Recommended GRIN-Global Procedures - Startup & Ongoing

Revision Date
September 3, 2024

Appendix A contains this document's revision notes.

This document is currently divided into two main sections: the first section contains brief overviews to GRIN-Global (GG) elements and links to other supporting documents which will be useful to any organization planning to test or implement GG; the second section focuses on the steps that each NPGS site should take prior to NPGS implementation. NPGS readers can skip directly to the second section to review the steps their site should follow for GG implementation, but consider using the first section as a reference.

The intended audience for this document is the person or staff who will be administering GRIN-Global for the organization. Lead documentation staff should also find this document useful.

The webpage: https://www.grin-global.org contains links to many GRIN-Global references, including the guides mentioned in this document. Refer to the menu options "Documentation" and "Training." Use the links to launch and review the GRIN-Global guides, videos, and other resources.

NPGS users – skip to the NPGS section.

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Installation Options

Install GRIN-Global

Genebanks typically use GG in a networked environment. (It is possible to run a complete GG system on a stand-alone PC, as long as all necessary requirements are fulfilled.)

Networked

When installing to a network, the administrator completes two different installations: she first installs the complete suite of software on the server; then on each user PC the admin (or the user) installs the Curator Tool (CT). (During the installation of the CT, the GG Search Tool (ST) also installs automatically.)

The Curator Tool installation file is a self-extracting .exe file.

Stand-Alone PC

If the GG database is to be installed on a single PC, the entire suite of the GG software must be installed on that PC: the Server software (which uses Microsoft's IIS), the database, and the CT and ST. (This does not apply to NPGS.)

Public Website

To set up GRIN-Global for the public, that is, for breeders and researchers who will be ordering germplasm, a public URL needs to be established so that people requesting germplasm can use their browser to point to the GG public website. These external germplasm consumers (external to the genebank organization) do not need any software installed on their PCs; they just need internet access to the organization's GG website.

Administrators: Complete directions for installing GG are detailed in the GRIN-Global Installation Guide.

Overview of the Data Required at Start Up

When an organization is starting with a new, empty GRIN-Global database, it is necessary to populate some of the GG ancillary tables. These supporting tables do not contain the base curatorial data (accessions, inventory, orders, etc.), but rather taxonomy information, codes, and other GG system information.

In any case, either via the Admin Tool or the Curator Tool, the GG administrator will need to populate certain tables with data. What kinds of data? Taxonomy was mentioned above, but other information such as Sites, Cooperators, Region and Geography values, and Inventory Maintenance Policies, etc. must be populated.

Some required data is automatically installed when GRIN-Global is installed. For example, there are two default users automatically installed with a new system: **Administrator** and **Guest**. A default Site Code (**SYS** for system) is also installed. Do not delete any of these default records.

Security
When GRIN-Global is initially installed, security is enabled by default. Some organizations may desire to permanently disable the security feature, although this is not recommended. However, during the initial installation process, you may decide to *temporarily* disable security in order that records owned by the administrator can be edited and deleted. To disable security, in the AT, in the **Web Application** node, double-click on the **DisableSecurity** parameter and change from the default "False" to "True."

Security (ownership and permissions) is described in detail in two documents – the Admin Guide and the Curator Tool User Guide. A GRIN-Global administrator should review both of these sections. Furthermore, users will need to be trained on the various security options available to them. Briefly, every record has one owner; the owner can specify permissions.   That is, the owner of the record decides which users may read, update, and delete records that he or she owns.

Import Wizard
You should be aware that the Import Wizard in the Admin Tool the Wizard has not been updated for some time to keep up with the current schema. However, the Admin Tool's Import Wizard is handy for *initially* loading some data into a new GRIN-Global system. Emphasizing what has been highlighted in the Import Wizard Guide ("the Cookbook for Data Importing"), this wizard is not perfect. For example, it only adds and updates records; the Import Wizard cannot be used to delete records.

In general, when using the Import Wizard, follow the order suggested by the numbered dataviews. The Import Wizard dataviews useful for initially bulk loading data:

You can import various types of GRIN-Global data.

Please select one from the following list to proceed:

-- Select One --

-- Select One --
00 - Name Groups - Import Name groups for names
01 - Code Groups and Code Values - Save language-specific verbiage for code_value data
02 - Site Data - Import Site Data
03 - Region Data - Import Region Data
04 - Geography Data - Import Geographic Data
05 - Cooperator Data - Save Cooperator Data
06a - Taxonomy Family - Import Taxonomy Family data
06b - Taxonomy Genus - Import Taxonomy Genus
06c - Taxonomy Species - Import Taxonomy Species
07 - Crop Trait (Characterization / Evaluation Descriptors) - Import language-specific verbiage for crop traits and
08 - Methods - Import Methods
09 - Accessions with backup sites - Save accession-level data
09b - Accession IPR (Intellectual Property Rights) - Accession IPR (Intellectual Property Rights) Data
09c - Accession sources - Accession source data
10 - Inventory Maintenance Policy - Import Inventory Maintenance Policy Data
11 - Inventory Data - Import Inventory Data with Parent and Backup lots.
11b - Accession names with inventory_id - Accession Inventory name
12 - Observation Data - Import Observation Data

Taxonomy

Before inputting an accession (and its passport data), taxonomy information must be in the database (the user selects the accession's taxonomy from a list when entering an accession record). This ensures that the taxonomy is spelled consistently and correctly. Taxonomy is just one example of requisite data.

One option when installing GG is to include the taxonomy data. Complete directions for downloading the taxonomy and geography data are detailed in the *Installation Guide,* but the basic idea is for the administrator to hold the **Ctrl + Shift** keys *before clicking* the **Download/Install** button when using the GG Updater program to install the server components.

