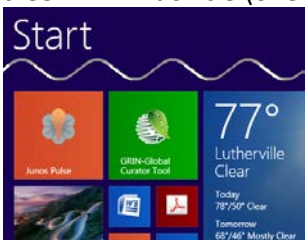
GG Environment

Starting Up the Curator Tool

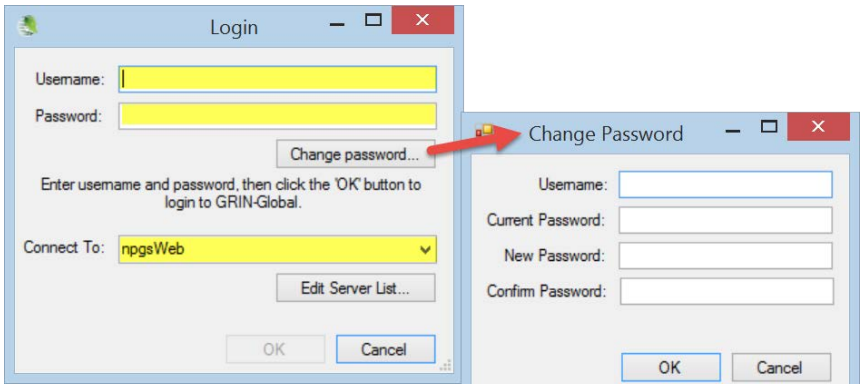
To access the Curator Tool, you need a Username and Password. These are assigned by a GRIN-Global Administrator. Also, the Curator Tool must be installed on your PC.

1. Select **GRIN-Global Curator Tool** from the Windows Start menu or the Curator Tool desktop icon in Windows 7 or from the Start screen in Windows 8 (or 8.1).

Windows 7: 

or 8.1: 

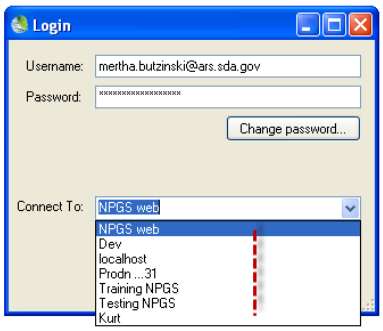
2. In the **Login** window, input your **Username** and **Password**. Select the desired database from the **Connect To:** dropdown box; click the **OK** button**.** To change the password, click the **Change Password** button.



In a networked environment, the server name will be a DNS Server Name or an IP address of the GRIN-Global database. Directions are described below for selecting a different server.

Selecting a Server

In most organizations the GRIN-Global database will reside on a remote server. In others, especially smaller genebanks, the entire GRIN-Global suite may be installed on a single user's PC. (In the case of single PC, the server name will be "**localhost**.") In either case, when you login, you must indicate on the **Login** window the GRIN-Global database location. In most cases, there is only one server listed and you simply click the **OK** button. If the desired server is not visible, click the **Connect To** dropdown to see several other potentially available servers. (The GG administrator usually has this set up in advance.)



Login, using the server, username, and password that are provided to you.

Server (Connect To:) _____

Username: _____

Password: _____

Keyboard Shortcuts

The GRIN-Global Curator Tool adheres to many of the standard Windows conventions. For instance, when you need to copy data on the screen, you can highlight the data being copied and then use the

keyboard shortcut **Ctrl-C**. There are other standard Windows keyboard combinations that are frequently used:

Keyboard Combinations	Effect*
Ctrl + A	Select all (highlight everything in the current "group")
Ctrl + C	Copy
Ctrl + D	When a group of cells are selected, the top cell in the group is duplicated *down* from the top cell to the bottom cell. (Must be in Edit mode; also works when a block of cells across multiple columns are selected.)
Ctrl + E	Displays text fields in an "expanded" window; in edit mode you can change the text.
Ctrl + N	Create a *new* record (when in Edit Mode). Select a record to be duplicated; press Ctrl-N (the duplicate record is created below the selected record).
Ctrl + V	Paste
Ctrl + X	Cut
Ctrl + '	Duplicates the contents from the cell directly above into the cell you are currently editing
ALT	Puts the CT into "block select" mode. In this mode, you can select one or a block of cells to copy and paste into another program, such as Excel. To exit "block select" mode, complete the copy /paste operation or press any key (Esc, Spacebar, etc.). (Note: two key exceptions: the CTRL and ALT keys will not exit the "block select" mode.)
F2	When in Edit mode, you can double-click on a cell to edit it or press the **F2** key. If the cell uses a Lookup Picker, F2 will open the Lookup Picker window.
Delete	When in Edit mode, press the **Del** key to clear the cell. Also use the Delete key to delete rows – in the datagrid, the Order Wizard request items grid, etc. – you will be prompted "…are you sure?"

* (The following shortcuts work within the Curator Tool and Windows, but on non-English keyboards the Windows keyboard shortcuts may be different.)

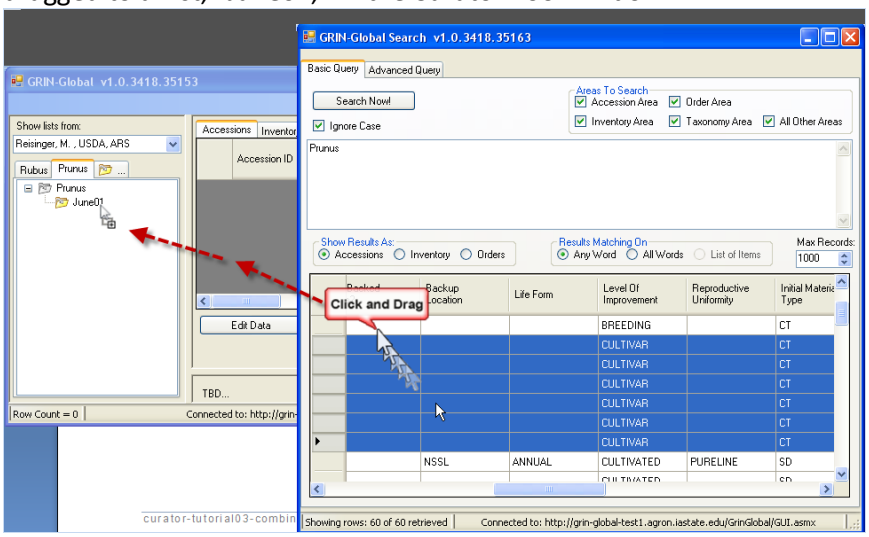
Dragging Data

[This is for reference here. During the workshop, you will have many opportunities to "drag and drop."]

To "drag" the mouse involves clicking on some object on the screen, either text or a graphic, and then *while holding the mouse button*, you drag the mouse

Drag and Drop

In the following example, the highlighted rows in the right window (a Search Tool window), are being dragged to a List, "June01," in the Curator Tool window.



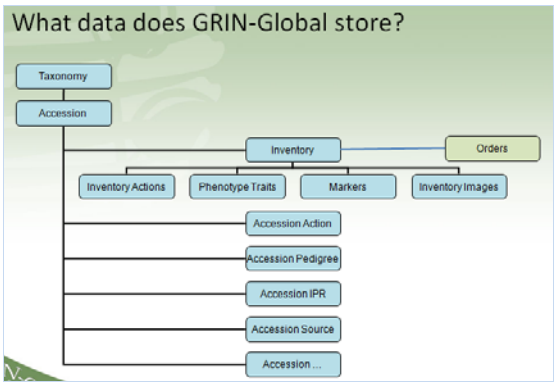
Selecting Cells

In the CT, in Display Mode, you can select a single cell or a block of cells and then copy and paste the cells' contents into a spreadsheet. Click **ALT** *once*, then copy and paste.

Press ALT to select a single or group of cells; then copy

Type	FAO Institute Number	Note
Clonal maintenance site	USA108	
Seed and clonal maintenance site	USA047	
Seed and clonal maintenance site	USA129	

Schema



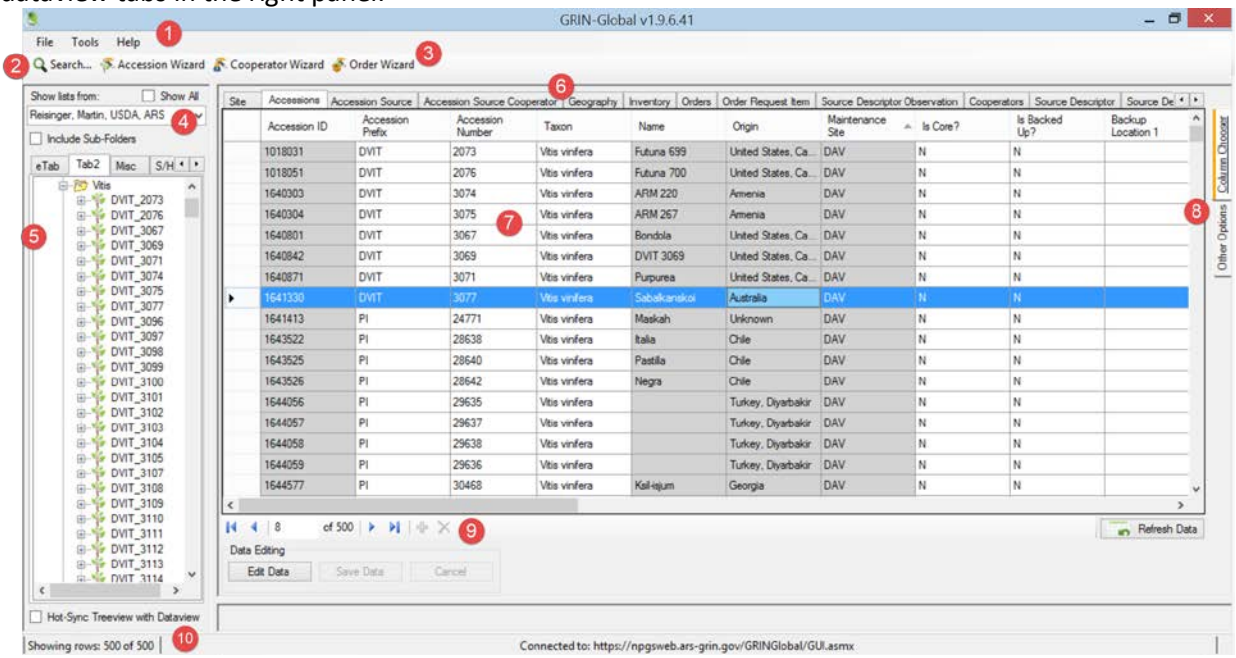
Online Dictionary of Dataviews

Curator Tool Interface

Screen Overview

The Curator Tool's main screen is similar to other Windows programs. The CT's left List panel is similar to Windows Explorer. Explorer uses folders and subfolders to organize files. Likewise, the Curator Tool uses folders and subfolders to organize your personal lists and list items.

In this example, the user has created lists in previous Curator Tool sessions and included additional dataview tabs in the right panel:



When you start the Curator Tool the first time, you will not see any records listed in the datagrid, nor will you see all of these dataviews

(The table below relates to the preceding illustration.)

Num.	Screen Component	Feature
1	**Menu**	The menu options include features such as changing the interface language or password, resetting lists and the user defaults. The Help option has an important item for the CT administrators to use when setting up user connectivity.
2	**Search Button**	Opens a Search Tool window for initiating GG database searches.
3	**Wizard Buttons**	Start wizards which assist you in supplying data for a new record
4	**Show lists from** dropdown	Use the dropdown to view other users' lists. (The optional **Show All** checkbox lists all users. You can use someone's list, but not alter it.)

Num.	Screen Component	Feature
5	**List Panel**	You as the user will organize data into lists – for reasons that are meaningful to you.
6	**Dataviews**	Initially four tabs display. You can display an infinite number of tabs; each tab has a corresponding dataview related to it.
7	**Data Grid**	Each dataview in this area displays its respective column headings. When data is brought into this area, columns and rows will display, similar to a spreadsheet.
8	**Column Chooser & Other Options**	You select which columns to display in the Data Grid. Under the **Other Options** tab there are various features that will be explained later.
9	**Navigation Bar**	Used for moving to different records in the dataview. Also, when in Edit mode, (after pressing the **Edit Data** button), the "+"key  initiates the adding of a new blank record; the "x" key  deletes a record.
10	**Status Bar**	Displays information about the records in the data grid (such as count) as well as the name of the current server.

Definitions

Dataview A pre-defined, programmed query to the database. Physically, the data may be stored in multiple tables, but it will appear in the dataviews as if it is coming from one table.

Folder Synonym for "List." A folder is user-defined – a user decides what database records he is interested in reviewing. The user decides what records to point to, and whether the folder should be static or dynamic.

List Synonym for "Folder."A list contains pointers to records in the database. If you delete items in the list, the original database records remain intact. You are essentially deleting the pointers to the records, not the records.

Null NULL data is sometimes called "absent" data because there is no data value stored in the field. A NULL is not equal to a space character. NULL data sorts to the bottom if the sort is in ascending order and to the top if the sort is in descending order.

Creating Lists & Tabs

Key Points:

- the left panel is similar Windows Explorer
- the words "lists" and "folders" are used interchangeably
- you decide how many tabs and lists (folders) you want; you name them with appropriate names that are meaningful to you

Overview

You can create as many lists and tabs as you want. Users create lists and tabs for many different purposes. The main focus of the Curator Tool is to provide a tool with which curatorial staff can:

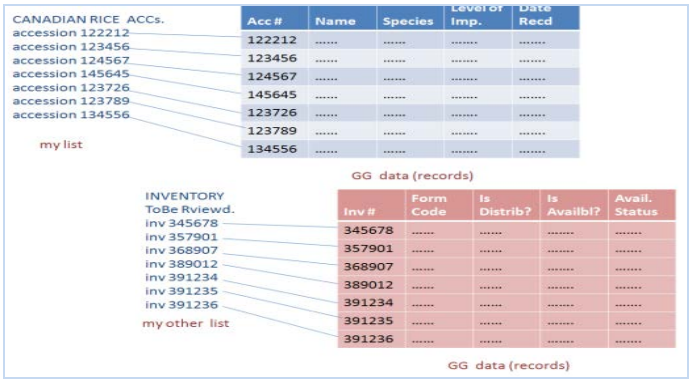
- manage their genebank's accessions
- track their inventory
- process germplasm orders
- record observations

This is just a quick overview. Later, more time will be spent creating lists and tabs and managing items in lists.

There are two general kinds of lists, static and dynamic, but only static lists are covered here; later, dynamic lists will be covered in detail.

Static Lists ("Static Folders")

Typically, a static list points to database records that you have grouped together for some reason.

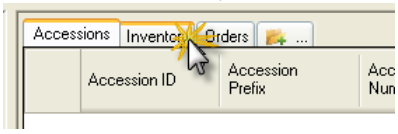


Dataviews

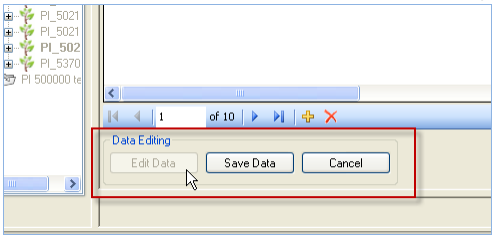
In the Curator Tool, the Dataviews ("Data Views") act as camera lens to the GRIN-Global data.

To Display a Dataview Whose Tab is Visible

To use a dataview, click on the dataview's tab. You must be in **Read-Only** mode to switch dataviews.

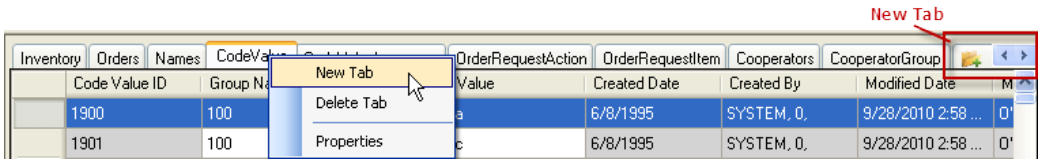


When the **Edit Data** button is grayed out, you are in **Edit** mode. To switch dataviews, you will need to either click **Save Data** or **Cancel**).



