Import Wizard “Cookbook”

Guide for Bulk Importing of Data into GRIN-Global

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Purpose of this Guide

There are three major steps to be completed when setting up GRIN-Global for an organization:

1. Install the software (refer to the **GRIN-Global Installation Guide** for detailed steps)
2. Prepare and import any existing data
3. Add users and grant them security privileges (refer to the **GRIN-Global Administrator Guide** and the **Curator Tool User Guide** – each of these manuals addresses specific security settings, permission and ownership)

This guide explains the second step, how to prepare an organization's existing data and import it into GRIN-Global. Each organization will have its own unique issues when converting its data.

The GRIN-Global Admin Tool has an **Import Wizard** feature for bulk importing data. This "cookbook" explains how to import data into GRIN-Global in a step-by-step procedure via the **Import Wizard**. We also recommend a sequential order for importing data.

This guide contains links to online sample spreadsheet files which can serve as examples of typical data or which can be used as they are. For example, there are GRIN taxonomy files which can be imported and then used by an organization.

As you read this document, you will see that your organization's data can be easily imported into GRIN-Global with perhaps some relatively minor adjustments. These adjustments could be as simple as editing the column headings of your data to match the field headings in GRIN-Global. By design, GRIN-Global is very adaptable in meeting diverse organizational requirements.

OVERVIEW

GRIN-Global is a Relational Database

The GRIN-Global data is stored in many tables; this type of database is referred to as a relational database. Each table relates to other tables by key fields. A single stand-alone spreadsheet, on the other hand, while often considered a database, is not relational.

One key principle to remember when importing data into GRIN-Global is that the tables are related. For organizations that have maintained their data in relational databases such as FoxPro, Access, or some other database, this concept is not new. For organizations that kept their data in spreadsheets or manually, this may be a new concept or may be something which they did not handle previously.

For more information on relational databases, refer to the *Database and GRIN-Global Basic Concepts* section in the Curator Tool User Guide.

Primary Purpose of the Import Wizard

The Import Wizard facilitates the loading of many records ("bulk loading" of data). Since many organizations store their data in spreadsheet form, the wizard was designed to accept data imported from a single, stored .csv file or copied directly from a spreadsheet into multiple tables.

The Import Wizard also can be used to view existing data. Although it is titled "Import Wizard," it has the capability to display existing records.

Recommended Order for Importing Data

The GRIN-Global developers highly recommend importing data in the order described in the table below. This is not necessarily the only path to follow, and many organizations may have good reasons for importing their data into the system differently. However, this sequence is recommended because of the data relationships: most of the tables have "foreign keys" that link the data to a parent table. If the parent data has not been loaded into the database, then the foreign key will not be able to link to anything. Each child record in a foreign key relationship must have a matching parent record.

[For more background information on foreign keys, among other sources is Wikipedia; see http://en.wikipedia.org/wiki/Foreign_key]

When starting with an empty GRIN-Global database, you need to populate ancillary tables before storing Accession data. We recommend adding data in the order listed below:

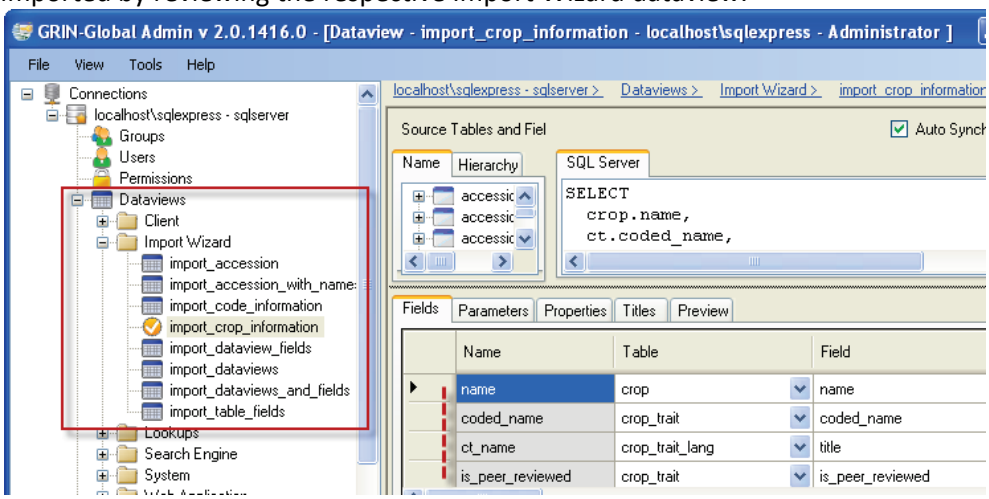
	Data (Import Wizard)	Tables That Will be Updated	Notes
01.	Code Groups & Values	code_value, code_value_lang	Throughout the GRIN-Global system, on many of the Curator Tool screens, dropdowns are used to assist users in selecting valid entries – the fields do not allow random text data to be entered, but instead require a value from a pre-populated set of values. These values sourced by drop downs are stored in the **code_value** table. For details, see Field Codes (page 23.) Note: during data entry in the Curator Tool, there are two types of fields that access data from other sources. Besides the dropdowns that use data stored in the code_value table, there are fields that get their data via a lookup picker. (For more details, in the Admin Tool Guide, under the Dataview section, refer to the subsection titled "Drop Down Source & Lookup Picker Source.")
02.	Site	site	Sites typically are used to indicate where inventory is maintained. For details, see Site (page 28).

	Data (Import Wizard)	Tables That Will be Updated	Notes
03.	Region	region, region_lang	For details, see Region (page 29).
04.	Geography	geography, geography_lang	As an option, ADMIN1 and Country can be provided by the installer, but coding and all ADMIN1 for some countries are not complete. For details, see Geography (page 30).
05.	Cooperator	site, geography, cooperator	Collector names, donor names, developer names as well as people and institutions who gave the accession a name or a cultivar name will need to be in the database before they can be associated with the source record. Cooperator names will also need to be in the database for inventory actions such as addressing the question "Who donated it?" For details, see Cooperators (page 31).
06.	Taxonomy	family, genus, species	As an option, the Taxonomy data from the U.S. GRIN system may be initially loaded during the installation. Even so, if different taxonomic names are recognized and needed by your organization, then these must be added or substituted in place of the supplied taxonomic names. Since GRIN-Global handles synonymy, the ideal way to handle this is to add your organization's scientific names as the recognized names and whenever possible, assign the provided GRIN names as synonyms. Note that some wild species or crop plants not common to the U.S. may not be in this database. For details, see Taxonomy (page 32).
07.	Crop – Trait (Characterization / Evaluation Descriptors)	crop, crop_trait, crop_trait_lang, crop_trait_code, crop_trait_code_lang	(If desired, you can postpone this step of importing crop descriptors until just before observations are available for database input.) Before putting data into the **crop_trait_observation** table, GRIN-Global must be supplied with the name of the crop being evaluated, the descriptor(s) for that crop, and the possible values for each descriptor. Because of the international aspect of GRIN-Global, two additional tables are also related. Both are

	Data (Import Wizard)	Tables That Will be Updated	Notes
			"language" tables that store this information in multiple languages. For details, see Crop Traits (Characterization & Evaluation) (page 33).
08.	Methods	method	Methods indicate the experiment, condition, or situation under which an inventory was grown. For example, a method record would be entered in the "inventory action table." For details, see Methods (page 36).
09.	Accessions	accession	For details, see Accessions (page 37).
10.	Inventory Maintenance Policy	inventory_maint_policy	Policies need to be in place before adding inventory. A policy indicates whether an order will auto-deduct from inventory, whether the material will be available on the web, the units of quantity that are used, and other attributes such as the quantity to be distributed for an order and so on. For details, see Inventory Maintenance Policy (page 38).
11.	Inventory	inventory	Although GRIN-Global can work without any inventory by creating a virtual inventory for every accession, it works best if you create an inventory record. For details, see Inventory (page 39).
12.	Observations (Character/ Evaluation Descriptors)	crop, crop_trait, inventory, method, crop_trait_code, crop_trait_observation	The observation values for each accession that were observed and recorded. For details, see Observations (page 39).

Import Wizard Dataviews

Every Import Wizard has its own dataview. You can determine much about the data being imported by reviewing the respective Import Wizard dataview.



The wizard compares the column headings from the source data with the GRIN-Global database column headings. The columns can be in any order as long as the *column headings in both the source data and wizard dataview are spelled the same*. You can use the actual table column names or the language-friendly names.

When running the Import Wizard there is a handy option – you can produce a quick list of existing records.

In the process of updating and adding records to the database, the wizard returns an itemized list of the affected database tables and any records that failed to import, including a reason for the failure. At that point, you can modify the records and re-submit. After a successful import, the Import Wizard prompts you to update the search engine indexes to include the new records.

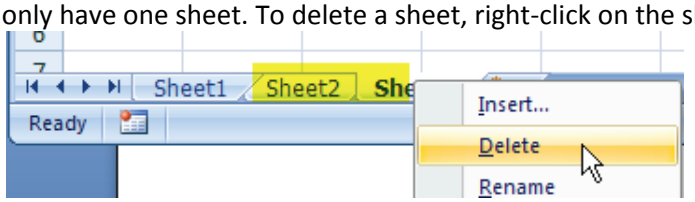
When the number of records being added is large, the index building could take a few hours.