Downloading Taxonomy and Geography data is optional when installing GG. The Taxonomic data is the same data used by the U.S. National Plant Germplasm System (NPSGS) GRIN/GRIN-Global systems.

By installing the NPGS taxonomy tables, an organization is not restricted to using this taxonomy "as is" – in theory any organization can remove any taxonomy data from the GG tables on their server and add their own taxonomy as needed. Note that other institutes, including the Crop Trust (in Genesys) use the taxonomy "as is." The default taxonomy records that come with a GG installation have all been vetted by a USDA taxonomist. These tables are under constant revision and ideally an organization using GG will keep installing the latest GG version to be up to date. GG

When inputting a new Taxonomy Species record, be sure that it has its requisite Genus and Family records. Conversely, if you are going to delete any Taxonomy Family records, you must first delete any children Species and then Genus records that relate to that Family.

Codes and Code Groups

Many codes are used throughout the GG system; during the installation, a default set of Code Groups and their codes are installed. An organization new to GG should review the codes and edit, add, or delete them to match the organization's specific needs *before* adding accessions, inventory, and germplasm orders.

It is simpler for the GG administrator to delete the codes during installation rather than later. As curatorial data gets added to the database, records may be created using the codes that the organization would prefer not using.

In the Curator Tool, Code groups are easily recognizable – when editing a record, a dropdown displays choices (the codes – the possible values for that field) when clicked:
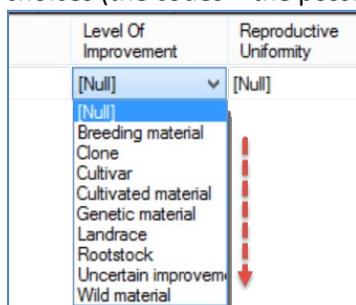
Also, when you position the mouse over the heading, the rollover tooltip will indicate the respective Code Group:
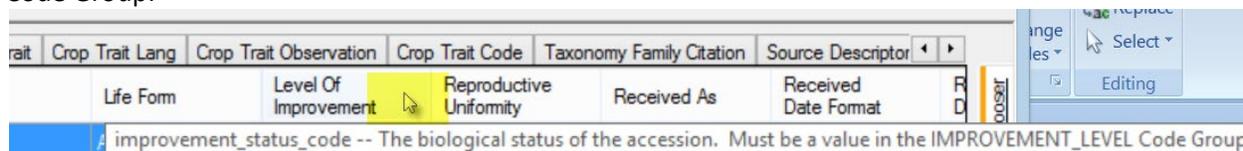
Code editing is generally done manually within the GG Admin Tool.
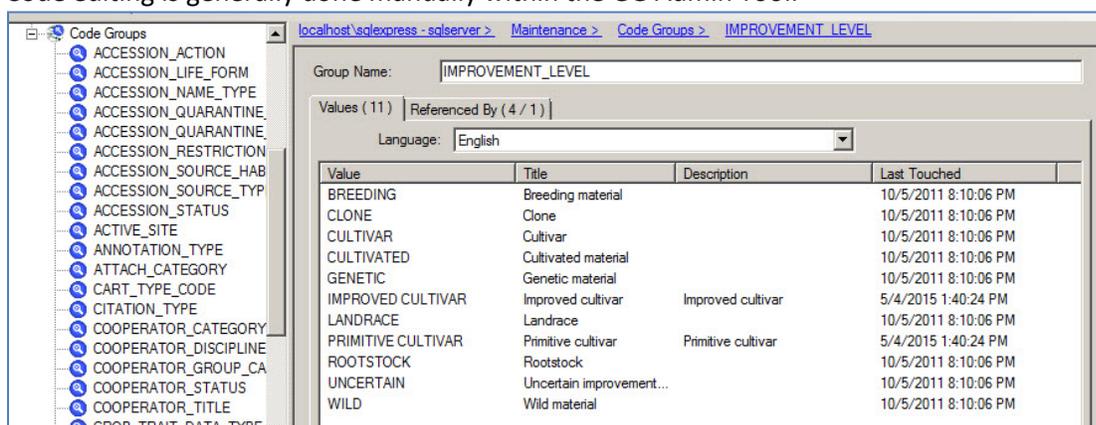
As an alternative to using the AT Code editor, when initially reviewing /editing the codes installed with GG, you can use the Curator Tool's **Get Code Value** and **Get Code Value Language** dataviews. An advantage with using the CT is you can edit multiple records at the same time (and use "drag and drop" to move back and forth from a spreadsheet).

By design, the **Get Code Value** and **Get Code Value Language** dataviews are read-only. In order to edit the records in the CT, use the Admin Tool to change the read-only attribute. In the AT, open the dataviews, switch to the **Properties** tab, temporarily *un*check the **Is Read Only** checkbox. In the **Fields** tab, uncheck the fields that will be edited. For example, in the **Get Code Value** dataview, you will want to edit the **group_name** and **value** fields.

When deleting codes, delete the children **Get Code Value Language** records first, before deleting the corresponding **Get Code Value** records.

Remember to reset the **Read Only** properties when you have completed the code editing!

There are many **Code Groups** and codes used throughout the GRIN-Global system. An organization is not restricted to using these codes. Before any accession data is entered into the system, the GG administrator should review these codes and consider deleting codes the organization will never use and adding additional codes matching the organization's need. However, do not remove any of the *Code Groups with the exception of a few* Code Groups that can be removed since they are specific to NPGS site inventory dataviews.

There is no compelling reason to delete the NPGS Code Groups, and they can serve as examples to an organization learning how to implement GG. If the NPGS specific dataviews are never used, the user will never see these groups.