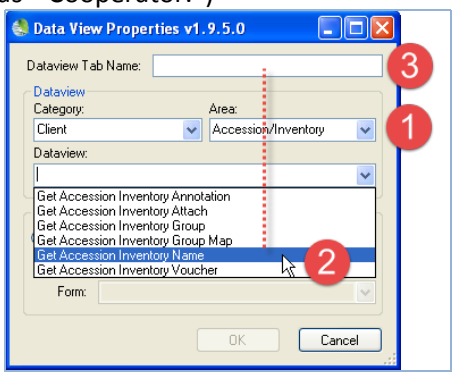
To Display a Dataview Whose Tab *isn't* Visible

1. Click the **New Tab** icon. (When there are many tabs displayed, use the right arrow button to scroll to the right to display the **New Tab** icon):



Alternatively, right-click on any visible tab to display a menu which lists the option "**New Tab**."

2. Select a dataview from the list; type a name in the **Dataview Tab Name** field; click **OK**. (Create a name that reflects the data being displayed. For instance, name the **get_cooperator** dataview such as "Cooperator.")



Cell Colors (Dataviews in Edit Mode)

When changes are being made to database records, the Curator Tool must be in "Edit Mode." The following table summarizes the implication of the cell's color when In Edit mode:

Cell Color	Meaning
gray	cell cannot be edited
violet	required field; a record cannot be saved until all required fields are filled
yellow	when a record is being edited, fields that have changed
white	data hasn't changed in the cell when a record is being edited
blue	current cell

Dataviews are SQL code programmed to display data from primarily one table. However, data from other tables may also be included. In Edit mode, the gray data is typically not stored in the main table which the dataview is accessing.

Creating a Single Accession Record

Follow the instructor's directions for creating a new accession record. Try using your preferred taxon. (If you aren't sure what taxonomy is in GG, start manually adding a single new record in the CT. In Edit mode, click in the **Taxon** field to determine what valid taxonomy are in the database.)

There are several main ways to add and edit accessions:

- "manually" – one at a time, in the Accession dataview
- one at a time, via the Accession Wizard (the subordinate child records can also be added)
- many at a time – by dragging data from a spreadsheet into the Curator Tool

Describe how to recognize a "system inventory record."

_____

_____

_____

References

In GG, an accession's passport is not stored in just one table as it could be in as spreadsheet. GG uses multiple relational tables to store the passport data. Two reference documents explain how this data is stored in GRIN-Global.

Accessions and Passport Data
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_accessions_and_passport_data.pdf

Multi-Crop Passport Descriptors
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_multi_crop_passport_descriptors_MCPD.pdf

Editing a Record

Follow the instructor's directions: Edit one or more of your records. Make some changes to the data. Practice getting into Edit mode / saving changes. Change column order, width, and sort order. For an Accession record, switch to the Grid Form (Right-click; Properties).

Displaying Other Dataviews

Display several dataviews, such as:

- Accession Inventory Name
- Inventory Maintenance Policy
- Crop

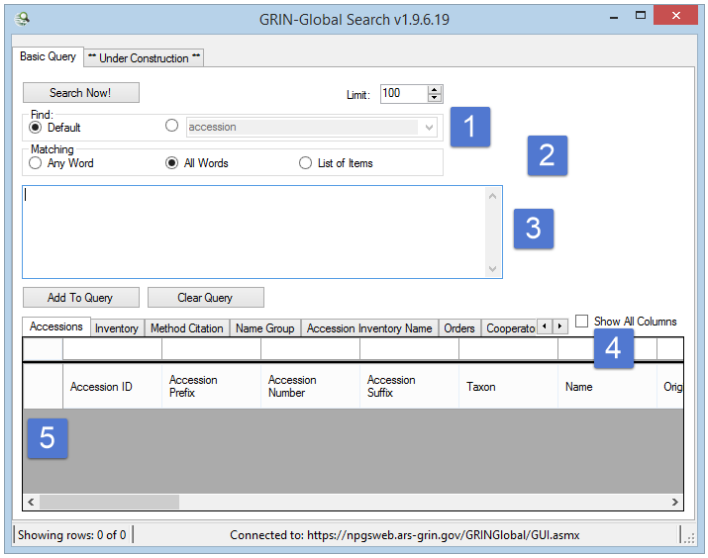
Dictionary

- Bookmark the GG website **Training** page: http://www.grin-global.org/index.php/Training
- Display the online dataview dictionary; bookmark it

Search Tool Basics

Use the Search Tool to search for records from the main GRIN-Global database.

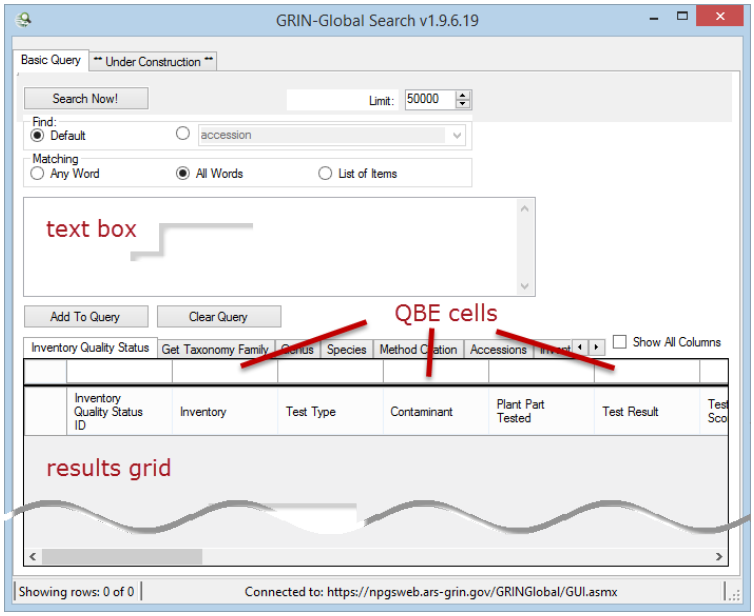
Search Tool Window



Number	Note
1	Find Panel: for many searches, the default radio button will typically be selected. In some cases, you will need to select a dataview name from the dropdown button to resolve to the dataview QBE criterion.
2	Matching: Options for indicating the general type of search.
3	The text box: the criteria for the search are ultimately placed here for review before the search is invoked
4	QBE ("Query By Example") Cells: Enter sample search criteria in these cells.
5	Results grid: After you click the Search Now! button, any matching records are displayed here.

The Search Tool uses two distinct methods:

- Freeform text (not recommended)
- Query-by-Example ("QBE")



In the background, the GRIN-Global search engine software differentiates QBE searches from the free form text searches by looking for the pattern **@table.field** -- if the search string doesn't match that pattern, it isn't a formatted QBE criteria.

A freeform text search is not a true "Google" search. Also it only searches specific fields.

Displaying Additional Query-By-Example (QBE) Tabs

To display additional tabs from which to invoke QBE searches, click on the ellipsis tab and select the desired dataview.

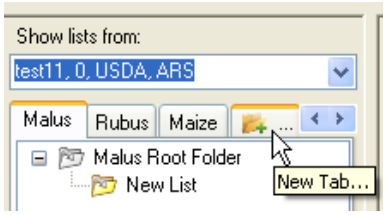
List Management

Using Tabs and Lists to Manage Records

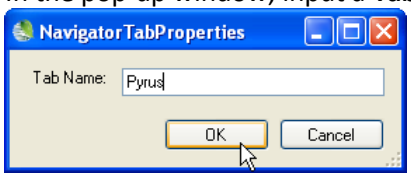
Create custom tabs and lists to manage your database records.

To Create a New Tab

1. In the List Panel, click on the **New Tab** icon with the ellipsis ("…").

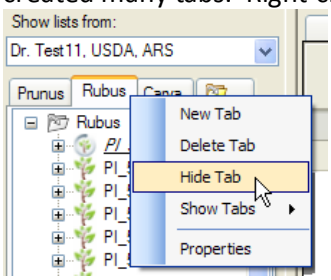


2. In the pop-up window, input a **Tab Name**; click **OK**.



To Hide and Display Tabs

Tabs in the List Panel can be hidden or displayed as desired. This is particularly helpful when you have created many tabs. Right-click on a tab; select **Hide Tab /Show Tab** from the menu as desired:

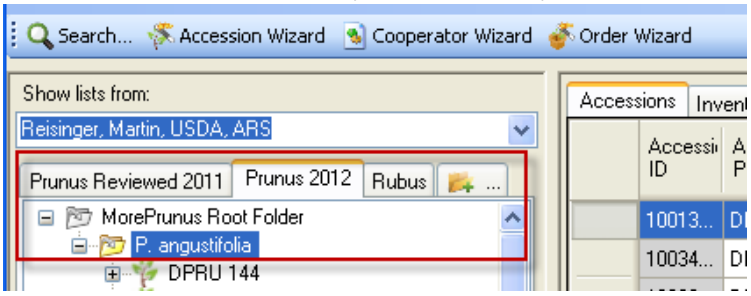


Lists

To Create a New List

1. Right-click on the parent list (the list that will be one level higher than your new list) and select **New List.** A new, empty list with the name "New List" will be created below the existing list.

Build several lists and build them on more than one tab. The following example shows three tabs: "Prunus Reviewed 2011," "Prunus 2012," and "Rubus."



"Drag & Drop" Records from Excel

Importing Records from a Spreadsheet

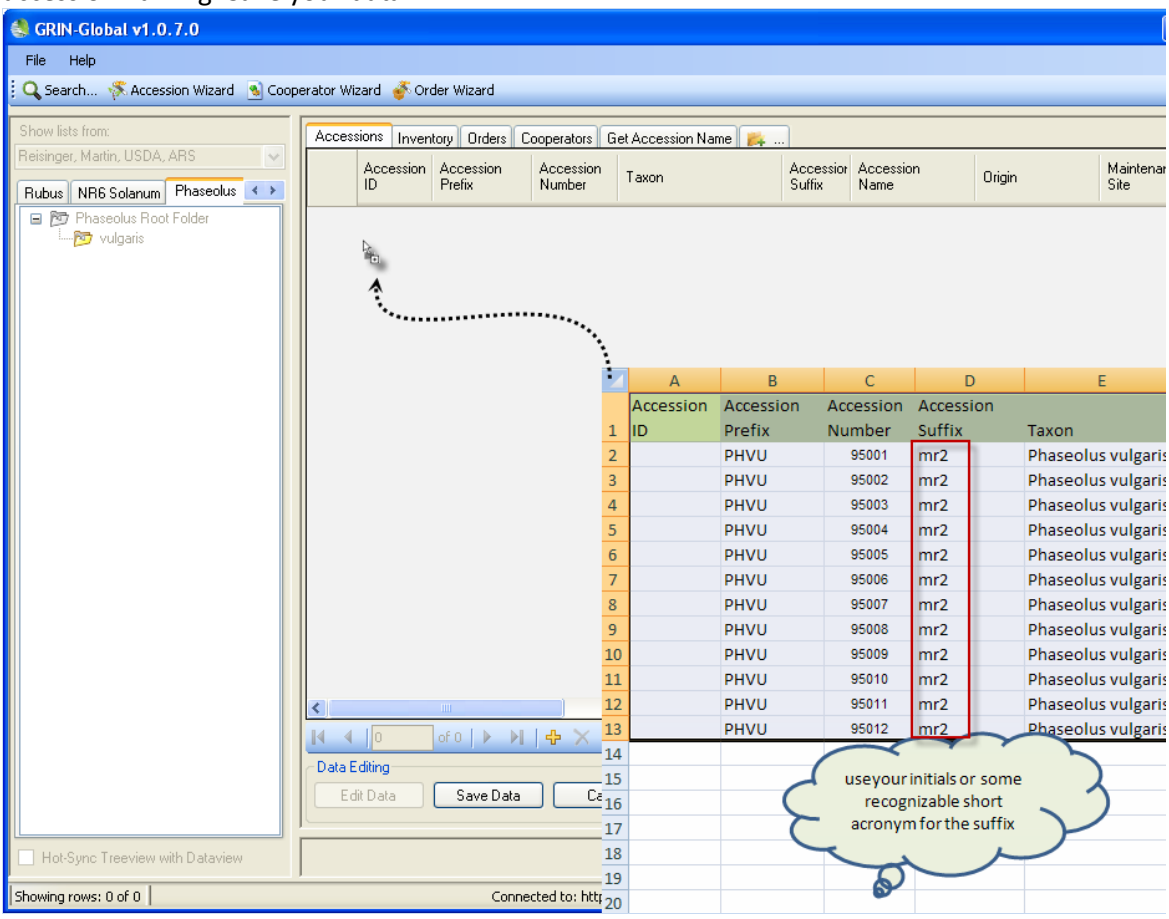
Key Point:

- When copying data from a spreadsheet into the Curator Tool, the *column headings in the spreadsheet are used* to match up the spreadsheet data with the respective columns in the Curator Tool. (You can use either the Column Headings or the actual table field names.)

- Users can copy the headings or the actual field names into a spreadsheet. (To copy the actual fieldnames, when you drag, press and hold the Ctrl key at the same time.)
- The order of the columns does not matter when copying.
- You do not need to copy all of the columns, but when making new records by importing from a spreadsheet, new CT records must have all *required* fields filled.
- When *updating* existing records via "drag-n-drop," the existing ID field data must be included.

Copy data from a spreadsheet and drop it into the Curator Tool. During this process, the *column headings in the spreadsheet are used* to match up the spreadsheet data with the respective columns in the Curator Tool.

Create several new accession records. Use a consistent prefix or suffix, such as your initials, so that as the workshop evolves, the records will be unique and will be relatively easy to identify. Use some sort of numbering system for the **Accession Number** field to assist you in the accession naming. Save your data.



Copy the Data *from* a Spreadsheet *to* the Curator Tool

Open the GRIN-Global Curator Tool and your spreadsheet application (e.g. Microsoft's Excel, OpenSource.org's Calc, or Google Docs). They both must be open, but ideally not both in full screen.

1. In the Curator Tool, locate and click on the folder (list) that will be updated.
2. Also in the Curator Tool, click the **Edit Data** button (if you are not already in Edit mode).
3. In the spreadsheet, highlight the data that will be copied; *include a column header row* in which the spelling of the column names *matches exactly* with the Curator Tool column names.

- only the columns with data being updated must be included
- the spreadsheet columns do not need to be in the same order as the CT columns, but the spreadsheet column names *must be spelled identically* to the CT column names

4. In the spreadsheet, using the cursor, grab the box outlining the selected cells, drag the box and drop it anywhere in the GRIN-Global Data Grid.
5. Any changes made in the spreadsheet should now be visible in GRIN-Global.
6. If satisfied, click **Save Data**.

Each table has a primary key – for instance in the Accession table it is the **Accession ID** field. It is important to review the primary key field in the spreadsheet before dragging the data into the Curator Tool. Dragging spreadsheet records with:

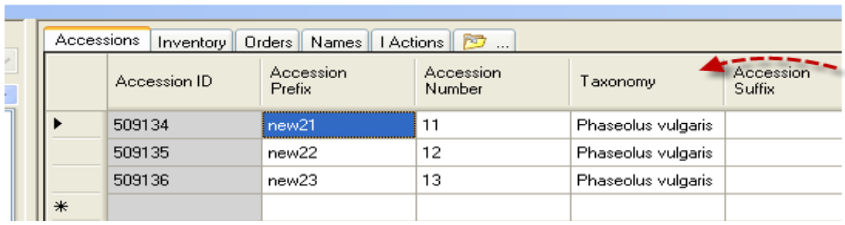
- matching key fields *will update* existing records in the Curator Tool Data Grid
- non-matching (or empty) key fields *will add new* records in the Curator Tool Data Grid

Prepare your spreadsheet so that you can use your existing records as the basis for creating new records. In this next step, you will *not be* dragging the accession_id field back to the CT, but you can drag the other fields (remember that you want a unique combination of the prefix, number, and suffix).