PREPARING YOUR DATA

In order to use the Import Wizard, you need to prepare the data that will be imported into GRIN-Global. Typically, an organization already has the data in one or more spreadsheets. The column heading names of your data need to match the column headings used in GRIN-Global.

Prepare a Blank Transfer Spreadsheet

To prepare data for importing into GRIN-Global, create a transfer spreadsheet. Your spreadsheet should only have one sheet. To delete a sheet, right-click on the sheet name and select **Delete**:



Preparing the Column Headings

You will need column headings to match the columns used by the Import Wizard dataview. The easiest way to be sure that the spreadsheet column headings are spelled correctly is to run the Import Wizard *twice*. The primary reason for the first time is to copy column headings from the wizard into a blank spreadsheet. In the process, if data exists, you can also copy sample data to get an idea what type of data will be imported. (Some of the tables used by the Import Wizard dataviews may initially be empty.)

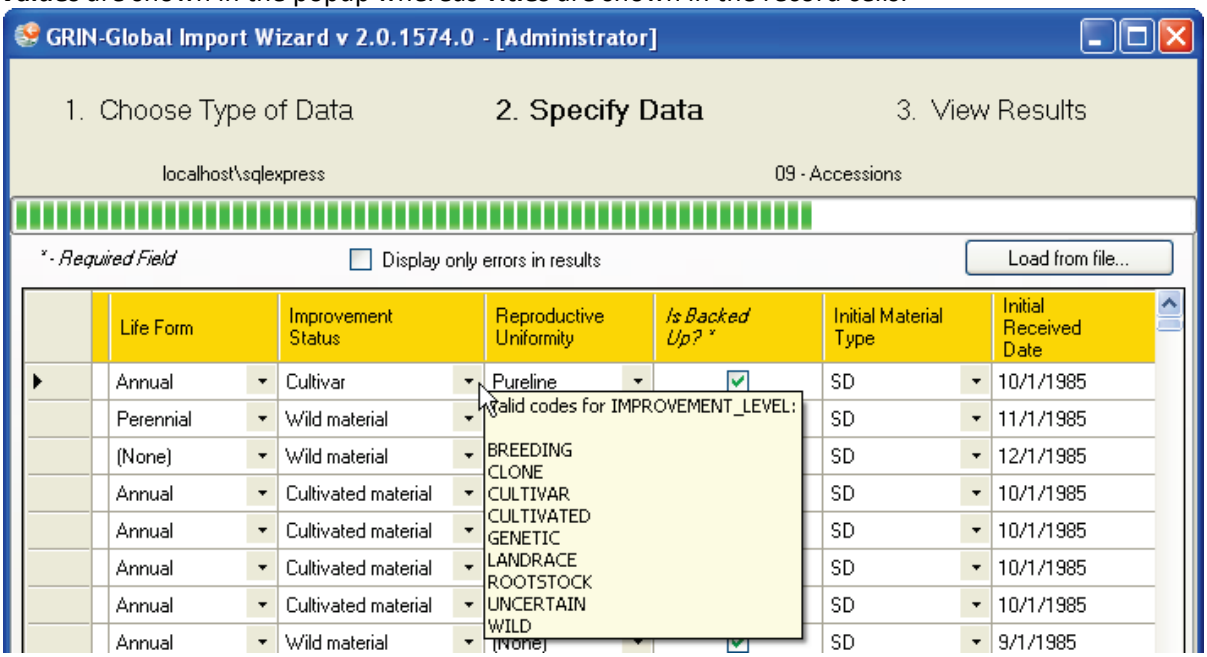
Data Requirements

- The spelling of column headings in your transfer spreadsheet must be identical to the spelling used by GRIN-Global (either the database field names or the “language-friendly” names); however, the text is not case sensitive.

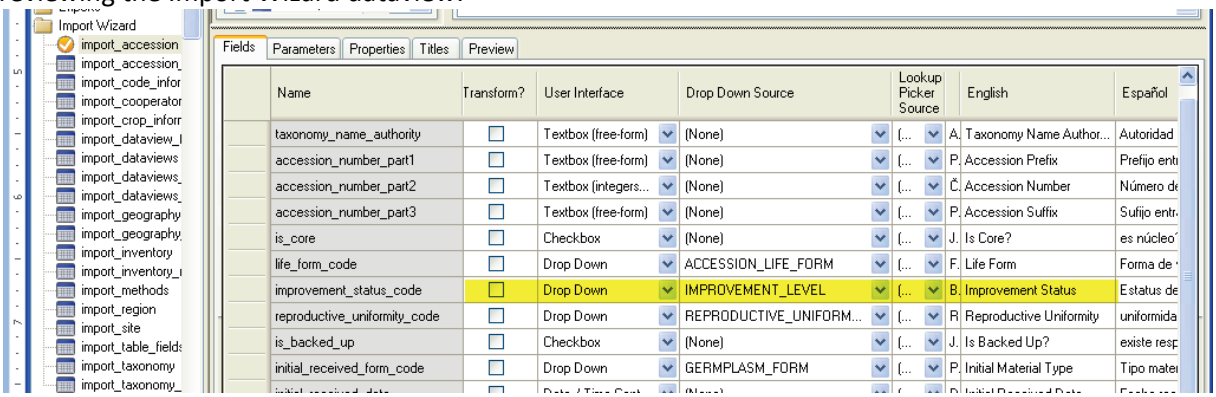
- For GRIN-Global columns that use checkboxes, **Y** and **N** are appropriate values.
  (A filled checkbox is equivalent to a **Y**; an unchecked box is equivalent to an **N**.) Likewise, **1** and **0** are valid.

- When columns have dropdowns, valid entries can be either the coded Values or their respective “friendly names” (**Titles**).

For example, when importing Accessions, the **Improvement Status** field has a dropdown. Notice that the values in the displayed record cells are different from the valid codes listed in the pop-up; **Values** are shown in the popup whereas **Titles** are shown in the record cells:

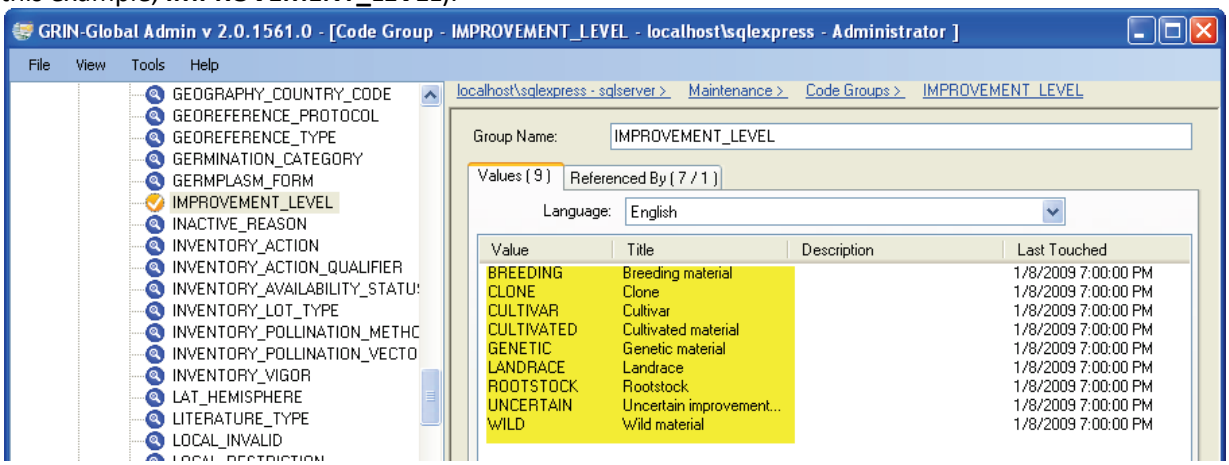


The Import Wizard dataview for Accessions shows the dataview using a Drop Down Source named **IMPROVEMENT_LEVEL** for this **Improvement Status** field. This can be determined by reading by reviewing the Import Wizard dataview:



IMPROVEMENT_LEVEL is therefore the Code Group from which **Improvement Status** gets its values.