The prefixes used for NPGS-specific Code Groups are:
GENEVA_   NC7_   NE9_   NSSL_   OPGC_   PARL_   S9_   W6_

 Examples: GENEVA_INVENTORY_FLOWER_TYPE and NC7_INVENTORY_FARMFIELD

In the *Recommended Order for Importing Data* section in the *Overview* of the Import Wizard Cookbook, there is a table listing the important ancillary data that can be loaded via the Import Wizard in the Admin Tool. (This data could also be brought into GG via the Curator Tool, but this Import Wizard was designed to make an initial dump of data into an organization's new database.) You can use the Import

Wizard to *export* the codes into a spreadsheet where you can review them as a whole.
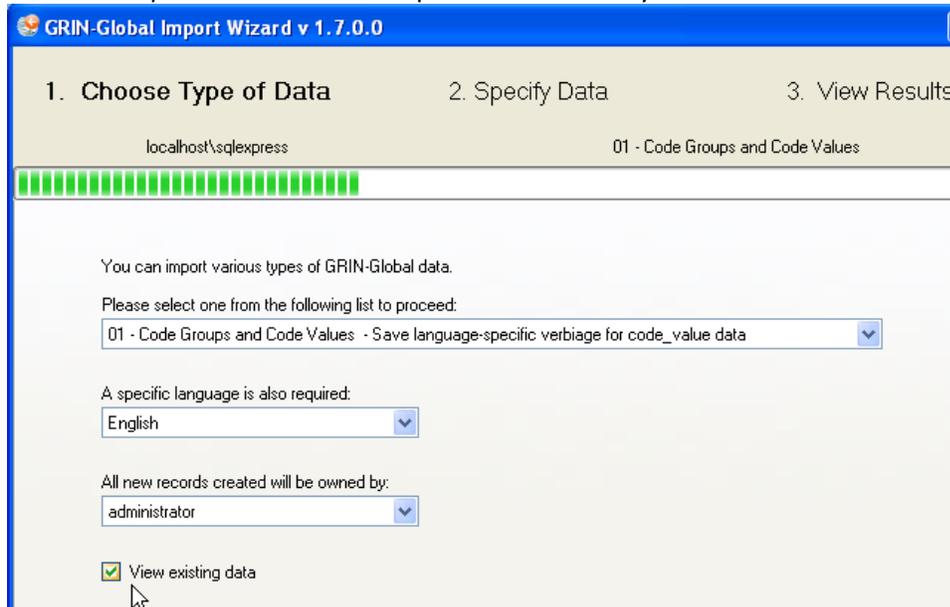
> Codes cannot be deleted via the Import Wizard; the simplest way to delete a code is to use the Admin Tool's Code Group editor.

The online data dictionary has a sheet where many of the NPGS codes are described: Codes. Review this to get a sense of how the codes are used. GG administrators should also read and review the detailed "Codes" section in the Admin Tool Guide.

> The Geographic data uses ISO country codes and administrative type codes. These codes can be used as is, or additional codes can be added by the organization as needed.

Sites and Site Codes

(*Site* Codes are completely different from the codes described in the previous section. Site codes are part of Site records stored in a separate Site table. The initial reason for an organization to set up site records is to establish the location code for their staff CT users. For example, in the USDA National Plant Germplasm System (NPGS), this organization has 20 site records representing the 20 locations where the NPGS genebanks are. The sites may be separate physical locations such as in the U.S., where "COR" is the site code for the Corvallis, Oregon genebank and "W6" is the code for the Western Regional Plant Introduction Station in Pullman, Washington.

A site code could also be set up as a virtual site for special purposes. For example, the "black box" storage of certain collections that are not routinely distributed.

A site could also be set up for a specific crop or even for specific germplasm types. For example, if your genebank has two sets of procedures that vary, depending on the germplasm type, such as In-vitro and seeds, it may be helpful to create one site for the in-vitro, and the second for seeds. However, this is not necessary. Often a site may have various kinds of inventory forms, from living trees to seeds to in-vitro tubes.

Sites Example:

	Get Site	Source Descriptor	Get Inventory Action	Get Sys Dataview Field Lang	Get Sys Table Field Lang	Accession Inventory Name	Site		

Site ID	Site Short Name	Site Long Name	Organization Abbreviation	Is Internal?	Is Distribution Site?	Type	FAO Institute Number
2	BRW	Natl. Germplasm Repository - Brownwood	BRW	Y	Y	Clonal maintenance site	USA133
30	CLO	Clover collection	CLO	Y	Y	Seed maintenance site	USA134
3	COR	Natl. Germplasm Repository - Corvallis	COR	Y	Y	Seed and clonal maintenance site	USA026
1	COT	Cotton Collection	COT	Y	Y	Seed maintenance site	USA049
4	DAV	Natl. Germplasm Repository - Davis	DAV	Y	Y	Clonal maintenance site	USA028
10	DBMU	Database Management Unit	DBMU	Y	N	Seed maintenance site	USA126
33	DLEG	Desert Legume Program	DLEG	Y	Y	Seed maintenance site	USA971

Do not confuse "sites" with "cooperators." In the next section we'll describe the cooperator table. A GG organization typically may have a few sites, but many cooperators, since a cooperator in GG can be an individual person or an organization.

Cooperators

A person or an institution can be considered a cooperator. This means that people and organizations are stored in the same table. When creating a new cooperator, either the **Last Name** or the **Organization** field must be specified. An institution cooperator record will have a null (empty) **Last Name** field. Each cooperator must have a unique index comprised of **Last Name**, **First Name**, **Organization**, **Geography_ID,** and **Address Line 1** fields.

When an organization installs Taxonomy with GG, approximately 30 related cooperator records are also loaded – otherwise, just five essential "SYSTEM" type cooperator records will be installed. (The system cooperator records are required by the software.)