Copying, Block-Style

Use the Block-style copying approach to copy blocks of data from a spreadsheet into the Curator Tool. You can use the ALT key to invoke Block-Mode – you do not need to be in Edit mode to copy from the CT. However, to copy data back into the CT, arrange your spreadsheet data *in the same order* as the Curator Tool's. In the CT, click the **Edit Data** button to be in Edit mode before you paste into the CT.

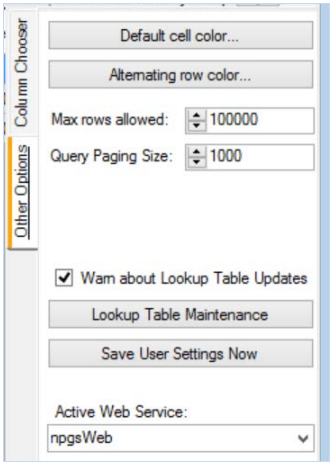
When using this method, since you will not be including the column names, *it is critical where you line up the cells* when you copy and paste



Practice using the Alt key technique.

User Settings

These settings can be changed. They are also changed when you exit the CT.

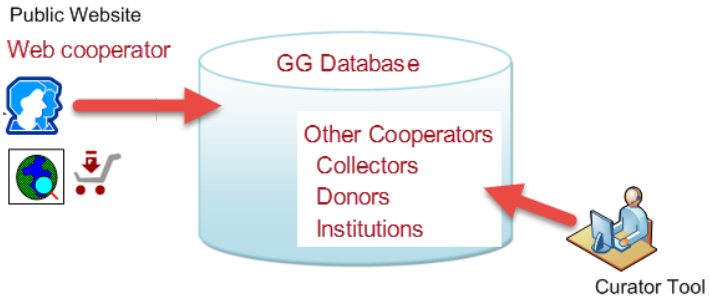


Cooperators - Management of Cooperator Records

For complete details, review the Curator Tool User Guide's *Cooperator Wizard* section.

Key Points:

Two distinct cooperator records (and tables) in GG:



Use the Curator Tool's Cooperator Wizard whenever you wish to add a new cooperator to the GRIN-Global database or edit an existing cooperator record. One advantage of using the wizard, rather than using the cooperator dataview, is that you can search the database before inputting a new cooperator.

Background Information

Note that there are two kinds of cooperator records:

- web cooperators
- "ordinary" GRIN-Global(GG) cooperators

Web Cooperators

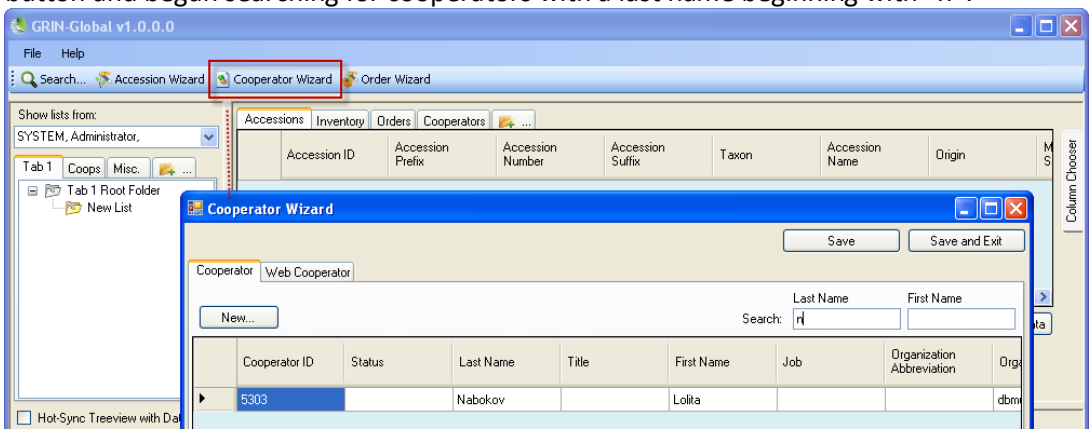
A GRIN-Global public website user has an opportunity to self-register – during this registration process the user's contact information is stored in a *web* cooperator record. This web cooperator record is not the same thing as a GG cooperator record.

GRIN-Global Cooperator Records

In addition to the web cooperator records, GRIN-Global maintains cooperator records that are records containing data on individuals and organizations involved with germplasm activities (donors, collectors, breeders, requestors, etc.) Besides storing active address and organization data, cooperator records can be used to store historic data containing the previous addresses of a person or institution.

Cooperator Wizard

Use the Cooperator Wizard to add new cooperators or edit existing ones. In the following example, while the user had the **Accessions** dataview as the active dataview, he clicked on the **Cooperator Wizard** button and began searching for cooperators with a last name beginning with "n":



Use the "_" (single character) and the % (multiple characters) wildcards to broaden the search.

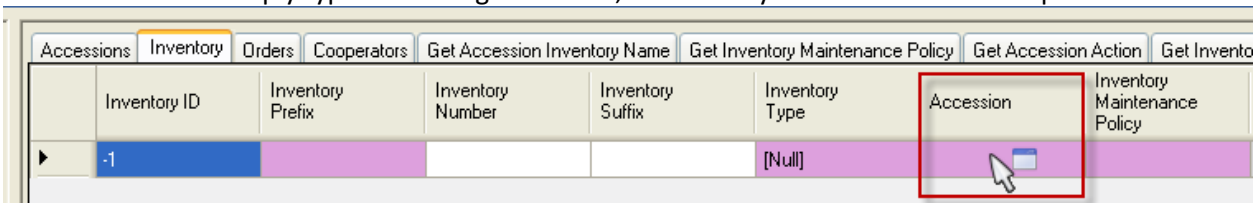
A cooperator can be an *individual* or an *organization*. Typically, when creating an institutional cooperator record, the last name and first name fields are left empty.

To avoid entering duplicate cooperators, use the cooperator wizard before inputting a new cooperator.

Use the cooperator wizard to look for existing cooperator records; then use it to create a few new records.

Lookup Tables

Any time you see a pointer similar to the one below, recognize this field as one that is using a lookup table. You cannot simply type something in this cell, but rather you must use the Lookup Table window

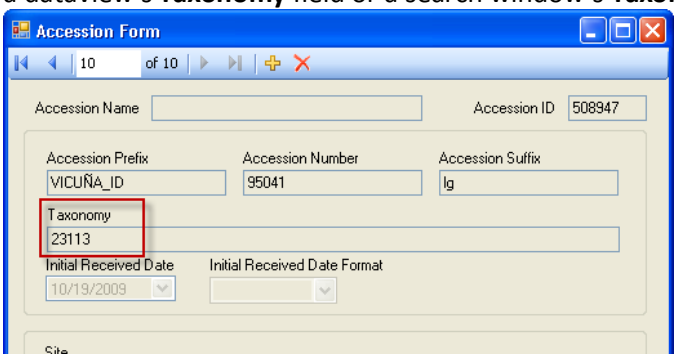


Lookup Table Warnings

The first time you open the Curator Tool you will be prompted to update your lookup tables. After all lookup tables are updated, the lookups will maintain themselves fairly automatically.

Indicators When a Lookup Table Isn't Updated

As an example, when the Taxonomy Lookup table needs updating, you may notice numbers displaying in a dataview's **Taxonomy** field or a search window's **Taxon** field instead of the actual taxonomic name.

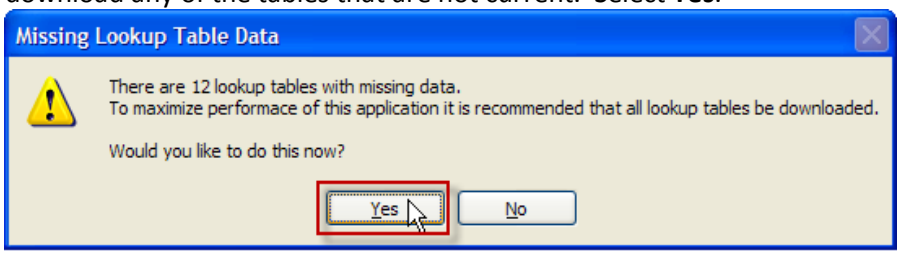


Updating the Lookup Tables

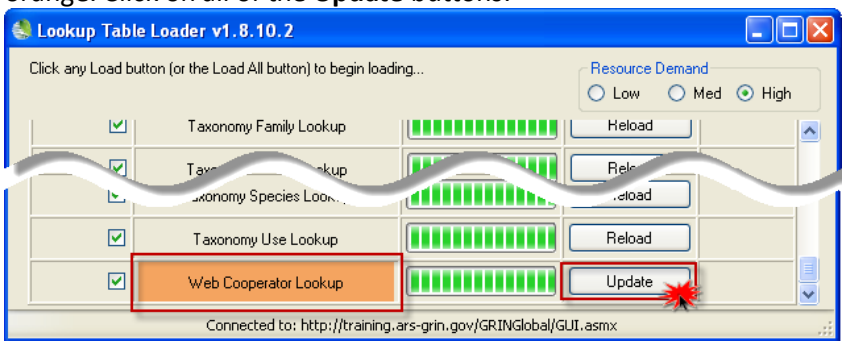
You can update the Lookup tables when you start the Curator Tool or at any time while the Curator Tool is running.

Updating When You Start Up the Curator Tool

When you start the Curator Tool, if the lookup tables are not updated, you will be prompted to download any of the tables that are not current. Select **Yes**.



Clicking the **Yes** button does not update the lookup tables; selecting "**Yes**" only displays the **LookupTableLoader** window. Any lookup tables needing to be updated are highlighted in orange. Click on all of the **Update** buttons:



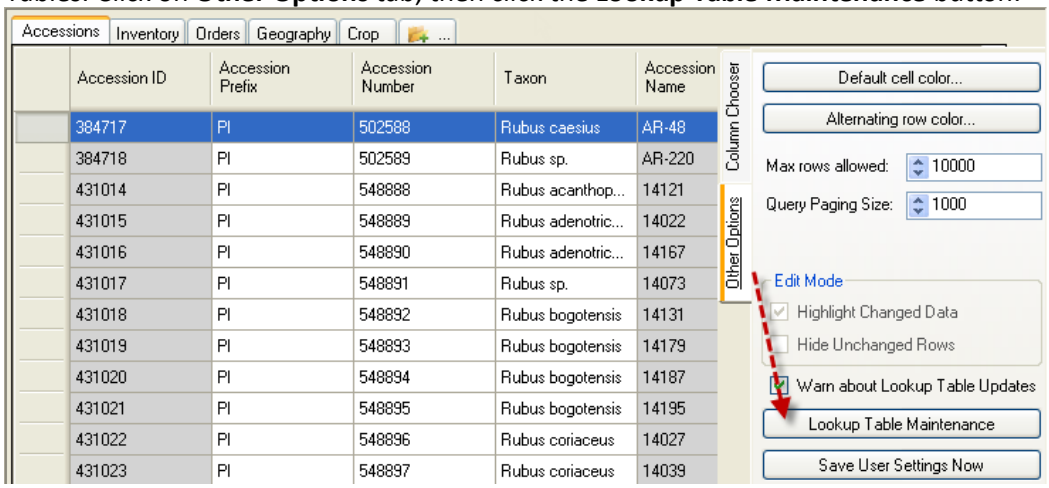
Load All and Load Buttons

Only click the **Load All** button when you have a new copy of the Curator Tool. It is rare that you will need to use this button more than once per CT version. **Load All** will cause all lookup tables to be re-loaded – this may require one hour or so, depending on the size of your data.

To ensure that the Lookups are fully updated, the Load All Button. (Wait until the progress activity is visibly complete before clicking the second time.)

Updating Lookup Tables After Startup

Use the **Other Options** tab any time you want to initiate the loading/updating of any of the Lookup Tables. Click on **Other Options** tab; then click the **Lookup Table Maintenance** button:



Accession Wizard

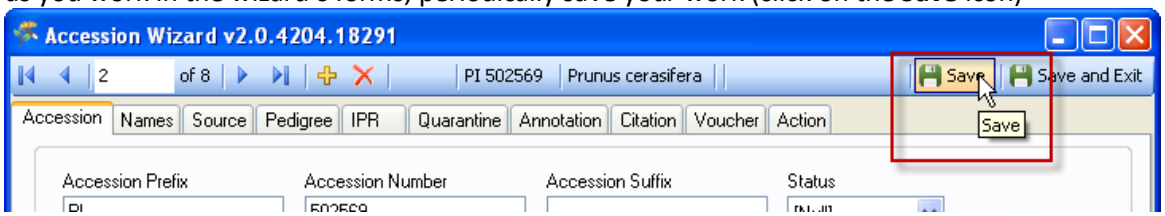
General Notes about the Accession Wizard

Use the wizard rather than the straight dataviews whenever possible since wizards generally have been programmed with more features and functionality than the dataviews. Another big advantage of

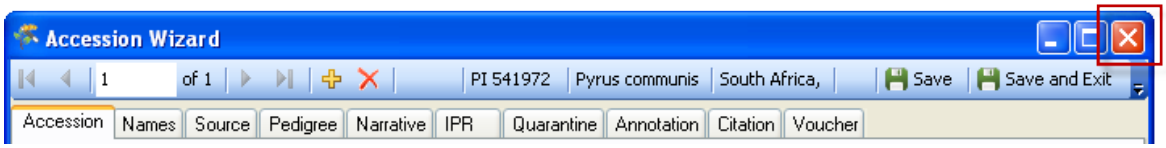
working with the wizard is that it is easy to switch back and forth between the parent accession record and its children records.

Some guidelines:

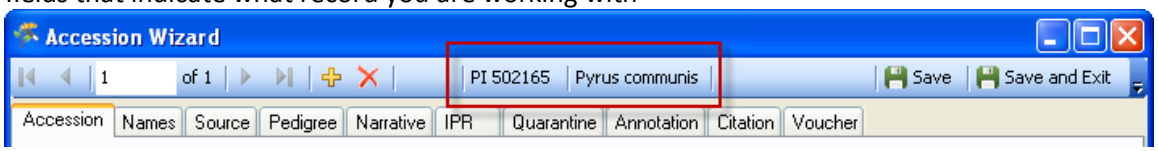
- as you work in the wizard's forms, periodically save your work (click on the **Save** icon)



- use the window's close button to cancel when necessary. *However, any data not yet saved will be dropped, not just for the current tab screen, but for any of the tabs*



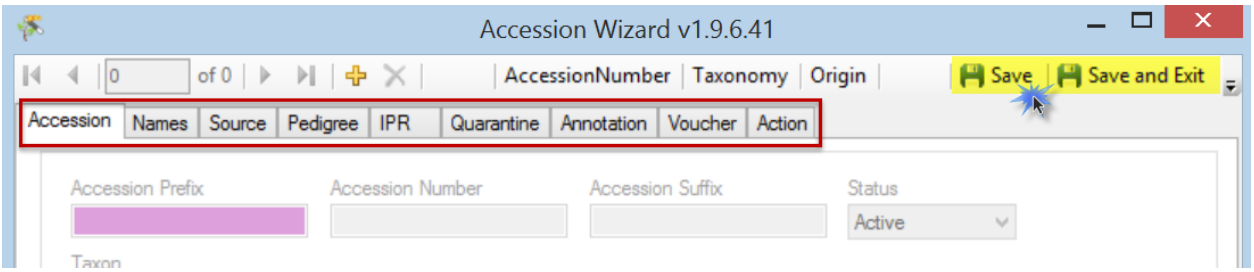
- when reviewing the wizard's screens, notice that the screen's header displays certain important fields that indicate what record you are working with



"Mechanics"

The accession wizard contains nine dataview tabs which make it possible to input data (records) considered to be children of the main parent (accession) record. As you move from tab to tab, click the **Save** button to ensure that the inputted data is saved in the database.

You can move from tab to tab to review the accession's associated data. However, in the following screen, the accession is new –so you must input the accession record data before inputting any of the other records.