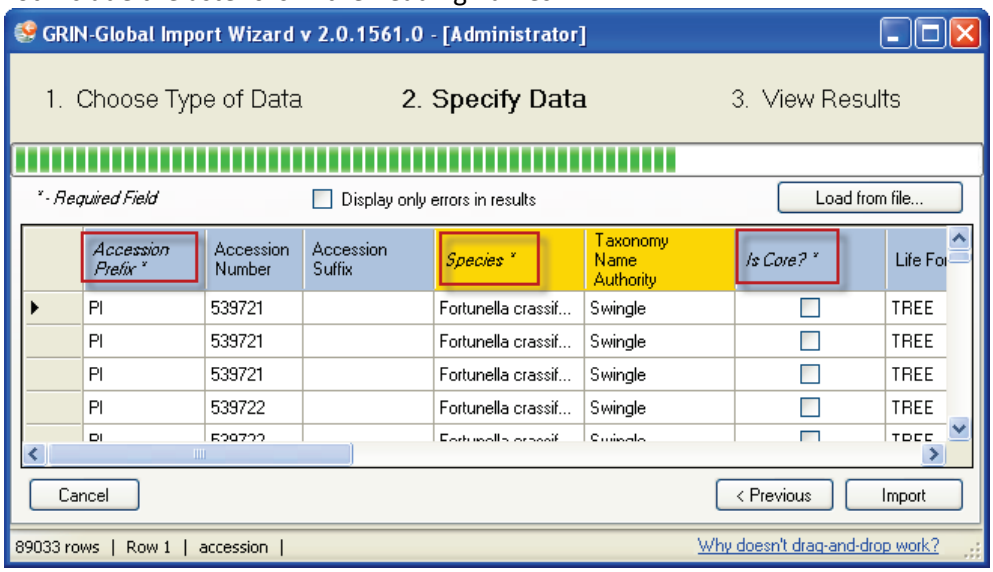
To determine what values or titles are valid, open the Code Group editor for the Code Group name (in this example, **IMPROVEMENT_LEVEL**).



Note that the Values shown in the above figure correspond with the codes displayed by the wizard in the figure on the top of the previous page.

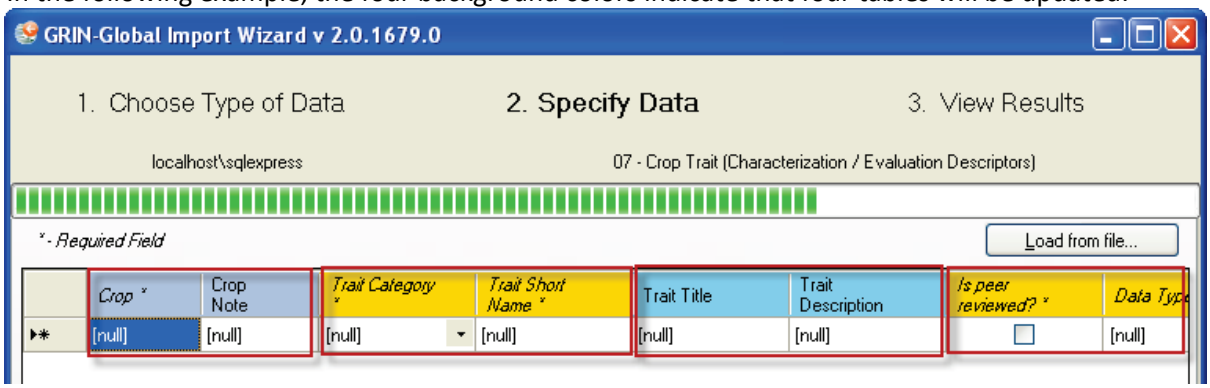
> Using the first entry for an example, when importing via the Import Wizard, either **BREEDING** or **Breeding material** is valid for the Improvement Status data.

The wizard uses *italics* and asterisks (*) to indicate required columns. In your transfer spreadsheet, do not include the asterisks in the heading names.



Remember that a dataview's data may span across several physical database tables. The import wizard can handle simultaneous updating of related tables via the Import Wizard dataviews.

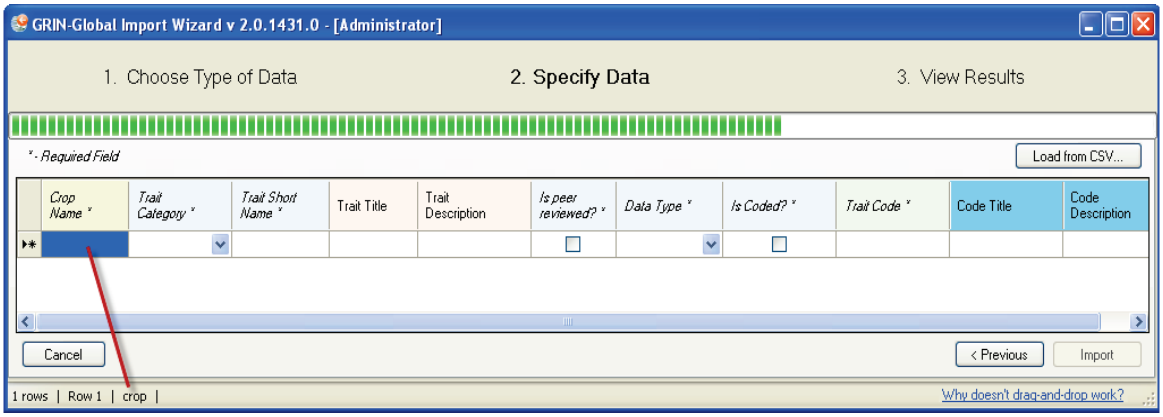
In the following example, the four background colors indicate that four tables will be updated:



Note that the left-to-right table order is significant. When importing, you can intentionally decide to not import data into all of the involved tables. However, if you completely skip a table, subsequent tables to the right in the dataview will not be updated. In the example above, if you omitted the **Trait Category** column, (shown in yellow) then you could not import data into the "blue" table (the **Trait Title** and **Trait Description** columns). (This ordering from left to right reflects the parent => child relationships of tables as defined in the database.)

Tip

As you click in each cell in the Import Wizard grid, the source table is displayed in the lower left corner of the status bar.

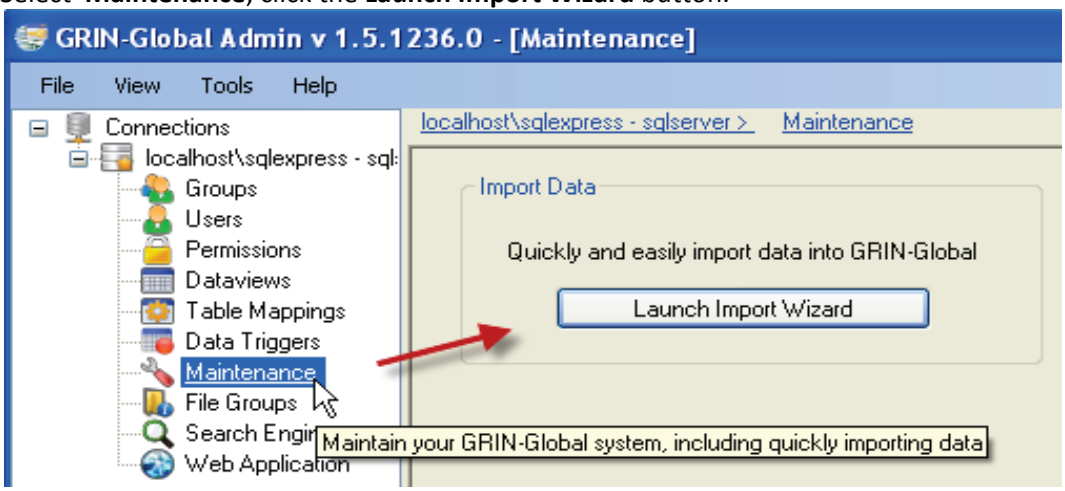


STEP-BY-STEP IMPORT WIZARD DIRECTIONS

Main Steps of the Import Wizard

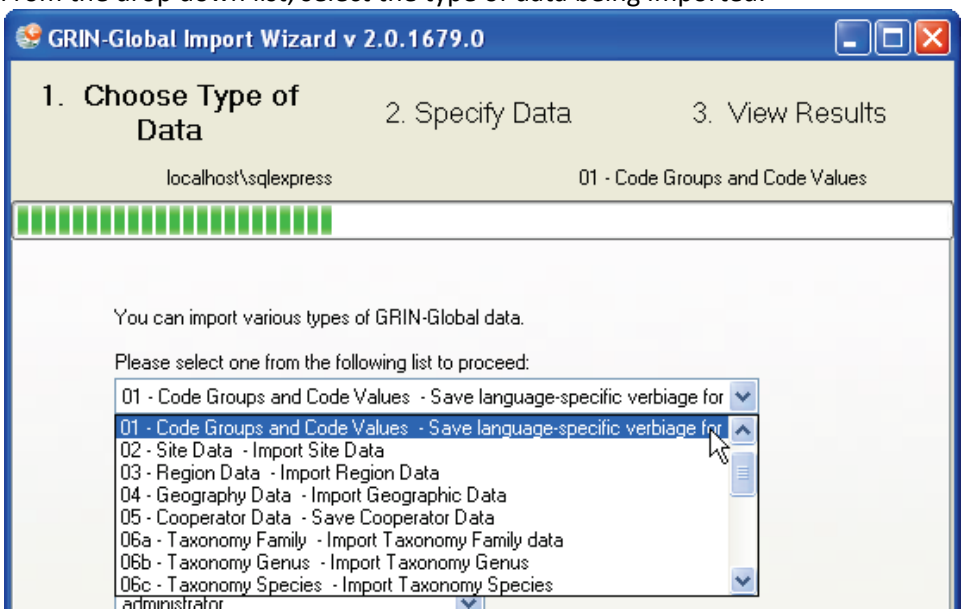
Start the Admin Tool (if it is not already open) from the Windows **Start** menu.