We recommend using the Curator Tool's **Cooperator Wizard** to search for (people) cooperators before adding any new ones. When adding many cooperators at one time, especially during the initial GG organizational setup, use the **Cooperator** dataview to drag multiple new cooperator records from a spreadsheet.

Every Curator Tool user will be added to the Cooperator table. See the *Users* section for more details.

Cooperator Wizard

Cooperator Dataview

Inventory Maintenance Policies

GRIN-Global is installed with one default inventory maintenance policy: "**SYSTEM**." Do not delete this record!

GG users at a site (location) can create inventory maintenance policies to determine how inventory lots will be processed. These policies specify the standard germplasm form to be distributed, the standard amount to be distributed, and the setting of critical distribution and replenishment levels. These IMPs can be created when they need them and do not all need to be designed when just starting up with GG. Because every new inventory record requires its **Inventory Maintenance Policy** field to be filled, of course the IMP must be created before an inventory record using it can be created.

The only inventory maintenance policy installed with GG is **SYSTEM**. Before adding any inventory records, someone, either a Curator, a user at a site, or the GG administrator, will need to input (or copy from a spreadsheet) any desired inventory maintenance policies.

Some organizations may decide to have only one person in the organization held responsible for creating all Inventory Maintenance Policy records to ensure naming consistency (among other reasons).

Review the *Inventory Maintenance Policy* section in the online GRIN-Global Inventory document that describes in detail how to create inventory polices.

Every new inventory record requires its **Inventory Maintenance Policy** field to be filled. This field is doubly important, because the owner of the policy record becomes the owner of the inventory record. In creating these policies, ensure that the policy record owner is the person who is intended to be the owner of the inventory records created when using that policy. For example, if "John Doe" (Juan Coneja?) will ultimately become the inventory record owner, then create an inventory maintenance policy where he is the owner of the policy. If you are signed on as administrator and have created these policies, you can transfer ownership to the respective cooperators.

Methods

The **Method** dataview accesses the table of methods and procedures used to determine the crop specific attributes of the germplasm. Each environment used in an evaluation should have its own record in the method table. Other procedures can also be included in this method table (e.g. germination procedures).

Methods are generally created on an as needed basis.

In many dataviews, the **Method** field may be optional, but it is a required field when recording **Crop Trait Observation** records. Therefore, before any observations can be recorded, the pertinent methods must first be defined.

When creating method records, only one field is required – the method's **Name** field. Other fields are available for storing the method's specifics and the environment where it was conducted. In the naming convention used by some NPGS sites, the **Name** includes the year of the trial, as shown below:

| Crop Trait Lang | Get Taxonomy Genus | Get Taxonomy Species | Get Packing Slip | Get Inventory Maintenance Policy | Method | | | ◄ ► |

Method ID	Name	Geography	Elevation (meters)	Latitude	Longitude	Material or Method Used	Uncertainty
125	SUNFLOWER.ND.RUST.R4.93	United States, North Dakota				Fifteen plants (three replicates of five plants) were inoculated with race 4 rust spores mixed with Soltrol 160 mineral oil. Plants	
126	SUNFLOWER.ND.RUST.R3.93	United States, North Dakota				Fifteen plants (three replicates of five plants) were inoculated with race 3 rust spores	
135	SUNFLOWER.SUN.FATTYACID.91	United States, Minnesota				Accessions were first screened using a refractometer. Accessions which had low	
137	SUNFLOWER.TUR.OROBANCHE.93	Turkey, Edirne				903 Helianthus accessions were screened for resistance/tolerance to Orobanche at the	
146001	SUNFLOWER.NDAK.INSECT.BSM.87	United States, North Dakota				Study Name: Sunflower Resistance to North	

Methods are used in at least twelve dataviews such as **Inventory**, **Inventory Action**, **Crop Trait Observation**, etc. For example, in the Inventory dataview, two different fields are completed by selecting a method: **Preservation Method** and the **Regeneration Method** fields.

In the Admin Tool an administrator can display what dataviews use the method_lookup dataview. (Right-click and then select **Show Dependencies** from the menu.)
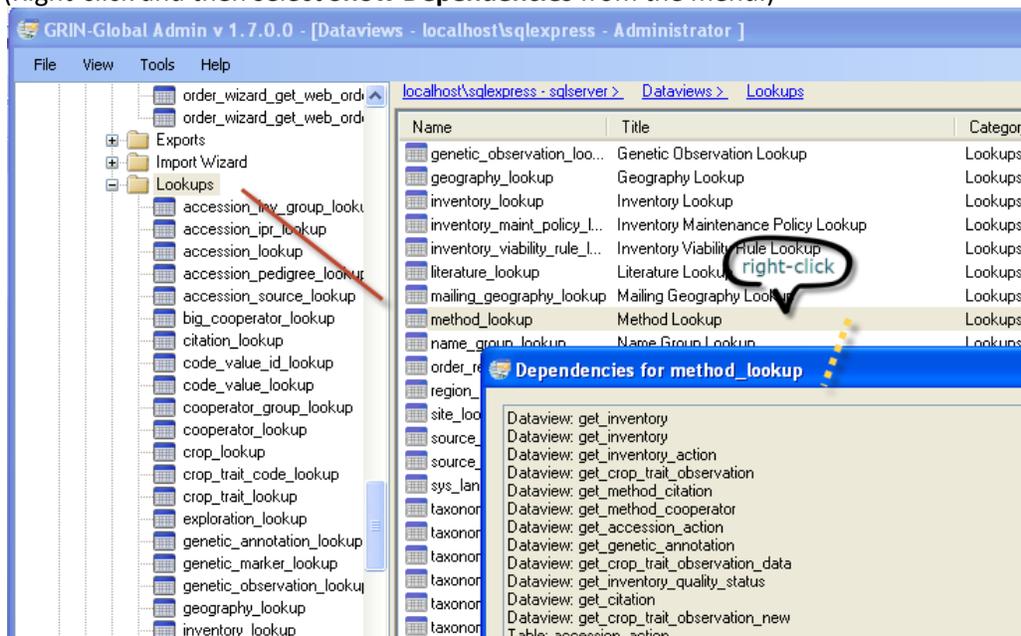
Inventory Viability Rules

The germination evaluation methods are stored in the **inventory_viability_rule** table. (This is a change for the NPGS – in GRIN germination evaluation methods were stored in the Method table.) Therefore, in the Curator Tool, use the inventory_viability_rule dataview to store the germination evaluation protocols.