The navigation bar and the information directly below the window's Title Bar indicate what record you are working with and make it possible to move through the records (assuming that prior to invoking the wizard, the user had selected multiple accession records.)

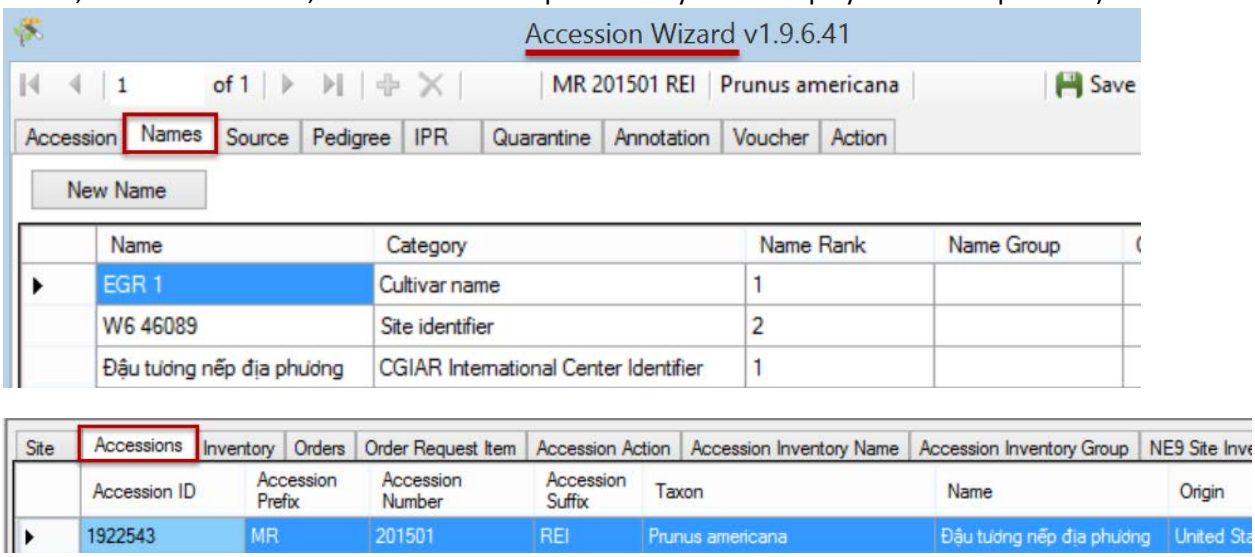
Passport Data

GG is a relational database and as such, is segmented into many tables. The passport data is saved among many different tables. There is an online Multi-Crop Passport Data document that provides details on each passport field. Many of these passport data fields can be seen in the various children records.

Names / Name Rank / Categories / Name Group

The accession_inv_names dataview accesses the accession_inv_names table -- these names can be applied to specific inventory records or at the accession level. The accession / inventory can have multiple names which can represent cultivar names, institute identifiers, collector numbers, breeder lines, etc.

When an accession has more than one Name record associated with it, the name whose Name Rank field has the lowest value will be displayed in the Accession dataview (in the Name field). (As shown below, In the case of a tie, the name that is alphabetically first is displayed as the top name.)



Bulk Modifying/Updating Existing Accession Records

Frequently as a user you will need to change *many* records at one time. Records can be copied from GG to a spreadsheet where changes will be made. When copying the data back into GG, the user needs to consider whether new records are being added or if records are being updated.

The main thing to remember is that when adding new records, the ID fields for the new records are left blank (since GG will assign the IDs when the new records are saved), whereas when records are being updated, any drag and drop from the spreadsheet to GG must include the ID field.

Practice this “dragging and dropping” several times throughout the workshop. The exercise here will involve bulk adding new records, and then updating the records.

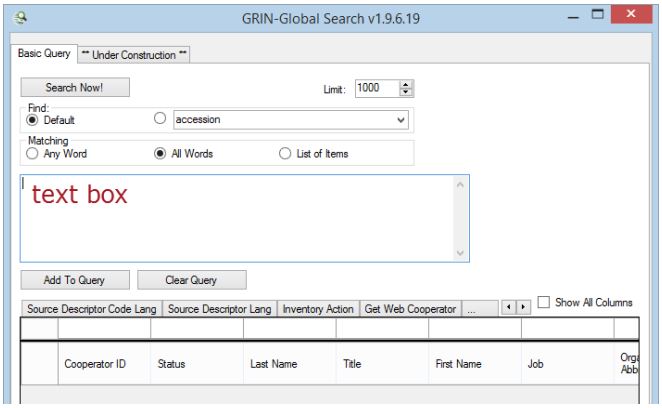
Searches (…more)

Text Box Searches

In text box searches, the Search Tool only searches certain database fields. The fields are listed in the table below the screen example. These are the fields used for text box searches:

Table Name	Field Name
accession	accession_number_part1, accession_number_part2, accession_number_part3, note
accession_ipr	ipr_number, ipr_crop_name, ipr_full_name, note
accession_inv_name	plant_name
accession_pedigree	description
cooperator	last_name, first_name
crop	name
geography	adm1, adm 2, adm3, adm4, country_code
inventory	inventory_number_part1, inventory_number_part2, inventory_number_part3,
taxonomy_common_name	name, simplified_name
taxonomy_family	family_name, alternate_name
taxonomy_genus	genus_name
taxonomy_species	nomen_number, species_name, name, alternate_name
code_value_lang	title

The text search behaves *similar* to Google searches ("similar," but not "exactly"). For information on Google searches, see: http://www.google.com/support/websearch/bin/answer.py?answer=134479



Case Sensitivity

Generally, all characters entered in a textbox query are used.

The case sensitivity of your search depends on how the GRIN-Global database is set up:

- If the database is installed as ***case-sensitive*** (this is the default for the Oracle and PostgreSQL database engines), the queries will be case-sensitive.

- If the database is installed with settings to make the database *case-insensitive* (this is the default for SQL Server and MySQL database engines), then the queries will be case-insensitive too.

Text Boxes and Special Characters

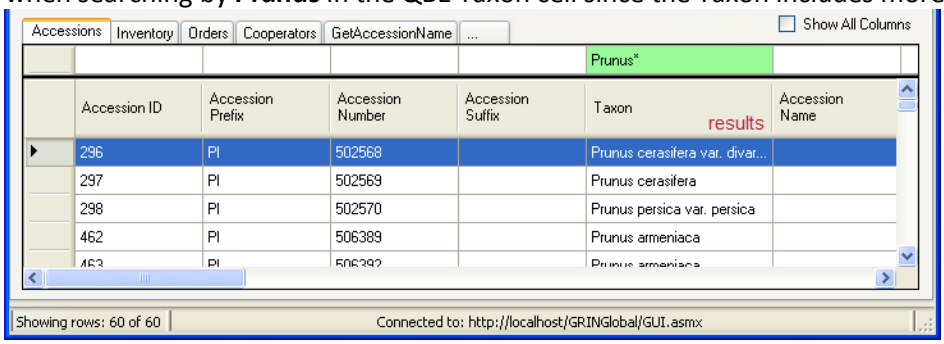
Special characters and letters with diacritical marks and accents (such as á) can be entered in the Search text box.

You can copy special characters from the Windows clipboard. Another method is to enter the character using the Windows "Alt key – numeric codes" method. Refer to the following webpage for the common codes: http://tlt.its.psu.edu/suggestions/international/accents/codealt.html This website also contains directions for loading and using international keyboards which provide the special characters directly on the keyboard, using specific key combinations.

Query-by-example (QBE) Searches

Recommended over text box searches – can search fields throughout the GG database.

The QBE cells accept wild card characters. (See wildcard table.) For example, **Prunus*** is appropriate when searching by **Prunus** in the QBE Taxon cell since the Taxon includes more than genus.



use the '%' symbol as a global wildcard – it works when you type it in either the QBE cell or text box, whereas the '*' (asterisk) cannot be typed directly in the text box.

Every word matters

Generally, all characters entered in a query are used. The case sensitivity of your search will depend on how the GRIN-Global database is set up:

- If the database is installed as case-sensitive (this is the default for the Oracle and PostgreSQL database engines), the queries will be case-sensitive.

- If the database is installed with settings to make the database case-***in***sensitive (this is the default for Microsoft SQL Server and MySQL database engines), then the queries will be case-insensitive too. (The National Plant Germplasm System is using MS SQL Server.)

Wildcards

General guidelines:

- use quotes in the text box to search for exact matches (but remember that case-sensitivity is still driven by how the database engine is set up)
- do not use quotes in QBE cells
- use the '%' symbol as a wildcard – it works when you type it in either the QBE cell or text box, whereas the '*' (asterisk) cannot be typed directly in the text box

The following table illustrates the supported wildcards and operators in QBE searches:

Wildcard / Operator	**Examples / Notes**
% (percent symbol) * (asterisk)	Use to broaden searches, especially when the exact spelling is unknown. The field must be a text field. Either wildcard (% or *) allows a match of any string of any length (including zero length) Examples: **Rubus%** or **Rubus*** **Prunus%var** will locate any Prunus with "var" included; **%var%** will locate any accessions with the text "var" as part of its taxon
_ (underscore)	The wild card underscore character **_** Represents any *single* character. Multiple underscores may be used if needed. The field must be a text field. **Solanum_x%** will find: **Solanum x** doddsii and **Solanum x** sucrense If you need to search for the underscore character rather than have it act as wildcard, enclose it in brackets, such as: @inventory_action.action_name_code LIKE 'INS[_]%' (in this example, the 4th character must be an underscore character)
<>	Can be used to indicate "not equal to." The field can be either a text or numeric field.

Wildcard / Operator	Examples / Notes
	– when the field is a *text* field, the criterion must be enclosed by quotes – single quotes: 'PI' or double quotes: "PI" – when the field is a *numeric* field, the criterion *is not* enclosed in quotes
IS NULL / IS NOT NULL	NULL values represent missing unknown data. By default, a table column can hold NULL values. Note: NULL and 0 are not equivalent.
IN / NOT IN	Used when the criterion field is using a lookup table. (Lookups generate an **IN (…)** clause.) The numbers in the parentheses are the Lookup Key values in the database.
LIKE	The LIKE operator is used to search for a specified pattern. Example: **LIKE 'CAPSICUM%'** In this case the QBE is saying find any text that begins with "Capsicum." The trailing percent symbol indicates that any records with any text after "capsicum" should be included if found.
"BETWEEN"	BETWEEN is *not* a valid operator. When a range of values is needed, construct your criteria using a range. For example: @order_request.ordered_date > '2015-01-31' AND @order_request.ordered_date < '2015-03-01' (finds the orders for February, 2015)
Date Fields	Searching for dates can be tricky because the date field includes the time of day as well. Refer to *Date Ranges* section below for details.

Date Ranges

There is no BETWEEN option, but you can specify a date range. Use the greater than (>) and less than (<) symbols.

```
@order_request.ordered_date >= '14-Feb-2014' AND @order_request.ordered_date <= '28-Feb-2014'
```

Examples:

```
@order_request.ordered_date >= '2013' AND @order_request.ordered_date <= '2014'
```

or

```
@accession.created_date >= '01-Mar-2014' and @accession.created_date <= '01-Jun-2014'
```

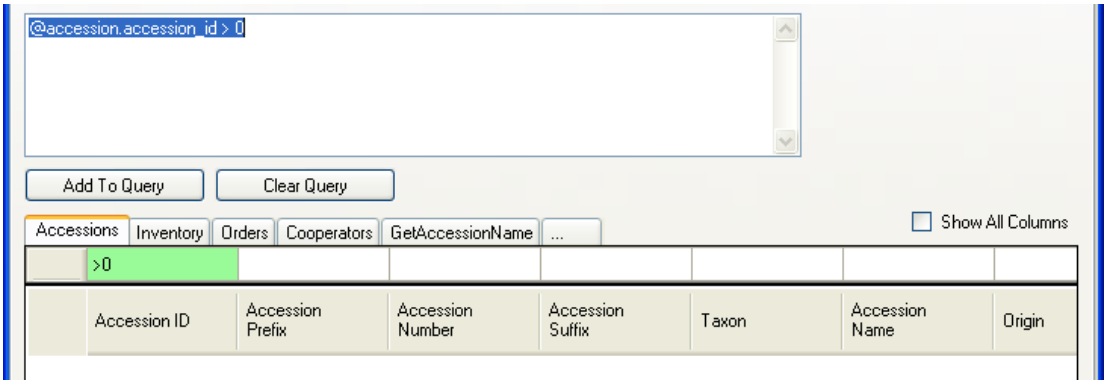
Working with data searches can be tricky because the date field includes the time of day as well. A query including **<=** when working just with years will exclude the date specified because of the way the date fields are stored. Therefore, if you want dates in 2013 specify **<=**2014 to include all of 2013. Example:

```
@order_request.ordered_date >= '2009' AND @order_request.ordered_date <= '2014'
```

Search All

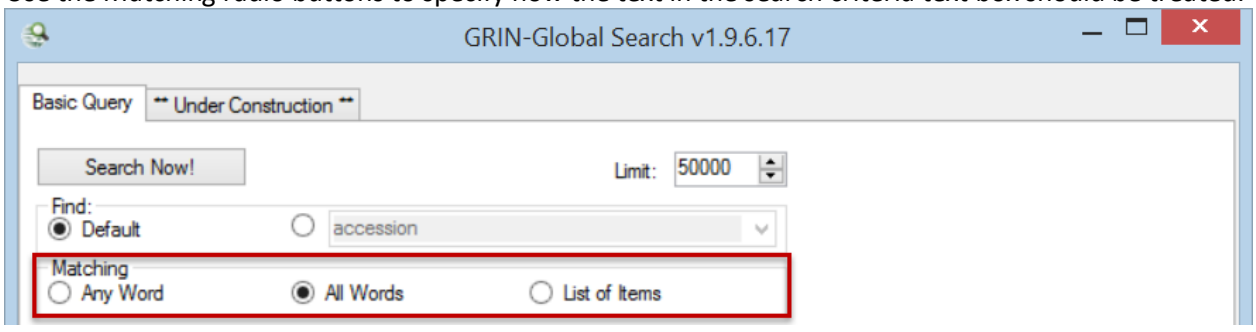
There is a handy method in the QBE for doing a "Search All." In the QBE, the left column is the table's primary key field. Since these key fields are numeric and have a value greater than 0, if you enter **>0,** the search will find all of the records.

When using this technique on large tables such as inventory which may have millions of records, be sure to set the Limit field (the maximum number of returned records) to a reasonable number.



"OR" and "AND" in the Query-by-Example Search Method

Use the Matching radio buttons to specify how the text in the search criteria text box should be treated:



- ***Any Word*** – less restrictive, records are returned whenever any word in the search box is matched; the "OR" operator will be used instead of "AND" – either search criteria must be met

- ***All Words*** – more restrictive, *all* of the words used in the search text must match (see the first example below); this creates an "AND" condition

Example:

In a test database, using the search string **Rubus glaucus*,** with "*All Words*" -- only four records are found. With "*Any Word*," selected, 48 records are found – 4 of the 48 are the **Rubus glacus**. So the other 44 records found had either **Rubus** or **glaucus** in their name. (42 happened to be **Rubus,** including the four **Rubus glaucus**, and six were **Elymus glaucus**.)

- ***List of Items*** – used typically when a list, such as a list of accessions, is copied into the search text box. See 34 for an example.

When inputting search criteria in two or more cells, the search condition that is created depends on whether you have selected the radio button **All Words** or **Any Word**:

- **All Words** – the criteria in multiple QBE cells work together as an "AND" …both search criteria must be met in order for records to be found.

- **Any Word** – the criteria in multiple QBE cells work together as an "OR" …any one of the search criteria must be met in order for records to be found

List of Items

This option is used typically when a list, such as a list of accessions, is copied from a spreadsheet into the search text box.