Select **Maintenance**; click the **Launch Import Wizard** button.



Step 1 – Choose Type of Data

1. From the drop down list, select the type of data being imported.



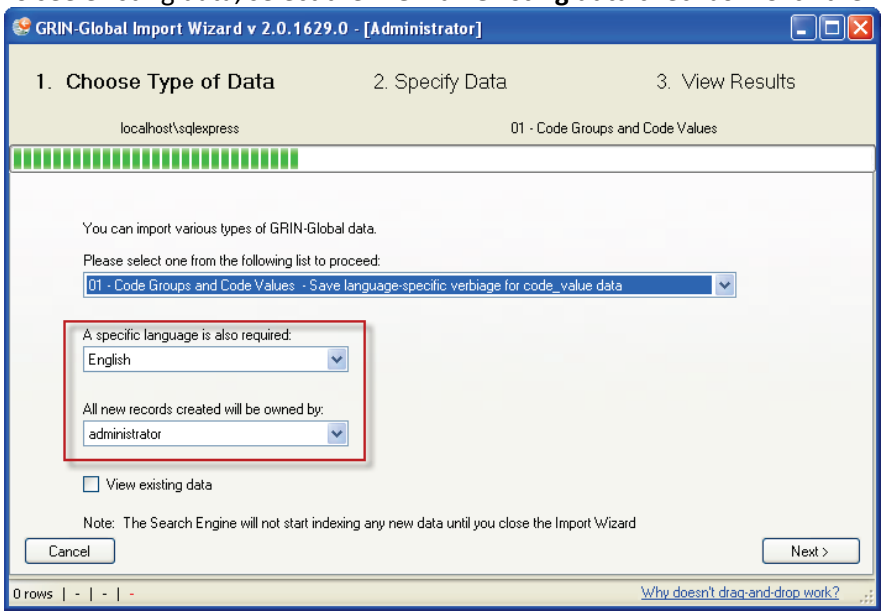
Note

For each of the choices in the dropdown, there is a corresponding Import Wizard dataview. These (and all other dataviews), can be reviewed in the Admin Tool dataview editor.

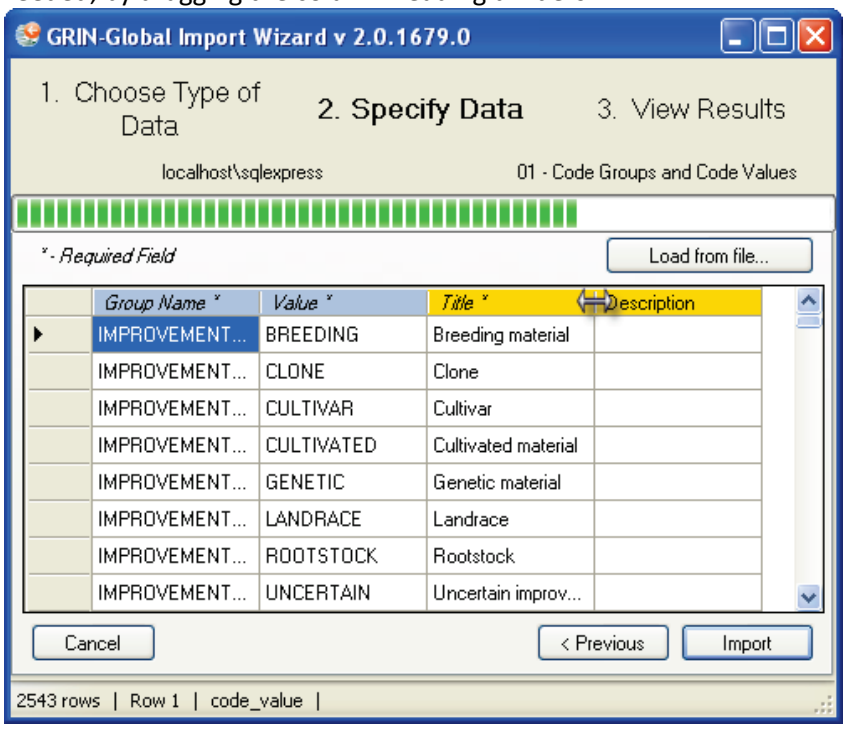
2. Specify the language. (This determines which column headings will be displayed.)

   You can also select from a dropdown who will be considered the owner of the records being imported. (This owner indication only pertains to new records; when existing records are being updated, the original owner remains intact.)

   To see existing data, select the **View all existing data** checkbox. Click the **Next** button.

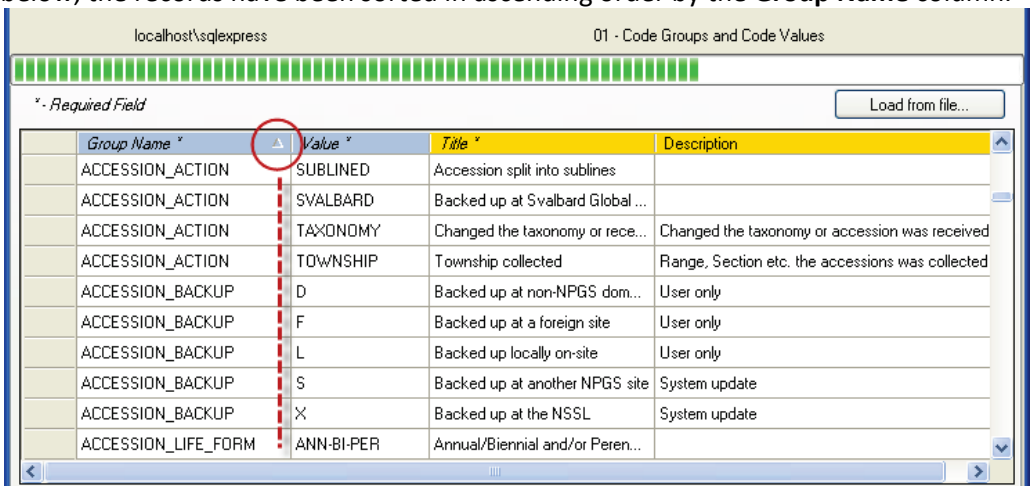


3. A window will display column headings and any existing data; column widths can be adjusted as needed, by dragging the column heading dividers:



Tip

Click on any column heading and the data will be sorted by that column. A sort indicator will display in the column heading, indicating ascending or descending order. In the example shown below, the records have been sorted in ascending order by the **Group Name** column.



Group Name *	Value *	Title *	Description
ACCESSION_ACTION	SUBLINED	Accession split into sublines	
ACCESSION_ACTION	SVALBARD	Backed up at Svalbard Global ...	
ACCESSION_ACTION	TAXONOMY	Changed the taxonomy or rece...	Changed the taxonomy or accession was received
ACCESSION_ACTION	TOWNSHIP	Township collected	Range, Section etc. the accessions was collected
ACCESSION_BACKUP	D	Backed up at non-NPGS dom...	User only
ACCESSION_BACKUP	F	Backed up at a foreign site	User only
ACCESSION_BACKUP	L	Backed up locally on-site	User only
ACCESSION_BACKUP	S	Backed up at another NPGS site	System update
ACCESSION_BACKUP	X	Backed up at the NSSL	System update
ACCESSION_LIFE_FORM	ANN-BI-PER	Annual/Biennial and/or Peren...	

This data can be easily dragged into a spreadsheet for review or editing. If you hold the Ctrl key while dragging, the actual table names will be displayed as the column headings; otherwise, the friendly names will serve as the headings.

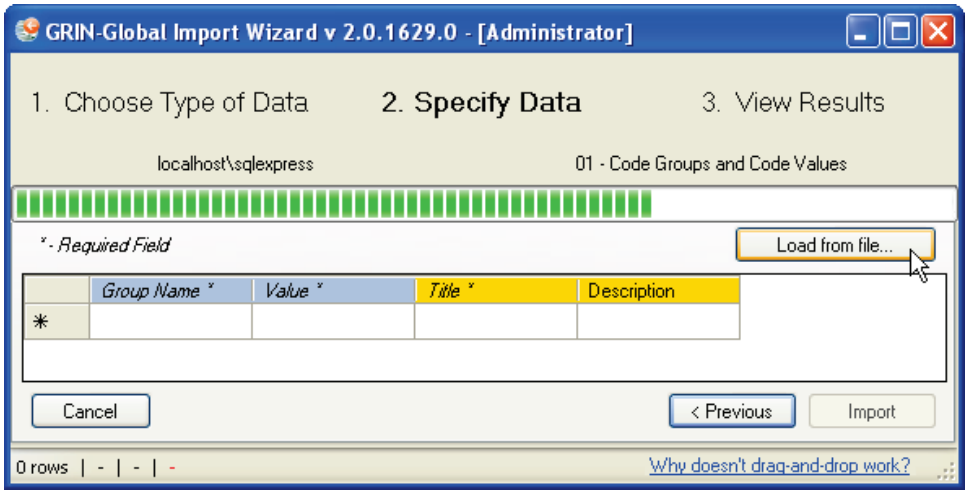
Step 2 – Specify Data

There are two alternative methods for importing the data into the Import Wizard. You can either:

- Import a .csv file.
- Copy/paste data from a spreadsheet to the Import Wizard

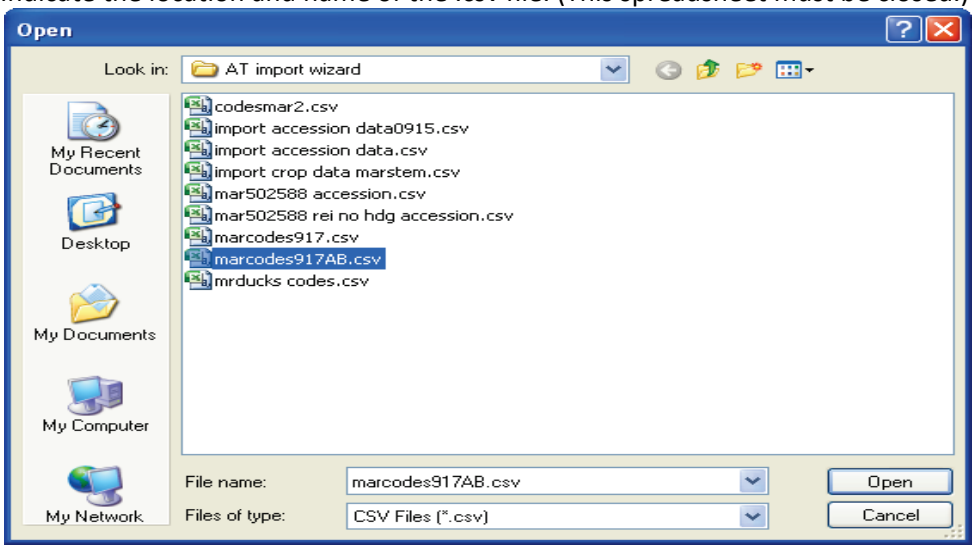
To Import a .csv file:

1. Click the **Load from file…** button

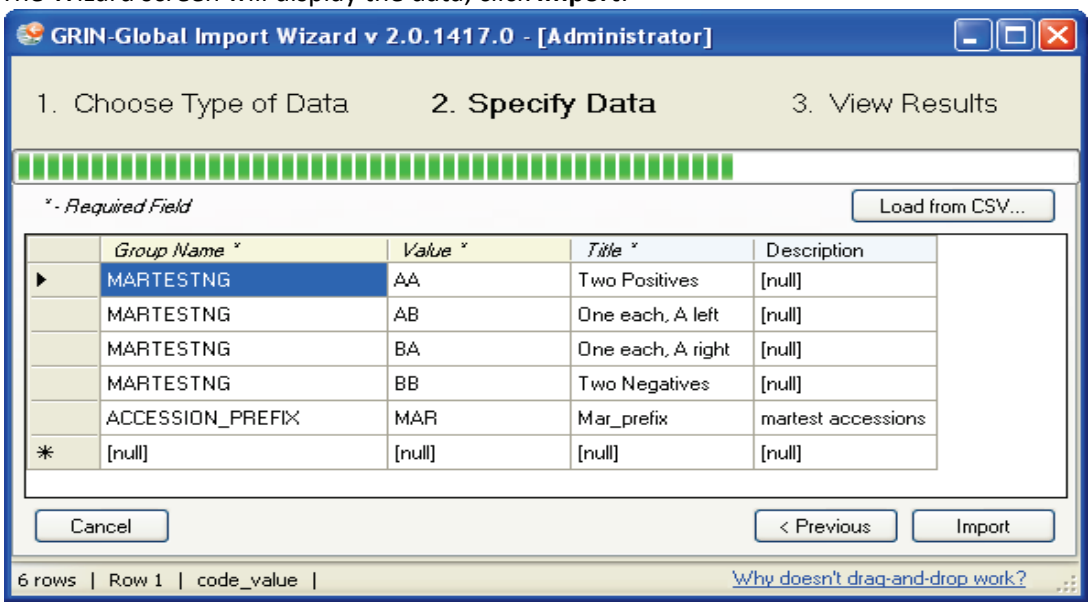


The four fields that will be imported are displayed. Their column names in this case were their English "friendly" names. Required fields have their column headings marked with an asterisk.

2. Indicate the location and name of the .csv file. (This spreadsheet must be closed.)



3. The Wizard screen will display the data; click **Import**:



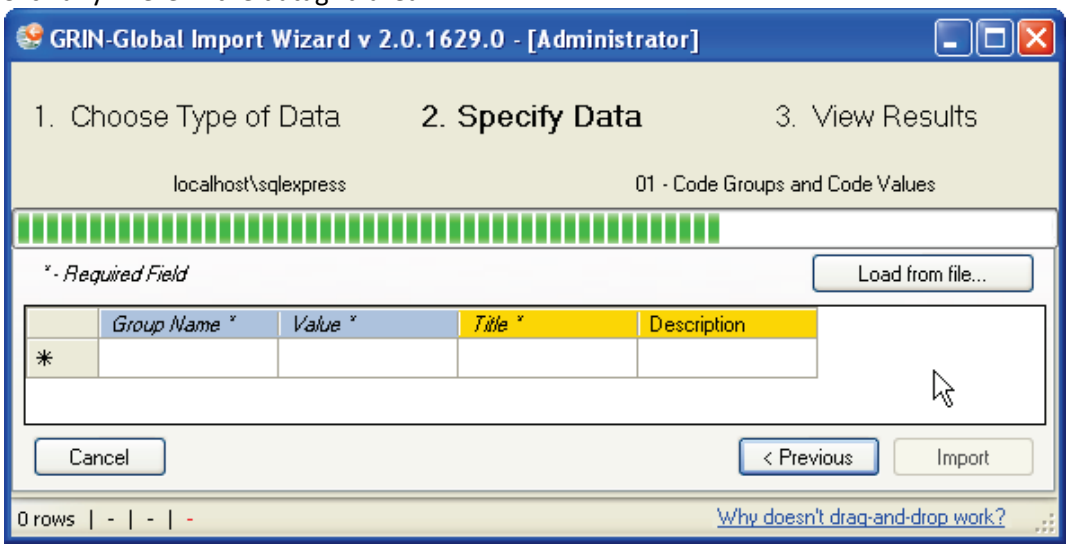
alternatively…

To Copy & Paste Date

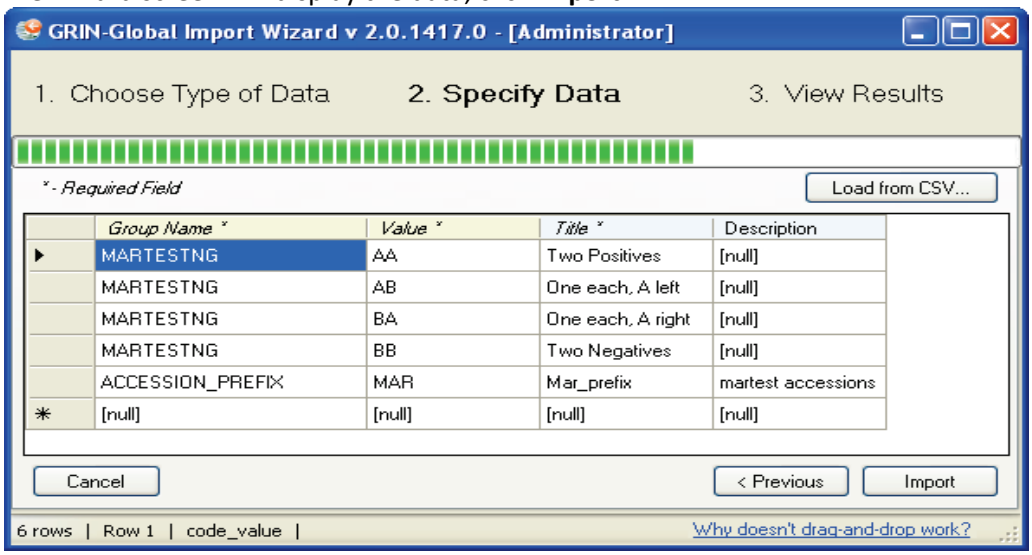
1. In your spreadsheet, copy the data, including the headings row:

Group Name	Value	Title	Description
MARTESTNG	AA	Two Positives	
MARTESTNG	AB	One each, A left	
MARTESTNG	BA	One each, A right	
MARTESTNG	BB	Two Negatives	
ACCESSION_PREFIX	MAR	Mar_prefix	martest accessions