When recording an inventory viability record, there is a field to select from the list of Inventory Viability Rules **(**this field is not required).

Region and Geography

The Region and Geography tables are used by many dataviews. Default geography data can be downloaded during installation. Complete directions for downloading both the **Taxonomy** and **Geography** data are in the Installation Guide, but the basic idea is for the administrator to hold the **Ctrl + Shift** keys *before clicking* the **Download/Install** button when using the GG Updater program to install the server components.

Region

The **Region** dataview accesses the **Region** table, which includes world regions and continent information. The region table is used by the **geography_map** table to group countries into regions. The main fields are continent and sub-continent names and abbreviations. The Import Wizard Cookbook describes a method for quickly importing region data via the Admin Tool Import Wizard, but it is also possible to simply add and edit data in the **Region** dataview.

Geography

This dataview accesses the table of countries and their political subdivisions. Former names of countries are also in this table.

Geography ID	Current Valid Geography	Country	Administration 1	Administration 1 Type Code	Administration 2
1656	China, Guizhou	China	Guizhou	State	
325	Ecuador	Ecuador			
340	Finland	Finland			
3107	Finland, Lappi	Finland	Lappi	State	
3213	Japan, Gifu	Japan	Gifu	State	
3236	Japan, Toyama	Japan	Toyama	State	
2370	Russian Federation	Russian Federation			
1301	United Kingdom, England	United Kingdom	England	State	
926	United States	United States			
1009	United States, Florida	United States	Florida	State	
1015	United States, Iowa	United States	Iowa	State	

GG has a code group, **GEOGRAPHY_COUNTRY_CODE**, which contains three letter codes. The numbers are for countries that do not have an ISO code (historical areas no longer existing). The ISO codes are three-letter codes.

Users

"Setting up users" here is referring to creating Curator Tool user accounts. In some organizations, an administrator may also be creating a few additional administrator accounts as well. Use the Admin Tool to create/modify Curator Tool user accounts.

At a minimum, when adding a new CT user, establish/select the following:
- User Name and Password
- Geography and Site codes
- Enabled (checkbox – denotes the user will be a CT user)
- Active (checkbox – indicates the user will be an active cooperator)
- Groups: CT Users

Some organizations may have multiple sites, whereas others may establish just one site – even if the personnel are physically located in remote sites. In the U.S., each genebank location has its own unique site code. (Refer to the *Sites and Site Codes* section for more details.)

Users accessing the Public Website (PW) do not need the GG administrator to do anything. Any user with a browser can access the organization's GRIN-Global PW. This assumes that the URL is a publicly available URL. A user can browse the GG Public Website, self-enroll, and create a PW user account similar to the way many websites operate.

Genebank staff in the organization can have their PW account enhanced by having the GG administrator connect the user's Curator Tool (CT) to their PW account. (The GG administrator manually will use the Admin Tool to manually connect the two accounts.) After the two

accounts are connected, the PW account will see an additional item on the PW menu "Tools." The use will also have access to internal-only reports if the organization has any set up.

Connect User PCs to the Organization's Production GRIN-Global Server

Curator Tool
The Curator Tool (CT) application must be installed on all PCs which will be used to access the GRIN-Global database. Administrators should read and follow the complete CT installation directions that are in the separate GRIN-Global Installation Guide.

Check that each user can login successfully. Ideally the administrator will test the user's **Username** and **Password** and the GG server address on the PC being used to access GRIN-Global.

Public Website
Users access the Public Website via a browser. Ensure that each genebank user knows the correct URL for the Public Website. Other than a browser, no additional software is needed to use a GG Public Website.

The user's account for the Public Website is for the Public Website only. It is not the same account as the Curator Tool user account. In the PW, a user can self-register and create her own account, or the administrator can create the PW account for her.

Connecting the CT and PW Accounts
The GG database administrator can then connect the two accounts via the Admin Tool. All CT user accounts must be made and edited by the GG administrator. In some organizations, where the user creates her own PW account, the GG admin may wait until later to relate the PW account to the user's CT account.

Crop Descriptors
Before observations can be recorded in GG, the traits must be defined (**Crop Trait** records created) and any associated **Crop Trait Code** records must also be defined. Also, the **Taxonomy Crop Map** records must be established to relate taxonomic species records to crops. A detailed guide explains how to set up descriptors, trait codes, and observations: http://grin-global.org/docs/gg_observations_and_descriptors.docx

Source Habitat Codes
Five GRIN-Global tables provide an extremely flexible method for adding details about the collection site; genebank staff can create custom descriptors and codes as needed to fully document a collection site's environment. Source/Habitat descriptors that an organization could record with these descriptors include: Slope, Aspect, Soil pH, and Soil Texture. Details may be found at:

https://www.grin-global.org/docs/gg_source_habitat_descriptors.pdf

Passport Data

The list of multi-crop passport descriptors (MCPD) is developed jointly by IPGRI and FAO to provide international standards to facilitate germplasm passport information exchange. In GRIN-Global, the multicrop passport descriptors (MCPD) data, and other data, is distributed across multiple accession tables that are linked to each other.