When using this "List of Items" search, the Search Engine is restricted to finding matches in these columns:

accession_number_part1, accession_number_part2, accession_number_part3
inventory_number_part1, inventory_number_part2, inventory_number_part3
form_type_code
plant_name
order_request_id

Example:

List of Items: (example)

PI 500501
PI 612346
PI 612347

Currently the radio button will "stick" until you manually select another. Remember to click on one of the other radio buttons after doing a "List of Items" search; otherwise, your search will not work as you expect.

Criteria Code Explained

Read this section if you are interested in the technical details of a QBE search. We include this section in the User Guide primarily because some users will be creating dynamic folders in the Curator Tool, and having a basic understanding of QBE code is helpful.

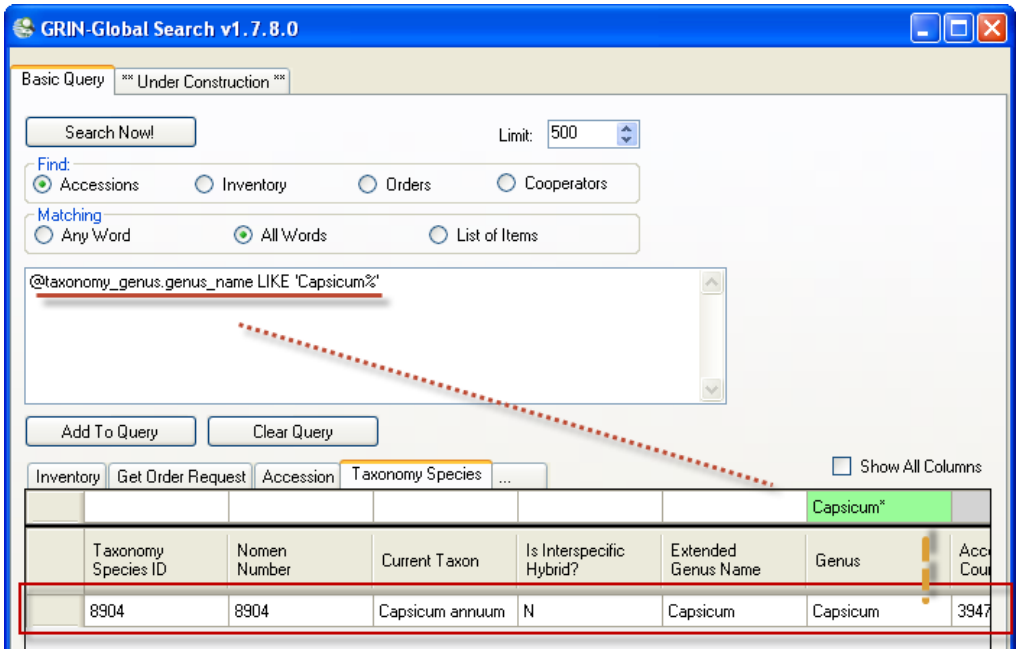
In creating your QBE searches, you will notice code being generated in the text box as we have seen in the search examples above.

Let's look at two QBE examples that on the surface seem to be similar searches.

In this first example, the user will open the Taxonomy Species dataview and look for records whose Genus is **Capsicum**. As recommended, the user will include an asterisk in the QBE text to broaden the search. After the user clicks the **Search Now** button, the Search Tool generates the code (illustration is on the following page.)

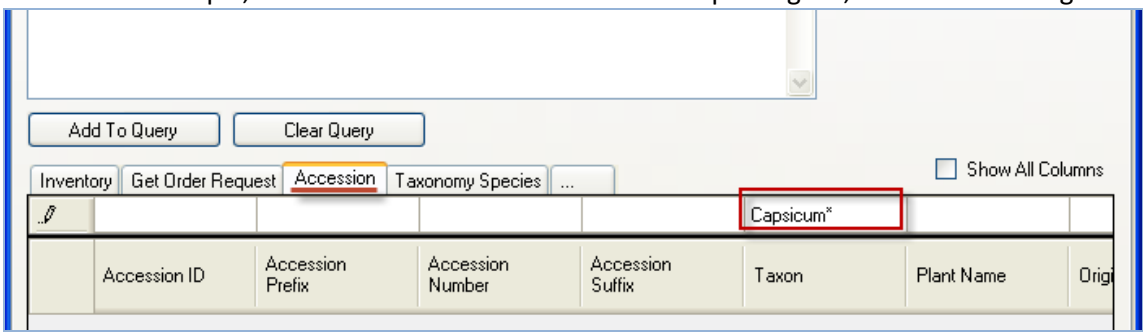
@ taxonomy_genus.genus_name LIKE 'CAPSICUM%' Let's break out this code into three components:

Code	Indicates…
@taxonomy_genus	the table; the taxonomy_genus in the database will be searched
genus.name	the field name in the table
LIKE 'CAPSICUM%'	The LIKE operator is used to search for a specified pattern; in this case the QBE is saying find any text that begins with "capsicum." The trailing asterisk indicates that any records with any text after "capsicum" should be included if found.



The result of the successful query is shown here. A Capsicum (Taxonomy Species) record was found.

In this next example, the user has the Accession dataview open. Again , the user is looking for Capsicum:

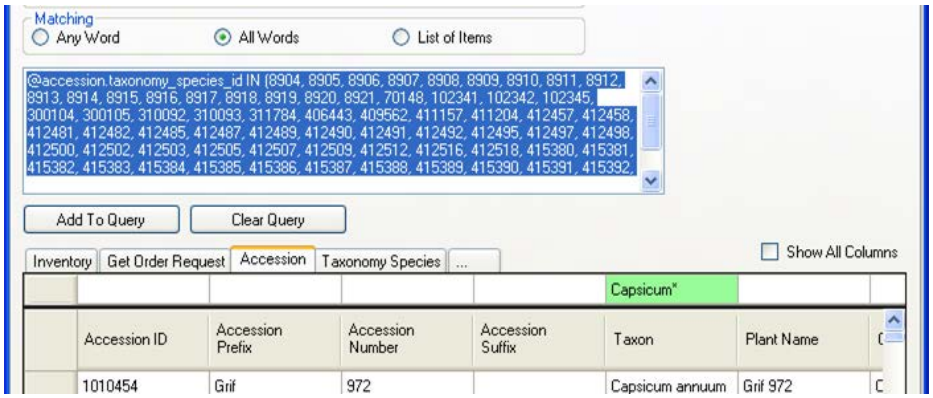


The resulting code generate by the QBE is shown on the following page. The code is quite different and does not resemble the code we just saw in the previous example.

@accession.taxonomy_species_id IN (8904, 8905, 8906, 8907, 8908, …

Code	Description
@accession	the table; the accession table in the database will be searched
taxonomy_species_id	the field name in the table
IN (8904, 8905, 8906, 8907, 8908, …	Since the taxonomy_species_id field is a key field, the search will use the related lookup table, taxonomy.species.lookup, to do a comparison and return all of the corresponding keys that match (8904, 8905, 8906, ...)

The illustration below is showing that records were found, as should be expected since the QBE had generated code with key values in the large text box:



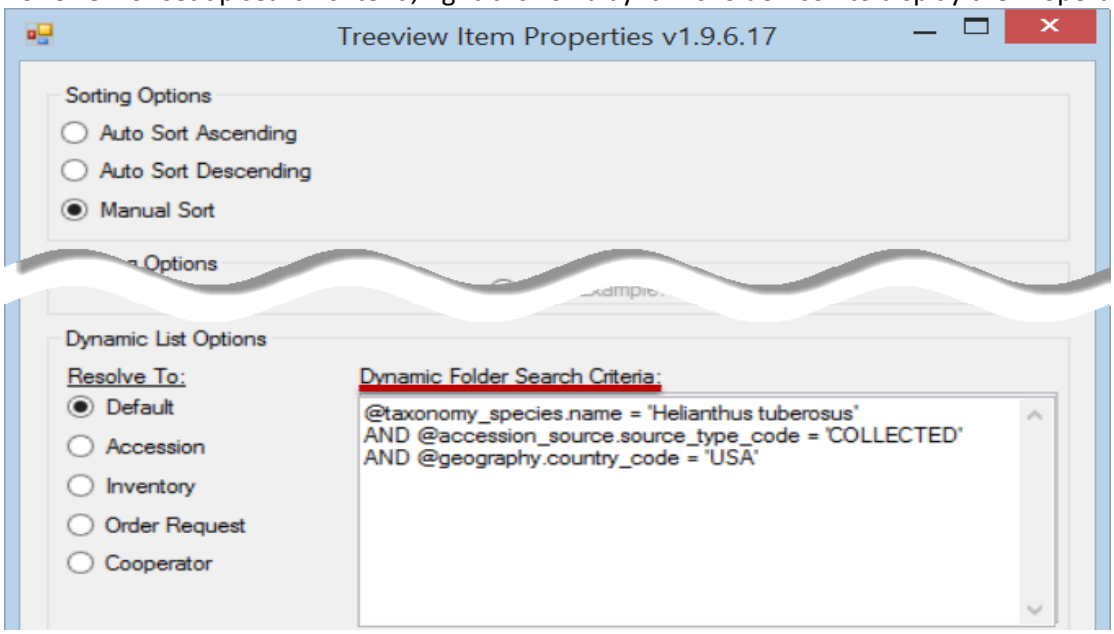
So you may be asking the question "Why *is* the code so different?" In both examples the user had typed the string "Capsicum*" –but the resulting code was not similar. In the first example, the Genus field is a text field – so the search was for any text similar to (**LIKE**) "Capsicum." In the second example, in the accession dataview, the search is using a field in a lookup table to find the numeric matches that correspond to Capsicum (IN 8904, 8905, 8906, 8907, 8908, …)

Follow the directions on the Search (…more) exercise.

Dynamic Folders (“dynamic queries,” “dynamic lists”)

There is a second folder type – dynamic. A dynamic folder contains embedded search criteria. Think of the dynamic folder as a stored query. A detailed description of Dynamic Folders is online.

To review or set up search criteria, right-click on a dynamic folder icon to display the Properties window.



Records Listed by Dynamic Folder

So why ever use a static folder? First, they are simpler in some respect. Secondly, many times you will want to review specific records, and *only those* records. Listed below are a few examples of when each folder type is preferable:

Situation	Folder Type
Keep track of what you are working on from one day to the next	Static
List of orders processed on a specific day	Static
Maintain a list of all accessions for a specific Taxon	Dynamic
Review a site’s inventory	Dynamic

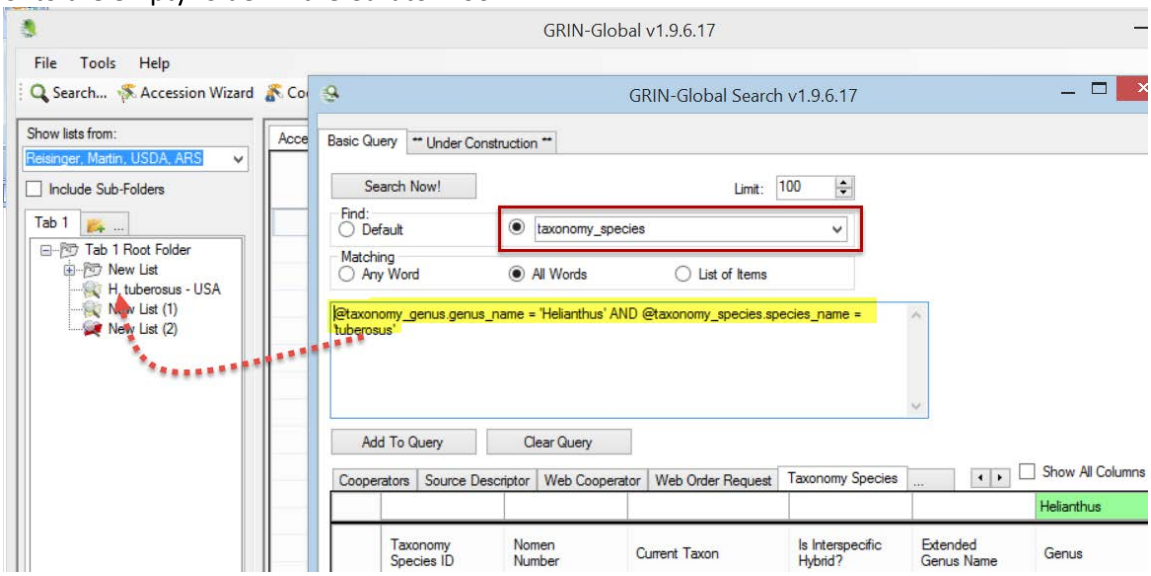
Examples of dynamic folders may be reviewed online in the document located on the GRIN-Global website at http://www.ars-grin.gov/npgs/gringlobal/docs/gg_dynamic_folders.pdf.

Steps in Creating Dynamic Folders

There are several methods for creating a dynamic folder. Each starts similarly: In the Curator Tool , create an empty folder.

Method 1 (Recommended method)

Switch to the Search Tool; create a query. Drag the *code* in the large text box (generated by the QBE) onto the empty folder in the Curator Tool.



Method 2

While still in the Curator Tool, right-click on the empty folder. Select **Properties** from the menu. Switch to the Search Tool; create a query. *Copy the code* in the large text box (generated by the QBE) into the **Dynamic Folder Search Criteria** box in the Curator Tool.

Refreshing a Dynamic Folder

If any new records are added to the GRIN-Global database that meet the folder’s criteria, the records will be displayed when the dynamic folder is the active folder and has been refreshed. You can refresh a dynamic folder by invoking any of the following methods:

- right-click on the folder and select the **Refresh List** command
- switch to another tab and then back to the tab with the dynamic folder
- click the Refresh Data button in the right panel
- press F5
- start the CT

When creating dynamic folders, (and using QBE search criteria), it is often easier to model a dynamic folder after another query which is not based on lookup keys . For example, this query:

@inventory_maint_policy.maintenance_name LIKE 'RUB%' AND @inventory.is_available = 'N'

can be copied into another folder and then edited. For example, a different maintenance policy name could be substituted in the **LIKE ‘RUB%’** clause.

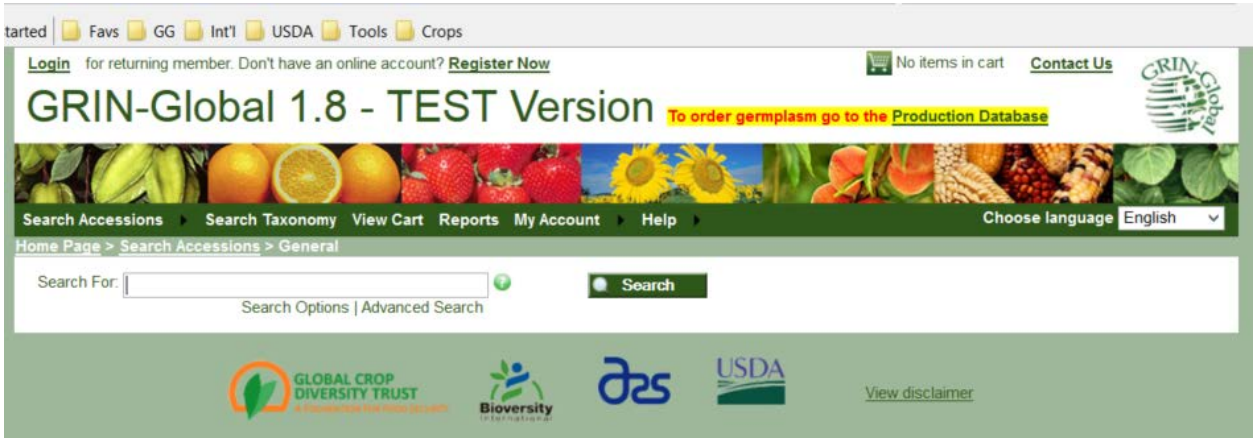
Practice by creating several dynamic folders.

Examples:

Find a range of accessions. (@accession.accession_number_part2 > 500000 AND @accession.accession_number_part2 < 500100)

Find inventory records created within a specific date range – for example, the range was between May 10 and May 16, 2015.