2. Click anywhere in the datagrid area:



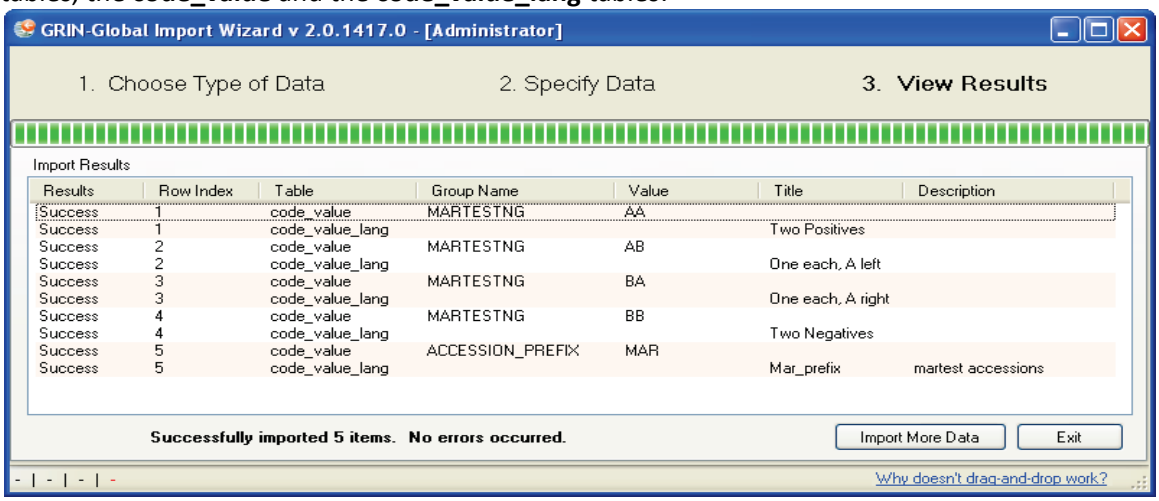
3. The Wizard screen will display the data; click **Import**:



Step 3 – View Results

The Import Wizard will parse each record and update tables accordingly. The wizard returns a summary report. The summary will itemize each row that was submitted along with the specific tables and fields that were updated.

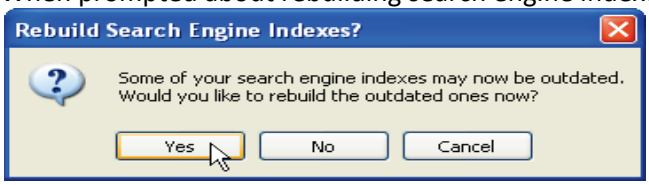
In this example, five records were imported successfully. Notice that each record updated two related tables, the **code_value** and the **code_value_lang** tables:



Click the **Import More Data** or **Exit** button, as appropriate.

Step 4 – Update the Search Engine Index and Lookup Tables

When prompted about rebuilding search engine indexes, click **Yes**.



Update Lookup Tables in the Curator Tool

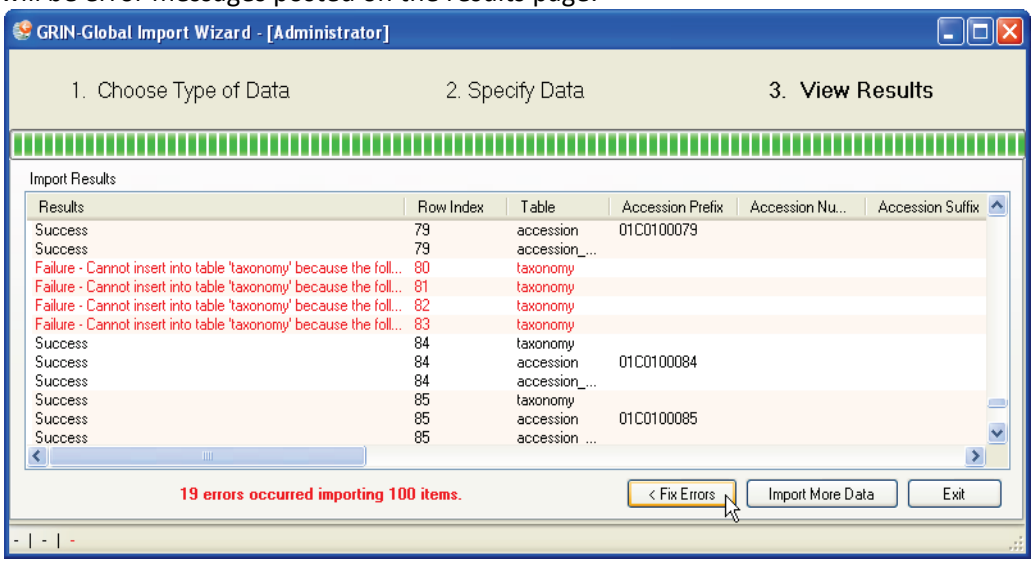
Not only do the search indexes need updating, since records in the database tables have been modified, the lookup tables relating to the tables will require updating in the Curator Tool.

Tip

Do it now! In the Curator Tool, open the Lookup Table Loader window and update the lookups related to the tables that were imported.

Error Handling

In the importing process, the Import Wizard may encounter problems with the data. When it does, there will be error messages posted on the results page:



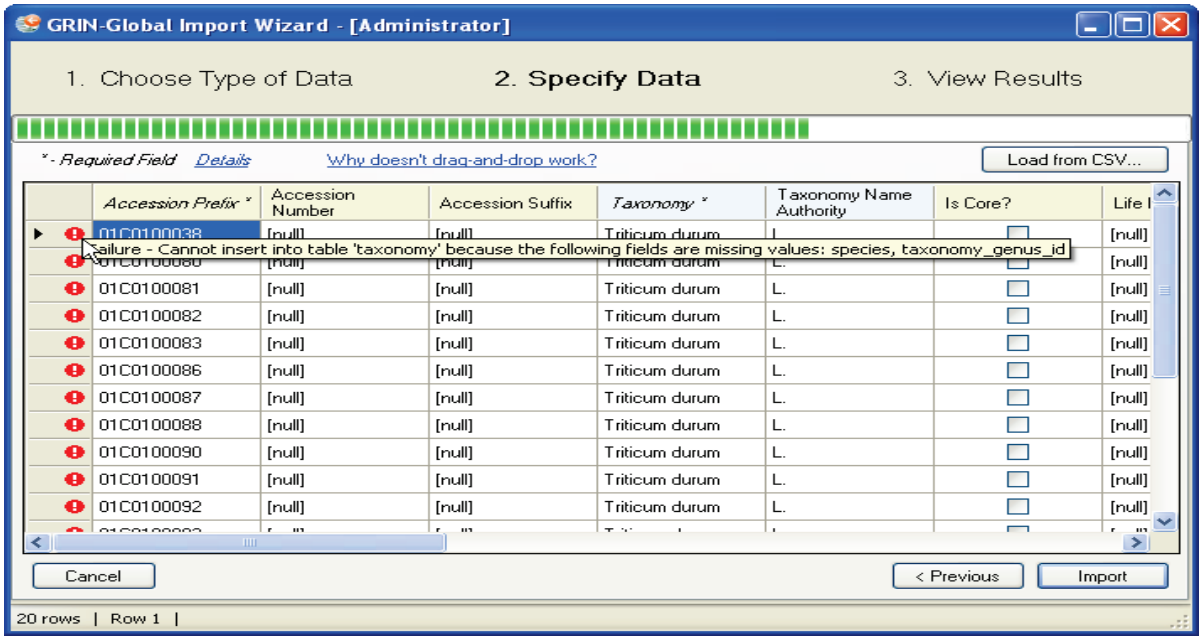
When there are errors listed, you have three options:

- **Fix Errors** – displays the records that were skipped and provides an opportunity for correcting the data (see *Fix Errors* section below)
- **Import More Data** – returns the wizard to step one
- **Exit** – closes the wizard and prompts you to update indexes (see *Update Search Engine Indexes* section)

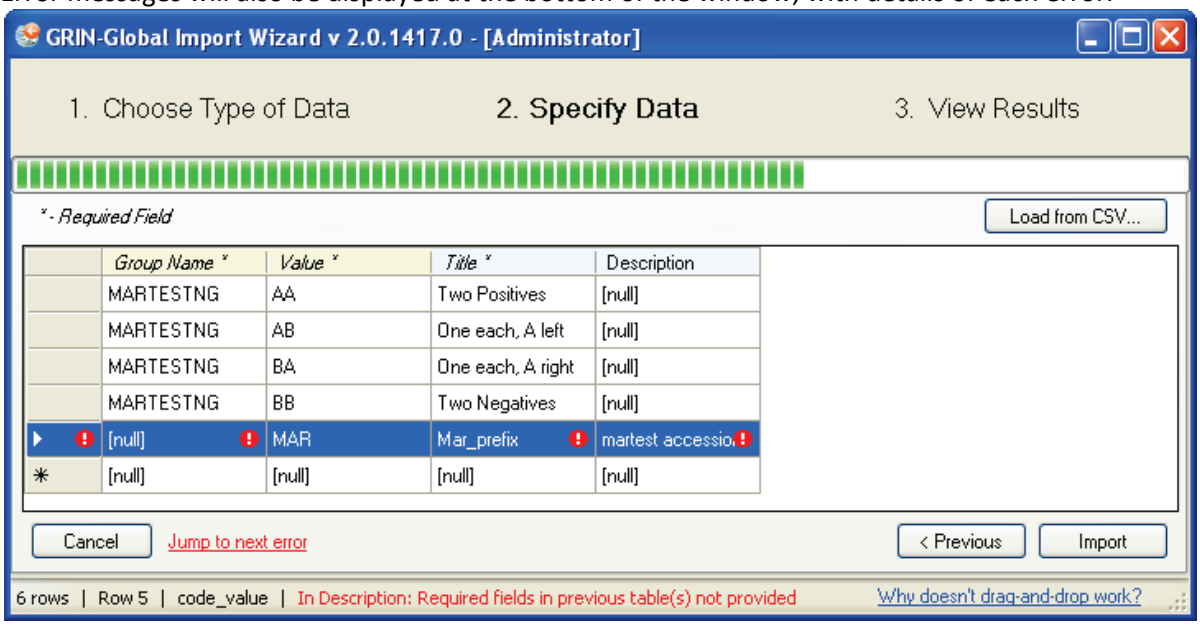
Fix Errors

There are two major kinds of errors–those the **Import Wizard** can detect *before* writing to the database (validation errors) and those that occur when attempting to write to the database (constraint errors). The former will show both the row and column the error applies to since it is known. The latter will show an error only at the row level.