Complete information about passport data is in the document:
https://www. grin-global.org/docs/accessions_and_passport_data.pdf

The main **Accession** records need to be added before any auxiliary child records are added. After the primary accession records have been added to the database, the adding of the remaining passport data can be addressed. The Curator Tool has an embedded **Accession Wizard** which expedites the inputting of the supplementary data for one accession at a time. A user can also bulk add data using the CT's drag-and-drop method for adding data.

Inventory

One general guideline to remember is that inventory must be related to an accession record. Complete information about managing inventory data is in the document:
https://www. grin-global.org/docs/gg_inventory.pdf

Orders

Complete information about the CT's **Order Wizard** and order processing is in the document:
http://grin-global.org/docs/gg_order_processing.docx

For most new GG installations, order records will typically be new records generated within GRIN-Global after the system is up and running. (Most external germplasm requests received via the Public Website are processed by the genebank staff using the GG Order Wizard to generate their distribution orders.) However, an organization could bulk load orders from some other system by using the Curator Tool's drag-and-drop method.

Miscellaneous Admin Functions

GG was designed to be easily customized; some of this configuration is done by the administrator within the Admin Tool. Refer to the Admin Tool Guide and review the main sections. For example, you should review the ***Web Application*** section.

Admin Tool Guide

USDA NPGS-Specific Steps to Transition to GG

Each NPGS site needs to complete several steps to implement GRIN-Global. The directions below summarize these steps. For additional details, consult the available GRIN-Global documentation available online on the NPGS Training Resources Page.

An employee checklist has some steps to follow and provides names of GG support contacts. Refer to the http://grin-global.org/docs/NPGS_staff_entrance_and_exit_checklist.docx

Logging on to the CT

You are not required to VPN or be on the ARS network.

Ensure That the Server Connections are Set Up Properly

Curator Tool

The Curator Tool is the application program that is used by genebank staff to edit and input GRIN-Global data. Each user at a genebank site will be using the Curator Tool to access GG data. Every genebank PC that will be running the Curator Tool will need to have a copy of the CT installed on the PC.
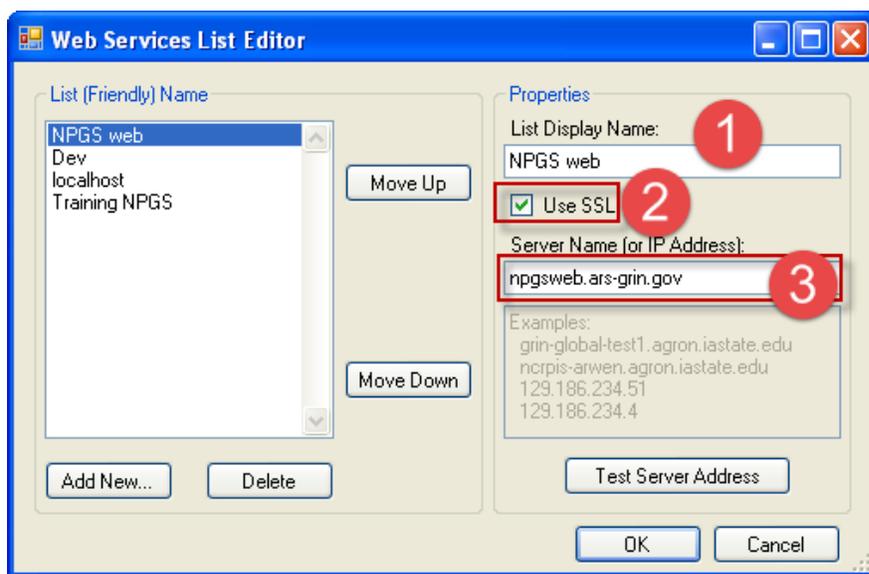
See also:

CT Login Guide:	http://grin-global.org/docs/gg_CT_login_guide.pdf
Connecting to GG Servers:	http://grin-global.org/docs/gg_connecting_to_servers.pdf
Login Quicksheet:	http://grin-global.org/docs/gg_CT_login_quicksheet.pdf

A text file (**WebServiceURL.txt**) exists on any computer where the CT has been properly installed. It is found in the **C:\Users*username*\AppData\Roaming\GRIN-Global\Curator Tool** path. If an administrator for a site is setting up multiple computers with the CT, the administrator can copy a valid **WebServiceURL.txt** from one computer to another. This eliminates the need to manually setup the server information on each computer since that information is stored in the .txt file.
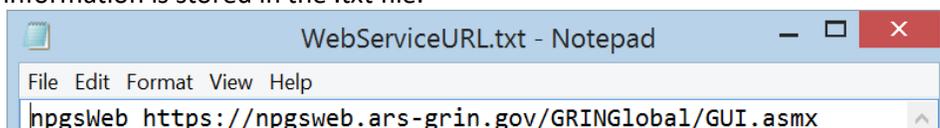
Public Website
Users in the genebank will also need to know where to point their browser (Internet Explorer, Firefox, Chrome, etc.) to view GRIN-Global data on the Public Website (PW). Provide the organization's URL. (NPGS's for example is https://npgsweb.ars-grin.gov/gringlobal/search.aspx?)   Suggest that each user bookmark this URL for future reference.

Note that the PW is also the interface your germplasm requestors will be using to review and order GG germplasm data. ***Provide the GG URL to your user community in your communications and website.***

Review Your Data During the Pre-Implementation Period
During the period leading to the implementation date, we recommend that you review a sample of your accession data to confirm that the data was transferred properly.

Immediately After the Implementation

Refresh Lookup Tables
All CT users will need to reload their lookup tables. This should be a one-time occurrence in production – going forward, the lookups will point to the data records as they change.

Establish Public Website User Accounts
The public will use the GRIN-Global Public Website for reviewing and ordering germplasm. However, genebank personnel will also find the Public Website useful and complementary to the Curator Tool.