Public Website



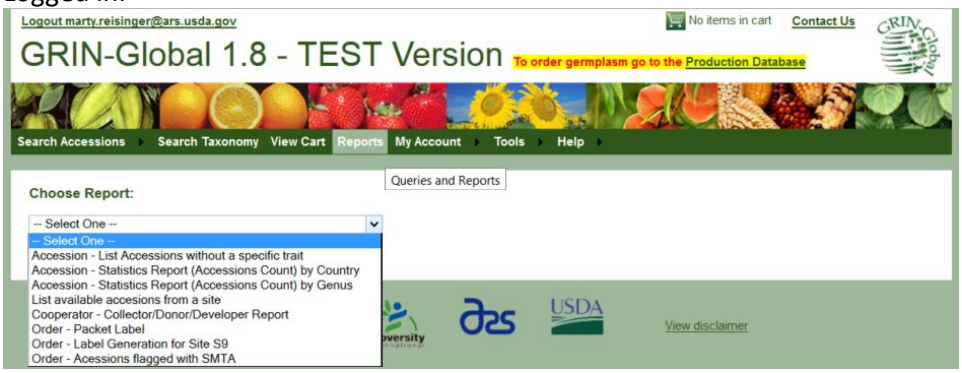
The Public Website (PW) is used by germplasm requestors to order germplasm from the genebank. However, it is also a very useful tool for genebank workers. You can search for accessions, observations, taxonomy, etc. The requestors can select desired accessions and add them to a "shopping cart."

A Public Website helpfile is available online and via the **Help** menu option.

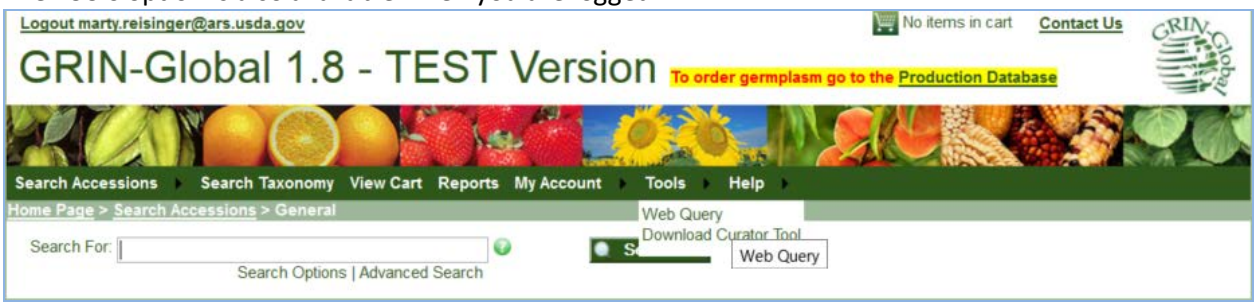
Several options are available "internally" to genebank workers. If you have been granted access, and are logged in, you can select reports not available to the public. There is also a "web query tool" which you can use to submit SQL commands to display data. (This is handy when there isn't an equivalent CT dataview available.)

Not logged in:

Logged in:



The **Tools** option is also available when you are logged in:



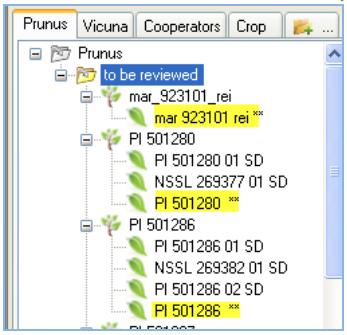
You can use the Web Query feature to submit SQL web queries. (The GG administrator links a Curator Tool user to the user's Web Account and also adds the user to the Web Users Group to enable this **Tools** feature.)

Inventory

A complete guide to GG Inventory is online.
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_inventory.pdf

Virtual (or System-Generated) Inventory Items

Whenever you review Accessions in the list panel, you will notice an inventory item with a double asterisk (**) next to its name. For every Accession record in the database, GRIN-Global automatically associates a virtual Inventory record.



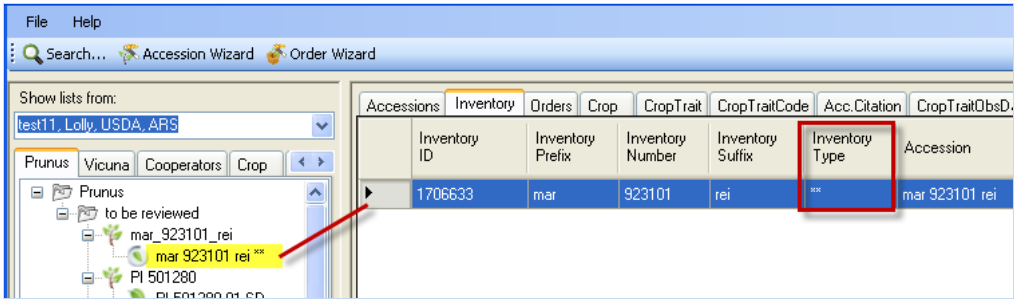
Inventory Lists

You can make lists of inventory items just as you do with accessions. Most likely you will have many different reasons for building inventory lists. For example, you could create an inventory list to track your current year's "grow out" and harvest

Virtual (or System-Generated) Inventory Items

Whenever you review Accessions in the list panel, you will notice an inventory item with a double asterisk (**) next to its name. For every Accession record in the database, GRIN-Global automatically associates a virtual Inventory record. The ** indicates that the inventory item was generated by the system. It is not referring to inventory records of physical germplasm.

In the **Inventory** dataview, the **Inventory Type** for virtual inventory records is also indicated with a ** Since these ** records are virtual, the quantiry fields such as Quantity-on_hand should be empty.



Prerequisite Data

In order to input inventory records, you must first have an accession to which the inventory relates. When inputting a new inventory record, there are five required fields:

- accession (the taxonomy and passport information is stored in the parent accession table and its related children tables)
- inventory prefix (in some organizations, because of organizational requirements, you may also be required to input an input number and/or a suffix)
- inventory type (The Code Group used to store the inventory type is called GERMPLASM _FORM) Example germplasm form codes include BD (Budwood), CT (Cutting), and SD Seed. (Each organization can edit the code list to meet its organizational needs.)

  Do not use ** since that type is reserved for the System Inventory records.
- inventory maintenance policy (a method for assigning a name to a rule for handling orders. For example, the rule can indicate how many units (propagules) the genebank site will distribute for an order of a given taxon and germplasm form.)
- availability status – must be one of the INVENTORY_AVAILABILITY_STATUS Code Group values in the Code Value table.

Purpose of the Inventory Maintenance Policies

Basically, an inventory maintenance policy determines how inventory will be processed for incoming germplasm orders that will use that inventory. **Inventory Maintenance Policy** records are added in the Curator Tool via the Inventory Maintenance Policy dataview.

Maintenance Name	Unit of Distribution
Form Type	Distribution Critical Amount
Unit of Quantity On Hand	Replenishment Critical Amount
Web Availability Note	Regeneration Method
Is Auto Deducted?	Curator
Distribution Default Form	Note
Standard Distribution Quantity	

The **Inventory Maintenance Policy** determines the owner of the Inventory record. (The cooperator in the **inventory_maint_policy.owned_by** field becomes the owner of any **Inventory** records that are created when using that policy**.)**

Use a consistent naming convention when naming your policies. For example, begin with a prefix, such as your site's code (examples: NC7-daucus, NC7-portulaca, NC7-quinoa...) You can then search for your policies by specifying the prefix in your search criteria.

What Determines Accession Availability?

Condition	Dataview **/ Field**	Value
Historic accessions, never available	Accession / **Status**	**INACTIVE**
Accession is an active accession in the genebank's collection	Accession / **Status**	**ACTIVE**
Accessions displayed on the PW	Accession / **Is Web Visible?**	**Y -** will be displayed **N -** will not be displayed
Inventory is Available	Inventory / **Is Available?**	**Y** – is available **N** – unavailable
Preferred inventory lot for distribution (since this is the "preferred lot," only one inventory lot should be marked with a "Y.")	Inventory / **Is Default Inventory?**	**Y** – preferred lot (selected by the Order Wizard by default)

Availability Status

The **Availability Status** field obtains its values from the **INVENTORY_AVAILABILITY_STATUS** Code Group. By searching this field, you can look for specific inventory situations, such as low inventory, young plants not available, etc.

A trigger exists for the **Availability Status** field. Also, in the Search Tool, **Availability Status** codes makes it possible to search for a particular group of records, based on a common status.

Fields	Value Before	Action	Value After
		Order is Filled (standard quantity is shipped)	
Quantity on Hand	80		--> 70
Distribution Critical Quantity	75		75
Is Auto Deducted?	Y		Y
Standard Distribution Quantity	10		10
Availability Status	Available		--> Low
Is Available?	Y		--> N

Use file exr_inventory.docx

Miscellaneous Inventory Topics

(The Inventory Guide has details about the inventory dataviews.)

Parent Inventories

When regenerating, the new inventory lot has a parent. The parent inventory name is easily obtained from the Inventory field in the predecessor record.

Naming Conventions

Use the example of some NPGS sites which have sophisticated naming guidelines for the inventory suffixes in order to track the heritage of the Inventory. Refer to the Inventory guide appendix.

Inventory Triggers

Inventory triggers help with data integrity. For example, one trigger checks inventory quantity fields to ensure none are negative.

Other Inventory dataviews

- **Inventory Actions**
- **Annotations** | **Attachments** | **Groups** | **Vouchers**

(Attachments – images – will be discussed after we cover Orders. Save any discussion for attachments until then.)

- **Viability** dataviews (below)
  - Creating lists of accessions for viability testing

  - Updating viability data
- **Quality Status**

Viability Testing

(Complete details on viability are included in the online Inventory document.)

Viability testing is typically done when:

- a new seed sample arrives at a genebank (and the sample has enough seed to be germinated)
- newly regenerated seed samples are being prepared for storage
- periodically to assure viability of seed lots ("maintenance testing")

The **Inventory Viability** dataview uses the table of seed germination results and other viability tests. Actual test procedures are contained in the method table. There are three viability dataviews in the Curator Tool: **Inventory Viability**, **Viability Rule**, and **Viability Data**.

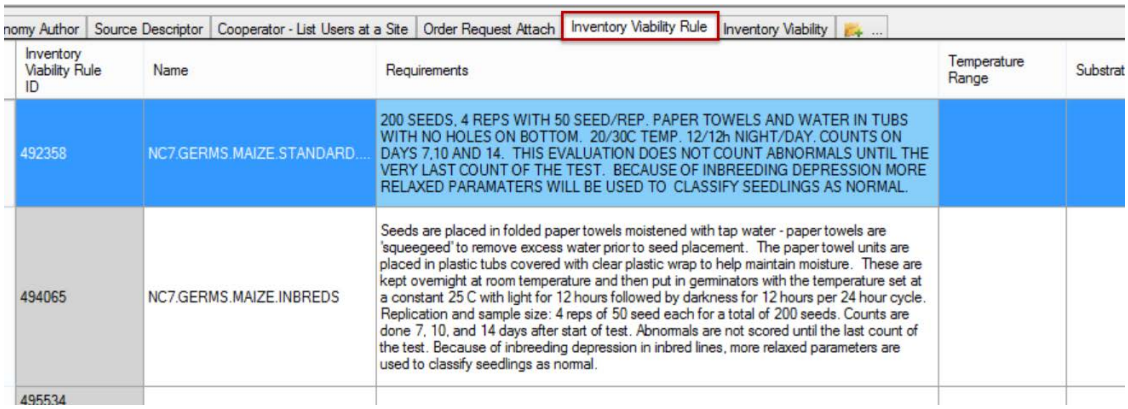
Eventually the **Viability** dataview will aggregate the data stored in the **Viability Data** dataview, but at the present time these dataviews are unrelated. (A trigger and a wizard are being created.)

For the storage germination test, a germination order is prepared when all the lots in a particular crop are ready for storage. This is usually done once a year after the material has been cleaned and is ready for storage (i.e. all the cucumber that were grown in 2014 will be germinated all at the same time – after which they are ready for storage).

For the maintenance germination tests, a germination order is usually prepared after reviewing a particular collection (such as maize) and checking which lots need testing (in the case of maize, it's every ten years).

Inventory Viability Rule

The **Inventory Viability Rule** describes the germination test conditions including the temperature range, the moisture, lighting, etc. (Note to GRIN users – in GRIN, this was the **Environment** name.)



Inventory Viability

Refer to the GG online dictionary for descriptions of each field (or when viewing the dataview, roll the mouse over the heading to display the column description).

Taxonomy Author	Source Descriptor	Cooperator - List Users at a Site	Order Request Attach	Inventory Viability Rule	Inventory Viability	...

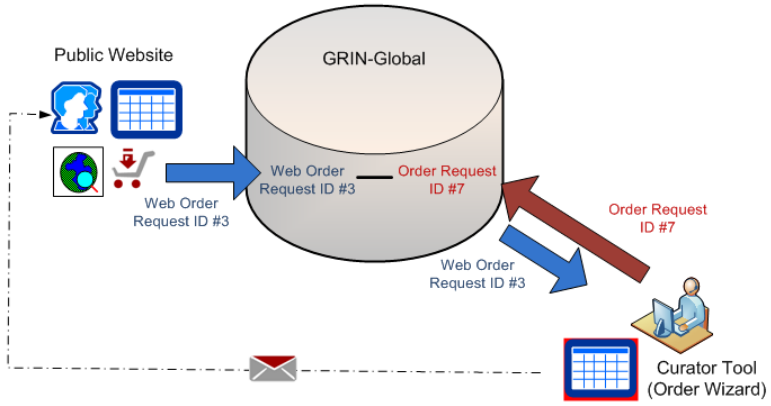
Inventory Viability ID	Inventory Viability Rule	Inventory	Test Date Format	Tested Date	Percent Normal	Percent Abnormal	Percent Dormant	Percent Viable	Vigor Rating	Sample Count
1118258	NC7.GERMS.MAIZ...	Ames 15929 03n...	mm/dd/yyyy	03/03/2004	92	0	0	92		200
1766132	NC7.GERMS.MAIZ...	Ames 15929 03n...	mm/dd/yyyy	02/08/2012	94	1	0	94		200

Orders (Germplasm Requests)

A complete guide to GG Order Process is online.
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_order_processing.pdf

Overview

n GG, the germplasm requestors generally submit their orders via the GG Public Website. (They could also submit orders via the telephone or email if the organization allows that.) Using the Curator Tool's Order Wizard, genebank personnel responsible for order fulfillment can review those incoming *web* orders and convert them into *standard* GRIN-Global orders.



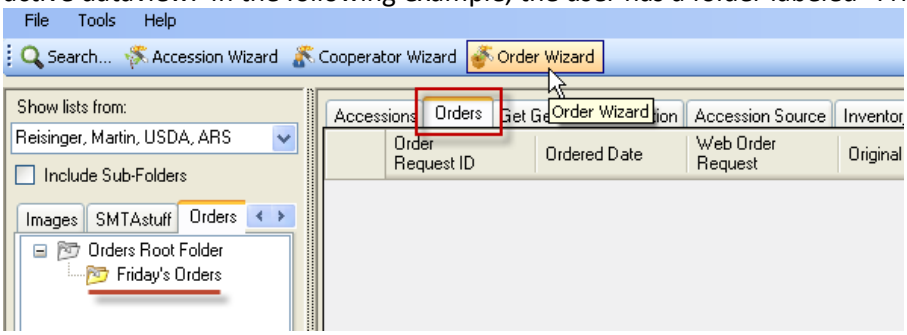
During this order process, the Web Order Request record becomes the basis for a GRIN-Global Order record. The Web Order Request record's ID is its primary key field; the GG Order Request record created from it will have its own unique record ID. Although the records are inter-related, the two record IDs (and the records) are distinct.

Also, your Public Website account is completely separate from your Curator Tool account. After you create a PW account, you can request the GG administrator to associate the two together – they remain separate, but as an "internal" user you will be extended additional website privileges (tools and additional reports).