The **Fix Errors** option provides an opportunity to review and correct any records that were skipped by the import process. Locate the specific error of each record by placing your cursor within the cell of a row.



Error messages will also be displayed at the bottom of the window, with details of each error.



Editing

Edits can be made directly within the grid view, or, you can select the data and put it into a spreadsheet for further refinement at a later time. To delete a record, select the row; right-click, select **Delete**.

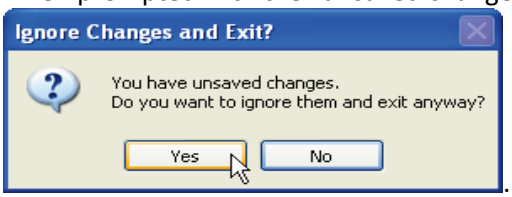
Note

Import Wizard has been programmed to accept data that already exists – when that happens, it will simply update that data instead of inserting. It detects this by what is defined in the Table Mappings as making up a unique index. For example, in the **code_value** table, the **group_name** and **value** fields comprise the index.

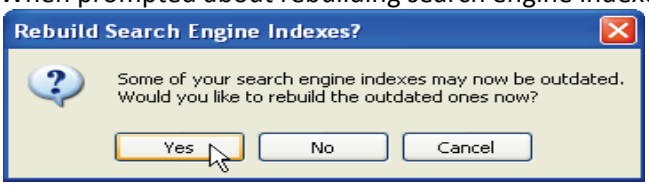
If you make your edits within the grid view, click **Import** when you are ready to submit the changes.

If you intend to correct the errors in a spreadsheet, it is recommended that you:

1. Copy the records having the errors into a spreadsheet
2. **Cancel** out of the grid view; return to step one of the import process
3. When prompted with the "unsaved changes" message, click **Yes**



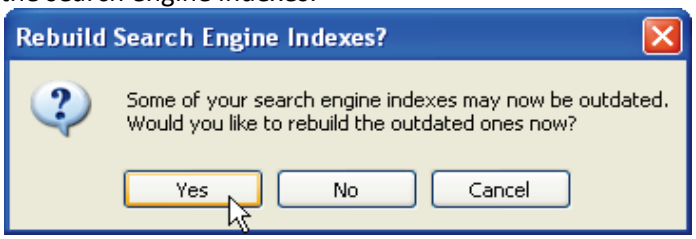
4. When prompted about rebuilding search engine indexes click **Yes**



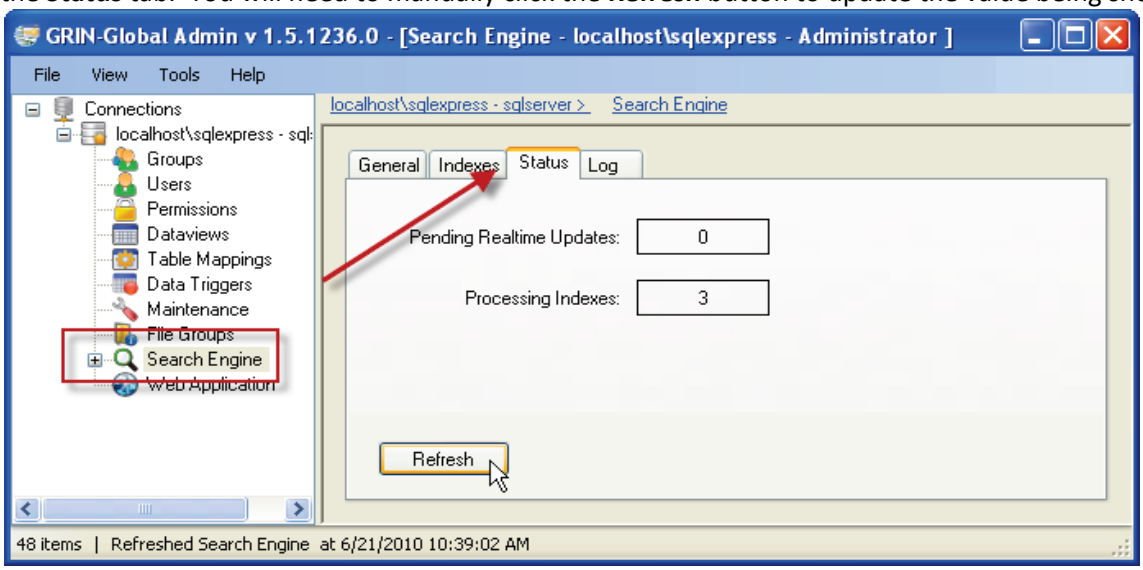
5. After making appropriate corrections to the data, repeat the Import wizard steps.

Update Search Engine indexes

After new records have been imported, the search engine needs to rebuild its indexes to include the new records. When exiting, if records have been imported, the Import Wizard will prompt you to rebuild the search engine indexes:



You can monitor the status of indexes being processed. In the **Admin Tool**, select **Search Engine;** click the **Status** tab. You will need to manually click the **Refresh** button to update the value being shown.



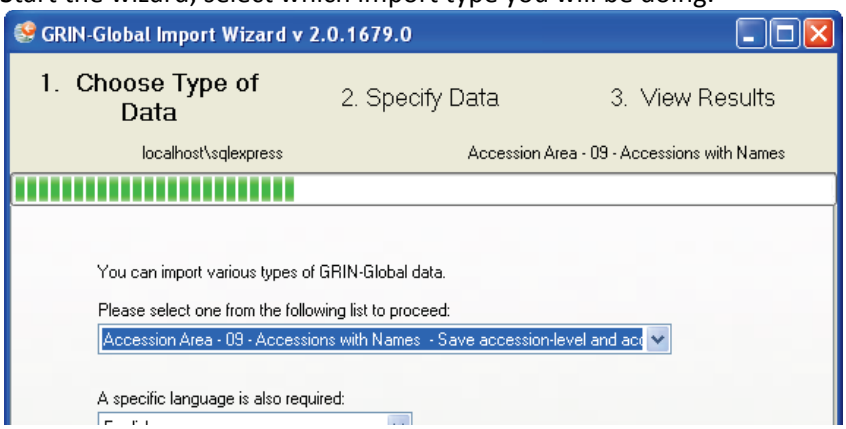
Tip

Refer to the GRIN-Global online data dictionary to obtain detailed information about any field in any dataview in the GRIN-Global schema.
See http://www.ars-grin.gov/npgs/gringlobal/docs/gg_data_dictionary.pdf

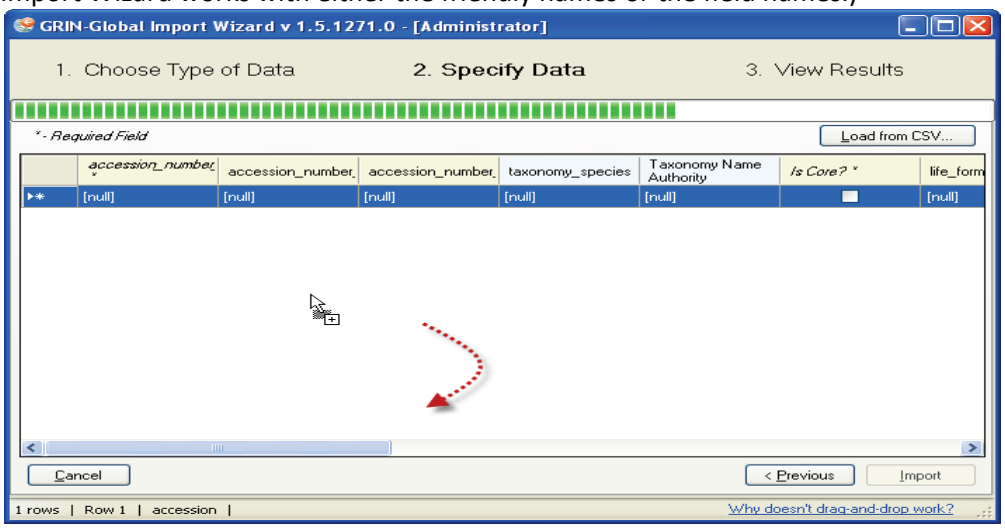
Dragging Column Headings from the Wizard

The following step-by-step example illustrates dragging the column headings from the Import Wizard to a spreadsheet. Note that drag and drop works in Windows XP, but not Windows 7 or Vista.