There are two main features embedded in the PW that are only available to genebank staff users with accounts and whose accounts have been given access to these features. The general public will not have access to the **Tools** option on the PW menu bar, nor will they have access to reports designed specifically for NPGS-use only. Upon request, the NPGS database administrator, Quinn Sinnott, will associate an NPGS user's account with these features.

The two features available are:

- **Tools | Web Query**
  SQL queries can be run against the GG database. (Former GRIN SQL users need to be aware that the fieldnames in GG are different from GC, and that we now are using MS SQL Server and not Oracle, so the SQL statements have slightly different constructs.) There is a growing library of SQL examples available online on the NPGS Training Resource page.

- **Additional Reports**
  Under the **Reports** menu option, a list of reports is available. This list evolves for each genebank using GG; reports are basically structured SQL queries that a GG administrator can create and add as desired.

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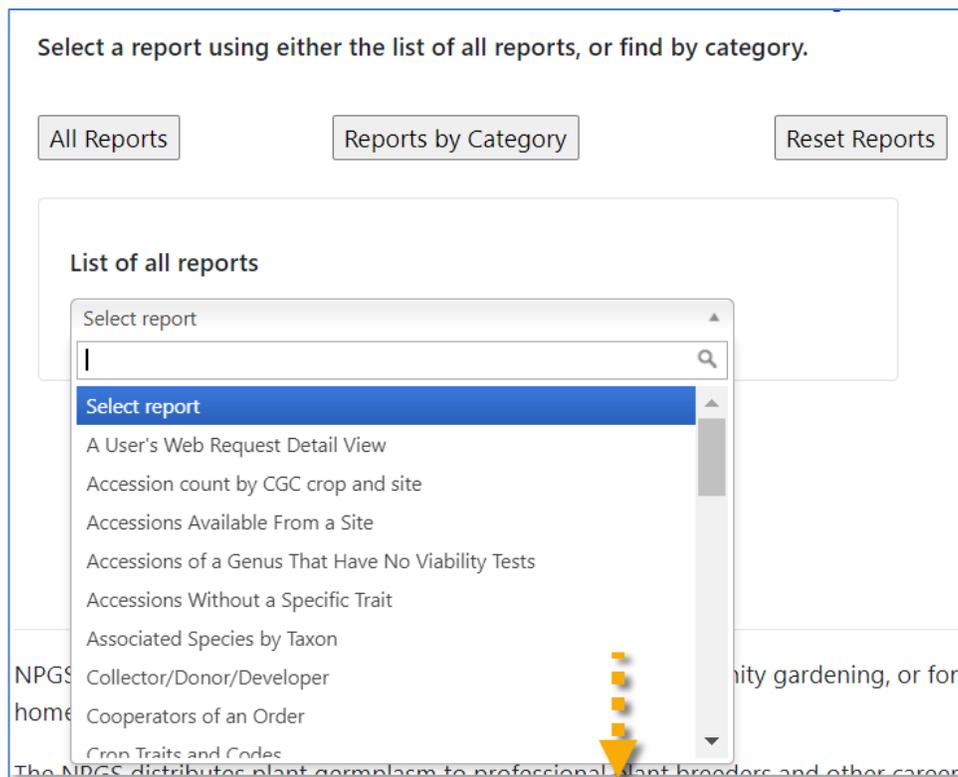
Ownership: Review

In GRIN, the site owned the accession data and all site personnel had the same level of access to the site's records; in GRIN-Global, records are no longer owned by sites, but by individual cooperators.

In the NPGS, each site needs to evaluate and determine who the record owners should be and what permissions need to be assigned to other site genebank personnel. CT users should refer to the Security section in the Curator Tool User Guide.

In GRIN-Global, an individual owns each data record and can determine what access other individuals can have. "Owner" in this context is the person in GG who can allocate permissions to other individuals.

A site may consider the curator as the actual owner of certain accessions, but prefer designating some other employee (e.g. the site primary) as the "owner" within GG since that person will be using GRIN-Global daily.

There is only one owner per record.

In GRIN-Global it is relatively simple to transfer ownership so that record ownership should not be an issue. However, upon conversion, we recommend that each site review sample records to verify that the ownership rights set up during the conversion from GRIN to GG are what is expected and what the site needs in order to complete their daily procedures. If records have an incorrect owner, then change the ownership to the correct owner or desired owner. This can be done by contacting the incorrect owner and asking them to transfer ownership to the correct person. Refer to the *Security (Ownership & Permissions)* section in the Curator Tool User Guide for complete directions.

Permissions: Set

Although there can only be one *owner* per record, the owner of a GRIN-Global record can assign permissions to other individuals. Permissions establish who can read, update, create, or delete records. With this flexibility, there are various ways to set up permissions to meet the genebank's needs. For example, you may have the situation where a student or technician will be uploading observation data or creating action records on an inventory, but they should not be altering the inventory data. Hence they can create new observation or action data, but not update or delete inventory records.

One note about permissions: Just because you may have created the record does not imply that you are automatically the record owner. For example, when creating an inventory record, one of the required fields is **Inventory Maintenance Policy**. The Inventory Maintenance Policy that is selected determines who the owner is. So in this case, the creator of the inventory record may, or may not be the owner of the inventory record, depending on the Inventory Maintenance Policy (IMP) associated with that inventory record. The owner of the IMP record owns the inventory record. Read also the Inventory Maintenance Policy section for more details.

Establishing permissions for the site's accessions, inventory, and order records should be completed after record ownership has been verified. Refer to the *Security (Ownership & Permissions)* section in the Curator Tool User Guide for complete directions.