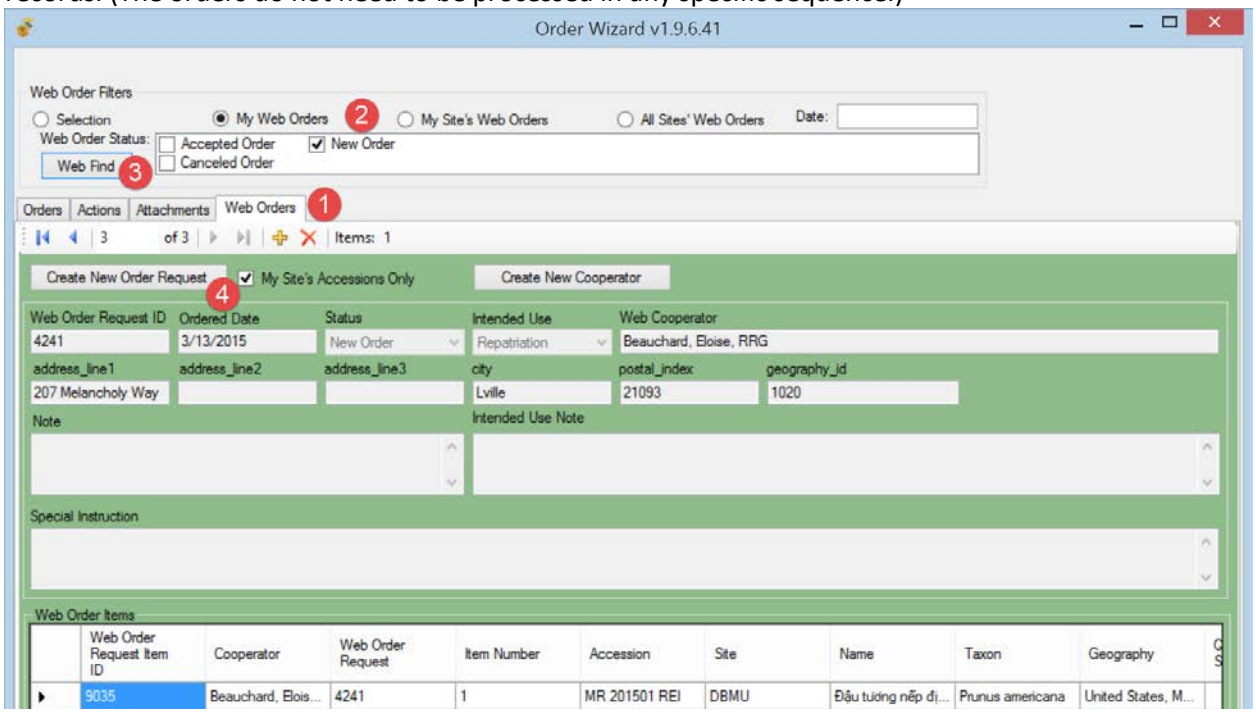
Order Wizard

Although not absolutely necessary, before invoking the **Order Wizard**, in the Curator Tool, decide what list folder in the left panel will be your active list. Another consideration not essential (but recommended), before clicking the Order Wizard button, open the **Order Request** dataview as the

active dataview. In the following example, the user has a folder labeled "Friday's Orders" ready:



In the example below, there are three new web orders. (The Navigation Bar indicates "3 of 3.") The person using the Order Wizard can review each web order using the Navigation bar to move among the records. (The orders do not need to be processed in any specific sequence.)



Save frequently, and save often! (when using the Order Wizard). Also, use the **Save** button when initially creating the order; otherwise you will receive an error message.

There are multiple approaches that can be taken to assign inventory to the order.

Method	Approach	Description
a	Input an Accession key, an Accession Name, or a Taxon in the Order Wizard's inventory Picker window	Use this approach when you know the desired Accession ID, Name, or Taxon information. The wizard's Inventory Picker will accept any one of these three fields. If there is a match, you then decide and select which inventory to apply to the order.

Method	Approach	Description
b	Drag either accession records or inventory records from the Search Tool grid	Dragging inventory records rather than accession records will perform somewhat better (when selecting accessions, the software must perform additional processing to select the inventory)
c	Drag accession key(s) or inventory key(s) from a spreadsheet, Word doc, or an email	An *accession* key is comprised of three fields: Accession Prefix — Accession Number — Accession Suffix The wizard interprets an *inventory* key based on four fields: Inventory Prefix — Inventory Number — Inventory Suffix — Inventory Type
d	Drag *accession* or *inventory* records from the Curator Tool	The wizard will find all the inventory related to the accession and will highlight the inventory that is available and ready for distribution.

As of version 1.9.5, **Order Request Items** in the Order Wizard grid can be *copied (using Ctrl-C) into* a spreadsheet. At this time, you cannot paste **Order Request Items** *into* the OW grid.

Actions (Order Actions)

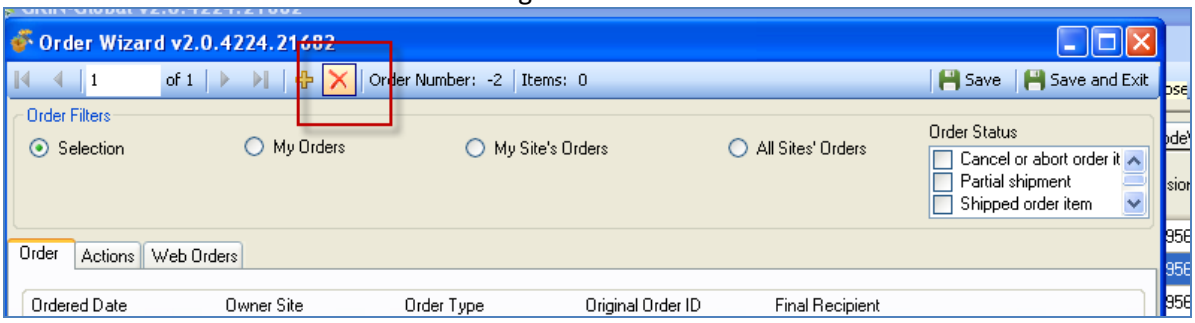
Various actions may be applied to an order request; essentially an action indicates that some event related to the order has occurred. For example, a **New Order** action is automatically generated when the web order is converted to a standard order. Similarly, an action of **Order Shipped** is automatically generated when an order is shipped. Order Actions are used to document the processing and current status of the order.

Action Code	Title
NEW	New Order
PENDING	Order pending
CURALERTED	Curator alerted about order
CURCLEARED	Curator cleared an order
PATHSEED	Path test needed and sent
PATHPASSED	Pathologist approved the order
ORDFILLED	Order filled ready to ship

The action codes are stored in the **ORDER_REQUEST_ACTION** code group which is maintained by the GRIN-Global administrator.

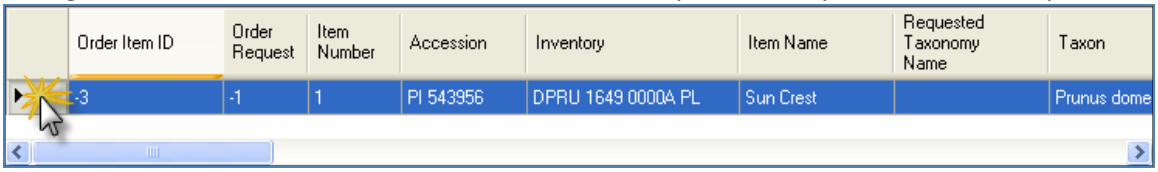
Deleting an Order *Record*

Click the delete button on the record's navigation bar to delete the current order record:



Deleting an Order *Item*

If you need to delete an order item, select the item's row (click on the left row header cell) in the order item grid at the bottom of the wizard window, and then press the keyboard's **Delete** key.



Attachments

Attachment files can be submitted when a germplasm requestor submits his order. If the order has been shipped, additional items cannot be attached to the order. (Note: future development work will improve attachment processing.)

Public Website **Order Detail** page displaying the attachments submitted with the web order:

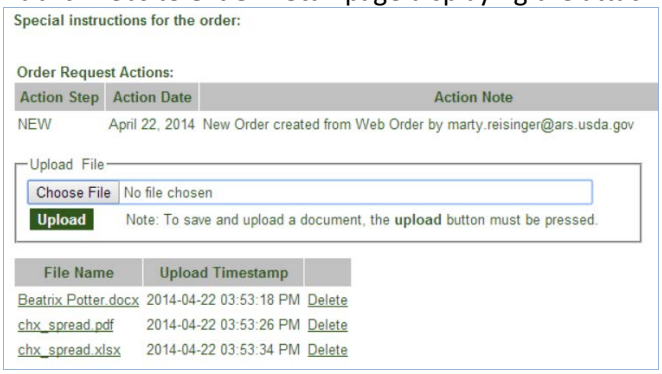
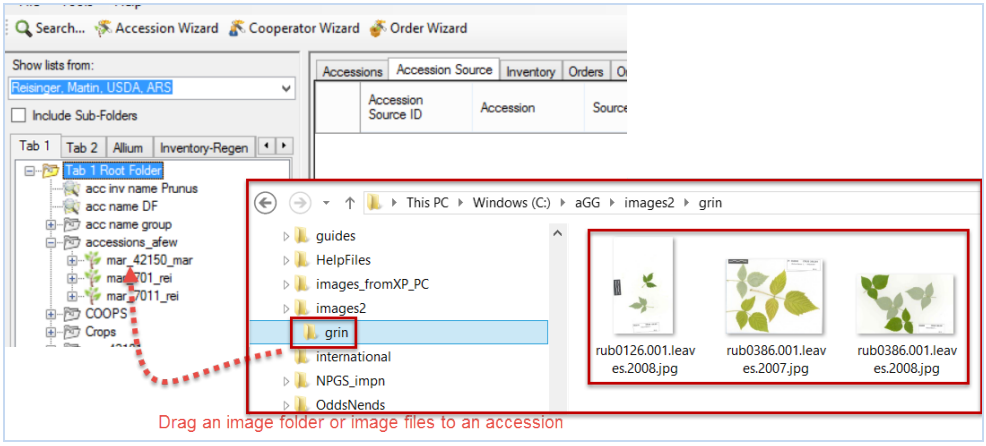


Image Handling

Image files can be dragged into the Curator Tool from Windows Explorer.



There are several dataviews with "_attach" as their suffix, implying that they can accept attachments similar to accession_inventory_attach. At the present time they cannot. Some additional code is planned for the Curator Tool to enable this capability. Also, other file types will be handled, including PDFs.

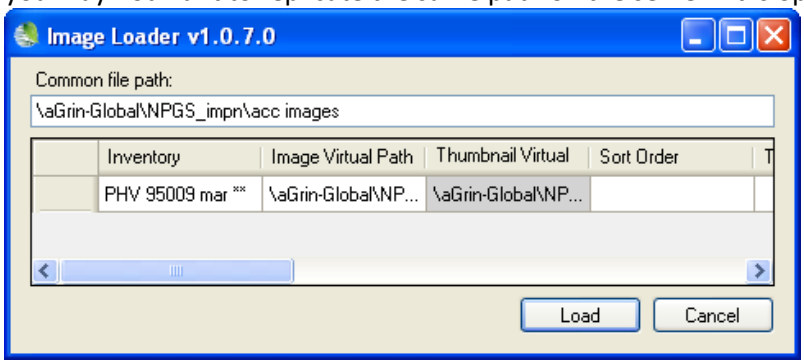
Also -- Image attachments work with accessions or inventory. If you intend to associate the images with the accession, attach it to the system inventory (**) record.

When a folder is dragged, its subfolders will also be included.

When the database is running locally, the copy of the images can be stored on a local hard drive, a network drive using either a "mapped drive letter" or a UNC drive such as \\ncrpis-farm\nc7pc\2002\PI_613086_02ncai01_SD. ("UNC" - Windows Universal Naming Convention).

Indicating Where the Image Files Will be Stored

The ImageLoader window displays a text box for a **Common file path**. In the process of uploading the image files, you can indicate the location where the files will be stored. By default, the destination location will have a path that mirrors the source location. Depending on your needs and preference, you may not want to replicate the same path on the server. It is optional to change this field.



Observations & Descriptors (Traits)

A complete guide to GG Observations & Descriptors is online.
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_observations_and_descriptors.pdf

Get Crop Trait Observation

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.

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.)

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 = "**")

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 GG Public Website user will not be able to search this observation data, and the observation record is not displayed in the observation detail page.

The instructor will indicate what Crop and Crop traits to use. You will record some observations.

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 order in inputting the data when 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

The complete descriptions of these dataviews are available in the online Observations and Descriptors document.

Reports

Curator Tool Reports

When an organization installs GRIN-Global, Curator Tool report files that are bundled with GG can also be installed. Additionally, each organization has the capability to create its own custom reports to meet its specific needs.

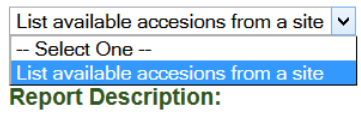
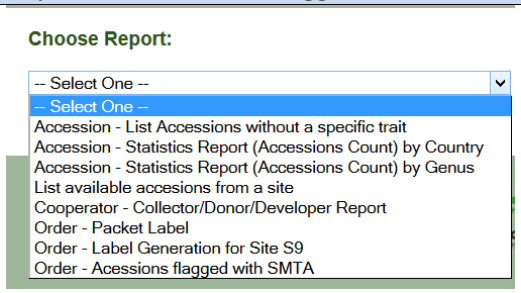
In the CT, reports have been designed to work with specific dataviews to display specific data. (see http://www.ars-grin.gov/npgs/gringlobal/docs/gg_reports.xlsx)

One tool used to create these .rpt files is **Crystal Reports** (from SAP). These files all have an **.rpt** file extension.

For example, the five inventory reports are displayed under the Reports option when the Inventory dataview is the active dataview (the menu was invoked with a right-click action by the user):

Public Website Reports

Additionally, there are reports designed to work within the **Reports** feature on the Public Website. The Public Website also has a **Reports** menu option - all PW users will see reports that are publicly available. Currently only one report is available to public users. However, additional PW reports are also available, depending on two conditions: the genebank user must be logged in and the user account must have been given access to these "internal" reports.

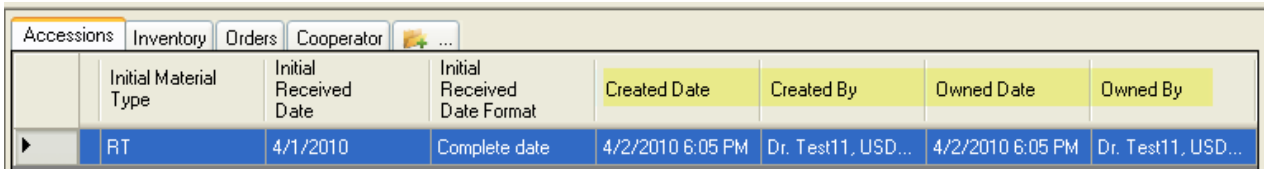
Reports Available to all PW Users	Reports Available to a Logged-in User
	

SQL Reports

A third group of "reports" are the results of read-only SQL queries. Users added by the GG Admin to the Web Query Users Group will be able to run SQL read-only queries to extract data. The online document **GG Library**, has a section containing SQL examples. (see http://www.ars-grin.gov/npgs/gringlobal/docs/gg_library.pdf)

Security

An owner typically can update or delete records which she has created.