Codes: Verify

Codes are used throughout the GRIN-Global system to ensure data integrity and avoid typographical errors. The Codes are added and maintained by the GRIN-Global administrator (Quinn Sinnott). When you use the Curator Tool, contact Quinn if you need to have any codes added or edited. The Codes list in dropdowns when editing or adding records.

In Edit mode, dropdowns using the Code Groups are visibly recognized – they initially display **[Null]**:

Click in the cell, and then click again to display the dropdown menu:

In this example, in the **Inventory** dataview, the **Availability Status** field is using codes:

SQL Query for Listing GG Code Groups and Codes
Using the SQL Query option described earlier, it is possible to list all of the codes in the system.

```
USE
  gringlobal;
SELECT
  cv.code_value_id as value_id,
  cv.group_name as group_name,
  cv.value as gg_value,
  cvl.title as cvl_title
FROM
  code_value cv
  inner join code_value_lang cvl
          on cv.code_value_id = cvl.code_value_id
  left join sys_lang sl2
                 on cvl.sys_lang_id = sl2.sys_lang_id
WHERE
  sl2.sys_lang_id = 1
/* and   group_name = 'inventory_action'  */
```

```
/* use and clause to search for a specific code */
ORDER BY
 group_name,
 gg_value
```

Inventory Maintenance Policies: Verify Your Site's Policies are in GG

In dataviews, when editing or adding data, some fields use a "Lookup Picker" to select data from other tables. This is different then when fields use Codes, since codes are displayed in dropdowns. Data displayed in a lookup picker window is data that has been entered into GG by users and is stored in the GG database.

The following illustrates a field using a Lookup Picker to supply its data – in this example, the **Inventory Maintenance Policy** is highlighted:

This is the lookup picker window that pops up and lists the available **Inventory Maintenance Policies**:
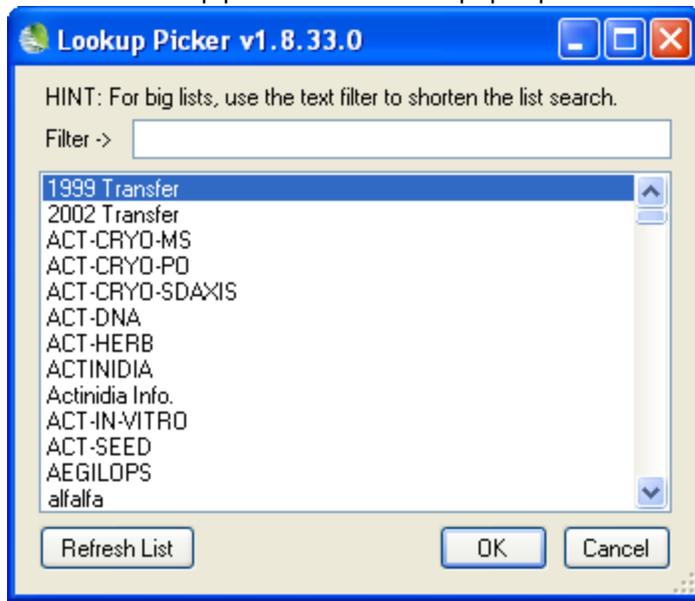
Since sites are responsible for creating their own **Inventory Maintenance Policies**, if they need to add one they must create an inventory maintenance policy record. Refer to the instructions for Managing Inventory (this document is listed on the NPGS Training Resources page.).

Methods

The Methods dataview uses the table of methods and procedures which are used to determine 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. (For additional background information on methods, refer to the _Create Methods_ section in this document.)

In GG we moved the germination evaluation methods into the inventory_viability_*rule* table. Instead of the method dataview, use the inventory_viability_*rule* table for germination evaluation protocols.

Raw data can be stored in the inventory_viability_*data* table, but currently there are no wizards to roll up this raw data into the inventory_viability table.

You should search for your site's methods to ensure that the methods you will be using in making future observations are in place in GRIN-Global. A simple search in the ST or Dynamic Query in the CT will produce a list of methods records – you can then display them in the CT or drag them into a spreadsheet for further review.

Example:

Sample Dynamic Folder criteria for displaying a site's Methods:
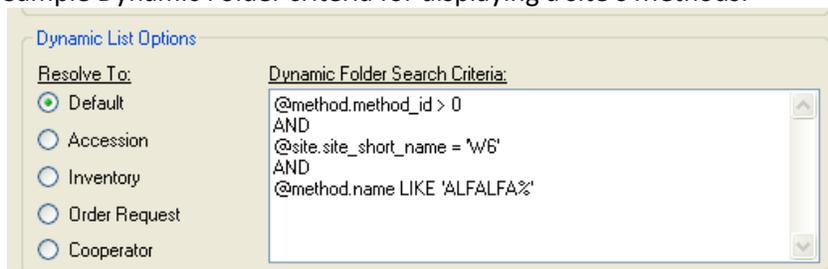
@method.method_id > 0
AND
@site.site_short_name = 'W6'
AND
@method.name LIKE 'ALFALFA%'

Coordinate Links from Your Site's Pages to the Public Website

Fortunately any URL links that worked in GRIN will continue to work in GRIN-Global. This will be accomplished by redirecting, so that you or your users will not need to edit existing links. The following two lines are pointing to the accession:

System	URL format
GRIN	http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1395885
GRIN-Global	https://npgsweb.ars-grin.gov/gringlobal/accessiondetail.aspx?1395885

Future links will of course use the GRIN-Global form.

Train Your Requesters / Point to the New GRIN-Global

If you use newsletters or other means to regularly communicate with your users, please include a notice about the switch to GRIN-Global. Remind them that there is a Help option on the GG Public Website menu.

Appendix A: Document Revision Notes

– September 3, 2024
- major editing to reflect current environment

– August 6, 2018
- added notes and tip regarding NPGS-specific Code Groups