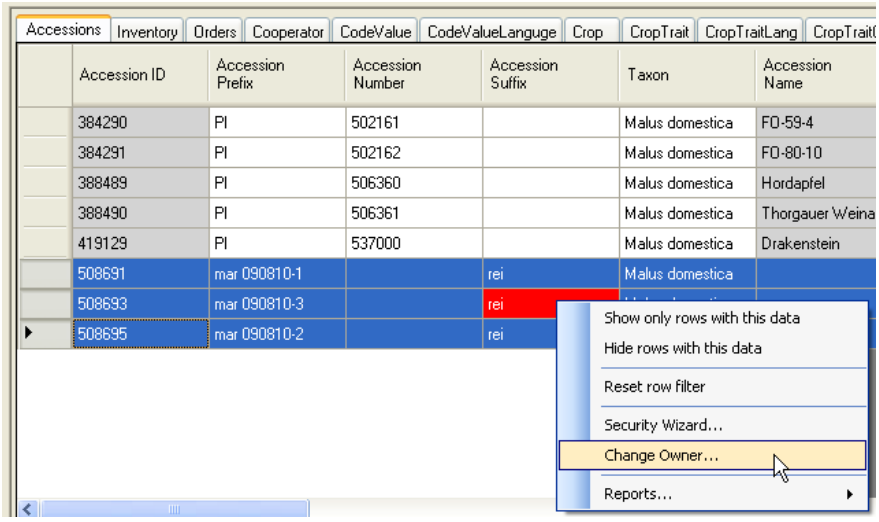


In the current CT security model, there can be only one owner per record. However, the owner can provide permissions (Read, Update, Create, Delete) to multiple users.

An owner can also transfer ownership to another user. This is especially useful in specific situations. For example, the Inventory record, by default, is assigned the same owner as the owner of the Inventory Maintenance Policy that was used to create the Inventory record. Similarly, Trait Observations inherit the ownership from the Inventory (and hence the Inventory Maintenance Policy records). Someone who creates an observation may not be the owner, and if he needs to change the record, hen eeds to be either given ownership, or permission by the owner to update the record.

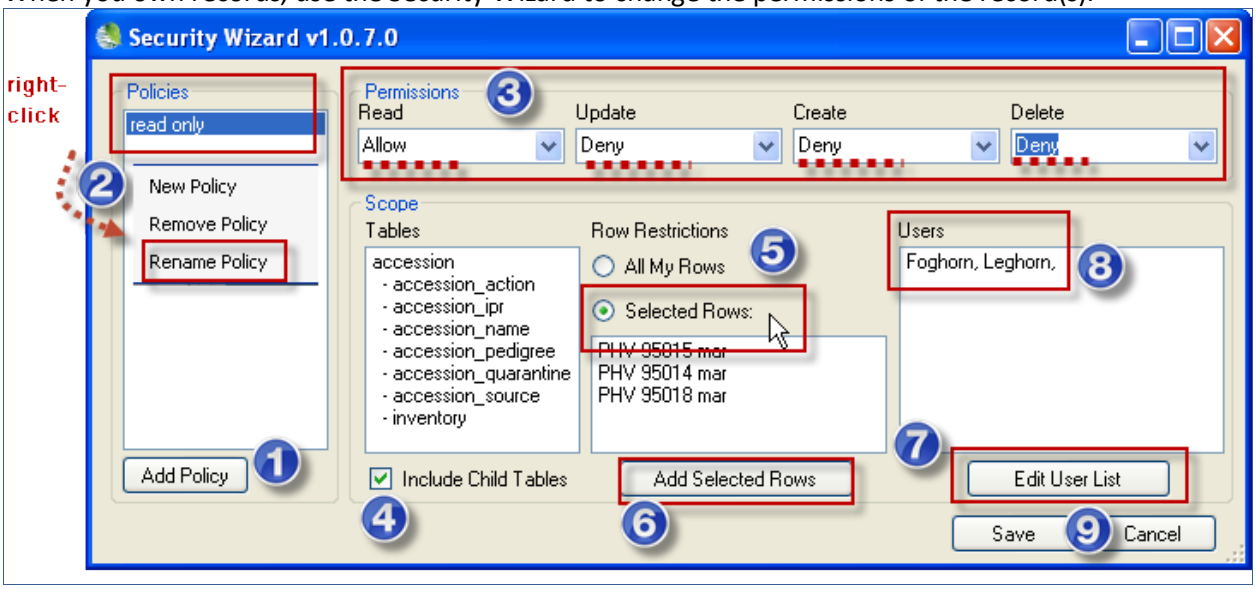
In a dataview, select the rows (records) that you intend to transfer ownership; right-click and select

Change Owner…



Review and then change the ownership information for one or two accessions which you own. Assign ownership to another workshop participant.

When you own records, use the Security Wizard to change the permissions of the record(s).



You generally complete the wizard, staring from left to right. “Rows” is used in the wizard as a synonym for records.

Each permission (Read, Update, Create, Delete) can have one of three values:

Value	Description
Allow	Allows access
Deny	Denies access
Inherit	Neither allows nor denies access; access is situational; it is inherited from a previous definition (typically the permission value of the parent table)

Inventory Maintenance Policies can be shared across the organization, but remember that when a new inventory record is created, and the Inventory Maintenance Policy is applied to the new record, the **Curator** field in the **Inventory Maintenance Policy** record determines the owner of the inventory record.

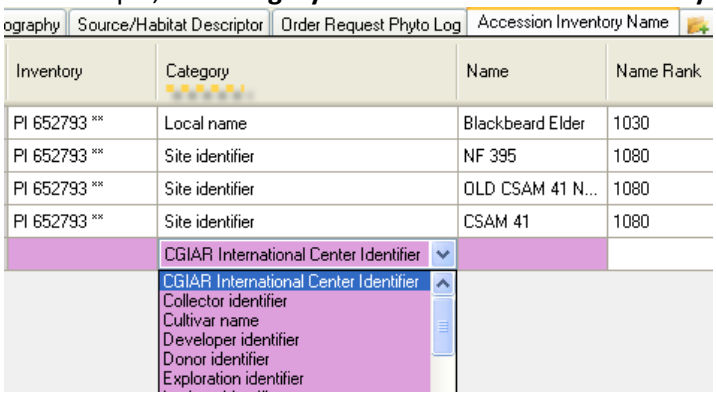
Work with a partner. Each of you will use the Security Wizard to apply the “Deny” updating or Deleting ability to a couple of records. After you have changed the permission, tell your partner the Accession IDs of the records the permission. The partner will attempt to Update or Delete the record(s).

Codes and Code Groups

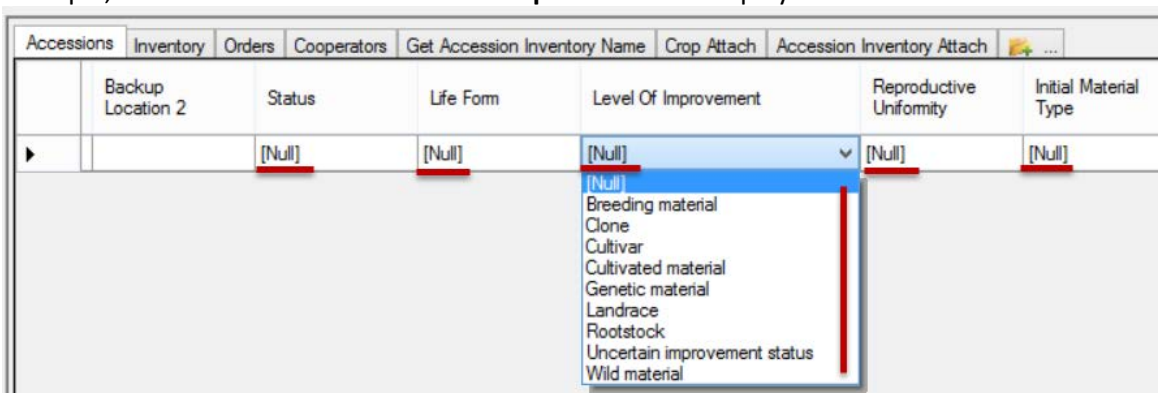
Background Information

Many of the CT dataviews use dropdowns to assist in selecting valid data – the fields do not allow random text data to be entered, but instead require a value from a pre-populated set of values. Various codes and data values are stored in the **Code Group** tables.

For example, the **Category** field in the **Accession Inventory Name** dataview uses codes:



A second example: Five fields in the **Accession** dataview that use codes are shown below. In the example, the user clicked on the **Level Of Improvement** to display and then select a code:



Only the GG administrator can add or edit the codes, ensuring consistency and integrity. As a CT user, if you need a code to adequately describe a record, contact your GG administrator or follow your organization's procedure for establishing codes.

Taxonomy

Taxonomy

When an organization installs GRIN-Global, the administrator has the option to also download the Taxonomy and Geography data copied from the U.S. GRIN system. This is recommended since then the taxonomy and geography information is readily available. An organization can also add its own data as it desires.

The administrator has a tool, the Admin Tool, which he can use to import spreadsheets of taxonomy (or geography) data. But a CT user can also add taxonomy records. At a minimum, every Species record must have a parent Genus which in turn must have a parent Family record.

Key Points

- an organization can load the GRIN Taxonomy when it installs the GG database
- this GRIN taxonomy can be complemented with additional taxonomy records supplied by the organization
- someone in the organization should have the responsibility for the taxonomy data
- to load Taxonomy, you need to have the Family, the Genus, and the Species at a minimum
- the AT's Import Wizard can be used by the GG Admin to load Taxonomy data
- you must have the Taxonomy in the DB before you can add an accession
- Lookup tables - need to be current …

"Other" Dataviews

Literature references | Citations | Methods | Genetic Markers

Literature

This dataview accesses the table of valid books and journals used in literature citations for genera, taxa, accessions, methods, etc. in the database. The abbreviations used should follow recognized standards either from the library field or from taxonomy.

Citations

Table of valid books and journals used in literature citations for genera, taxa, accessions, evaluations, etc. in the database. The abbreviations used should follow recognized standards either from the library field or from taxonomy.

Methods

This dataview accesses the table of methods and procedures which are used in determining the crop specific attributes of the germplasm. Each environment used in an evaluation should have its own record. The method is primarily used for crop trait evaluations. (The inventory_viability tables are used to store germination /viability procedures and the viability test results.)

Method Map

The dataview accesses the method_map table which can handle a many-to-many relationship between the cooperator(s) who participated and the methods. (More than one cooperator can be involved with a method.)

Genetic Markers

Table of genetic markers that are crop-specific. Ideally, markers are published (link to citation table) and have data for known standard controls available. The data in this table is general in nature, and not specific to a specific experiment or evaluation.

Source Habitat Descriptors

A complete guide to GG Source Habitat Descriptors is online.
http://www.ars-grin.gov/npgs/gringlobal/docs/gg_source_habitat_descriptors.pdf

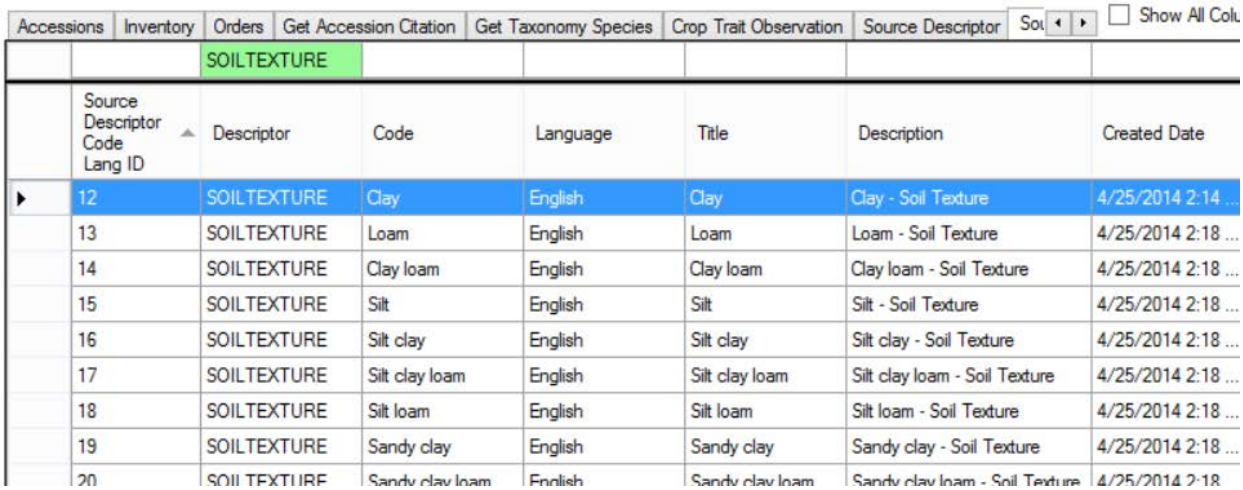
In the GG schema, a core set of collection site/habitat information is in the accession_source table, while five new source_ tables have been added. The accession_source dataview has fields such as latitude, longitude, number of plants sampled, etc. The new tables make it possible to add detailed information about the collection site. Genebank personnel can create custom habitat source descriptors and codes as needed to record collection site data.

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. An organization could record Source/Habitat descriptors such as Slope, Aspect, Soil pH, and Soil Texture.

The following example illustrates the table for SOILTEXTURE as described in the Bioversity's Developing Crop Descriptor Lists (Technical Bulletin #13, 2007):

Numeric code	Descriptor state	Numeric code	Descriptor state
1	Clay	12	Coarse sandy loam
2	Loam	13	Loamy sand
3	Clay loam	14	Loamy very fine sand
4	Silt	15	Loamy fine sand
5	Silty clay	16	Loamy coarse sand
6	Silty clay loam	17	Very fine sand
7	Silt loam	18	Fine sand
8	Sandy clay	19	Medium sand
9	Sandy clay loam	20	Coarse sand
10	Sandy loam	21	Sand, unsorted
11	Fine sandy loam	22	Sand, unspecified

This screen capture illustrates the GG English implementation of the SOILTEXTURE descriptor:



Source Descriptor Code Lang ID	Descriptor	Code	Language	Title	Description	Created Date
12	SOILTEXTURE	Clay	English	Clay	Clay - Soil Texture	4/25/2014 2:14 ...
13	SOILTEXTURE	Loam	English	Loam	Loam - Soil Texture	4/25/2014 2:18 ...
14	SOILTEXTURE	Clay loam	English	Clay loam	Clay loam - Soil Texture	4/25/2014 2:18 ...
15	SOILTEXTURE	Silt	English	Silt	Silt - Soil Texture	4/25/2014 2:18 ...
16	SOILTEXTURE	Silt clay	English	Silt clay	Silt clay - Soil Texture	4/25/2014 2:18 ...
17	SOILTEXTURE	Silt clay loam	English	Silt clay loam	Silt clay loam - Soil Texture	4/25/2014 2:18 ...
18	SOILTEXTURE	Silt loam	English	Silt loam	Silt loam - Soil Texture	4/25/2014 2:18 ...
19	SOILTEXTURE	Sandy clay	English	Sandy clay	Sandy clay - Soil Texture	4/25/2014 2:18 ...
20	SOILTEXTURE	Sandy clay loam	English	Sandy clay loam	Sandy clay loam - Soil Texture	4/25/2014 2:18

Appendix: Other GRIN-Global Documents

Accessions and Passport Data

Accession overview and instructions for adding, editing, and deleting accession data [document]

Multicrop Passport Descriptors

The FAO/BIOVERSITY Multi-Crop Passport Descriptors (MCPD V.2) is the result of a thorough revision of the original publication released by FAO/IPGRI in 2001. This document describes how GRIN-Global handles these descriptors. [document]

Source Habitat Observations

Five new (after version 1.0.7) 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 personnel can create custom descriptors and codes for an unlimited amount of detail on the collection site. [document]

Inventory

Overview of the Inventory-related dataviews and inventory processing. Inventory is the physical stock for each accession, whereas accession tables contain, among other items, the passport information and other descriptors.

An accession may have several inventory samples. For example, there may be different generations, storage types, locations, sites, etc. [document]

Order Processing

Explains how to process orders and use the Order Wizard [document]

Observations: Crop Descriptors (Traits) & Observations

Examples explain the relationship among the dataviews in the family of Crop dataviews [document]

English vs. ENG

An "alternative" language to English was developed specifically for the National Plant Germplasm System (NPGS) – some of the GRIN users prefer to use Codes rather than the longer Titles when entering Observations and other data; this document explains how to use the ENG language to accomplish this. [document]