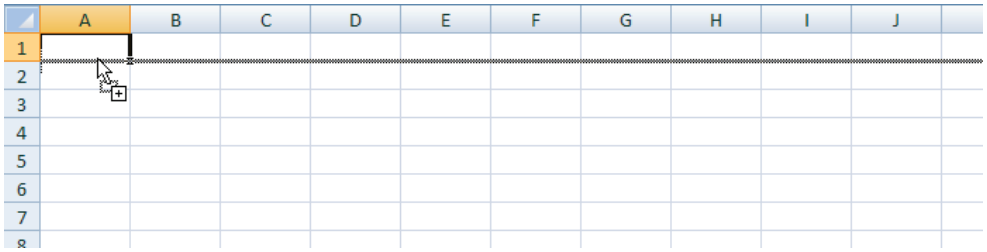
1. Start the wizard; select which import type you will be doing.



2. Click in the data row header cell (on the left); then click in the data row and start dragging into a blank spreadsheet. (Press **Ctrl** before dragging to **obtain** the **actual** field names; however, the Import Wizard works with either the friendly names or the field names.)



3. Drop in the spreadsheet (usually in the upper corner, but can be anywhere); adjust the widths of the columns as needed.



DETAILED DESCRIPTIONS OF IMPORT WIZARDS

(01) Database Code Groups & Values

Fields

The Import Wizard dataview for importing **Code Groups and Values** records updates two related tables:

- **code_value**
- **code_value_language**

The wizard imports four fields:

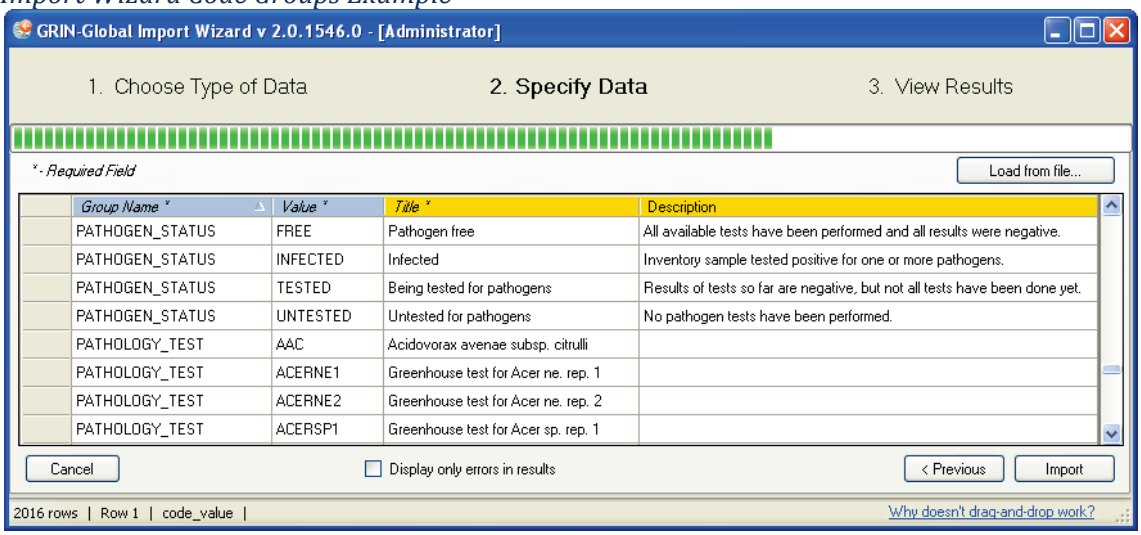
Field (Friendly Name) [Table]	**Length/ Attribute***	**Description**	**Examples**
group_name (Group Name) [code_value]	100	The group name used for a set of codes. Example: Improvement Status. Refer to the online document "[to be developed]" that describes in detail the codes that are used by GRIN-Global.	PATOGEN_STATUS, PATHOLOGY_TEST, POLLINATION_METHOD
value (Value) [code_value]	20	The actual value of a code	FREE, INFECTED, TESTED, UNTESTED
title (Title) [code_value_language]	500	This is the text displayed in the dropdowns.	Pathogen free Infected
description (Description) [code_value_language]	max	An optional description used to provide additional information about the code's value.	"All available tests have been performed and all results were negative."

*nvarchar, unless specified; length is the allowable number of characters; "max" is the maximum number of characters allowed by the database management tool

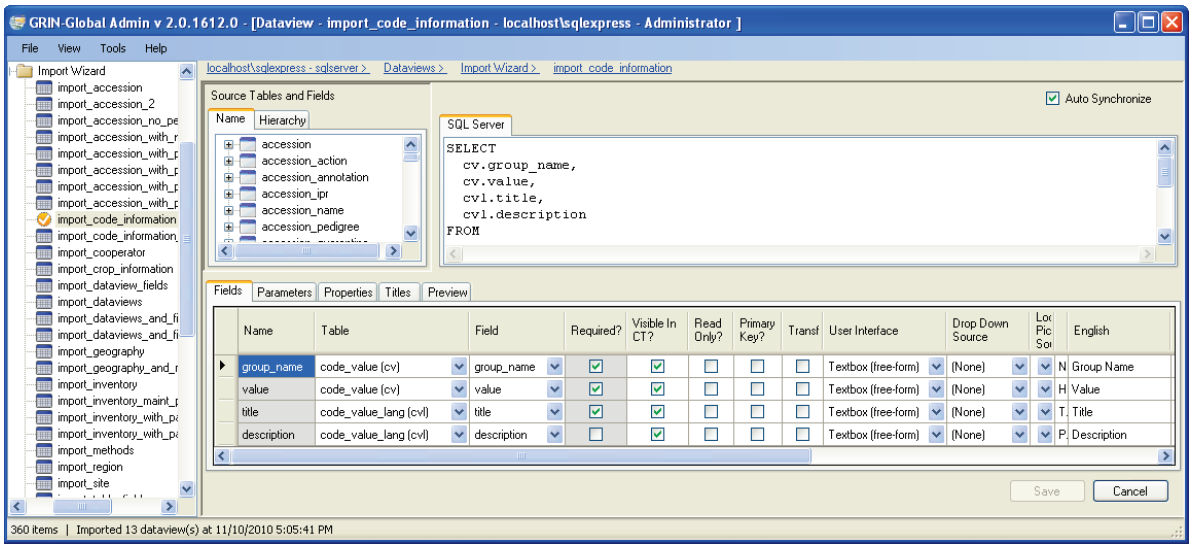
Note The table above is online at [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]. Please refer to this document for the field descriptions for this and the other Import Wizards described in this cookbook.

Sample Data

Import Wizard Code Groups Example



The Admin Tool dataview editor indicates the table and fields for the **import_code_information** Import Wizard dataview:



Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **01 - Code Groups**…

01 - Code Groups and Code Values - Save language-specific verbiage for code_value data

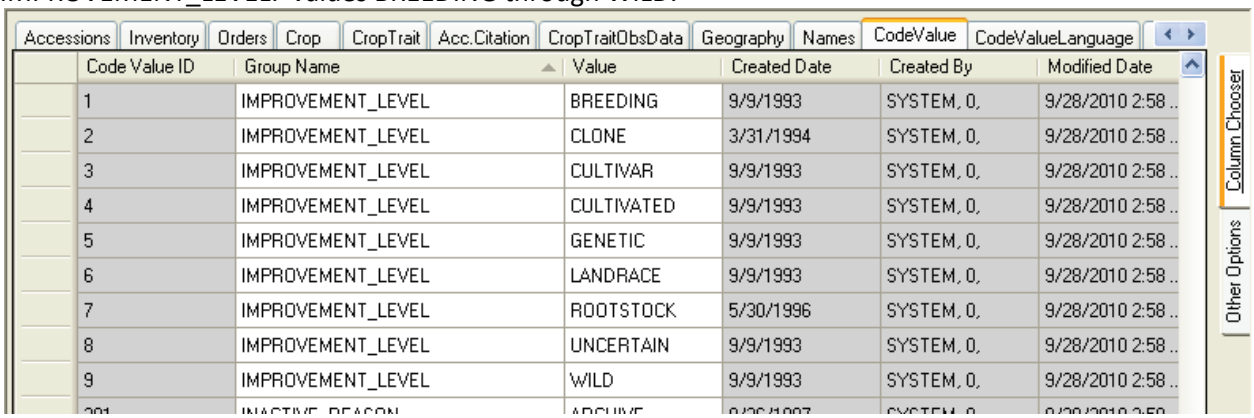
For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Note that the Import Wizard cannot be used to *delete* items, such as Code Groups, so if there are any Code Groups that need to be deleted, do so via the Code Group editor. Refer to the Admin Tool Guide for details on using the Code Groups editor.

Background Information

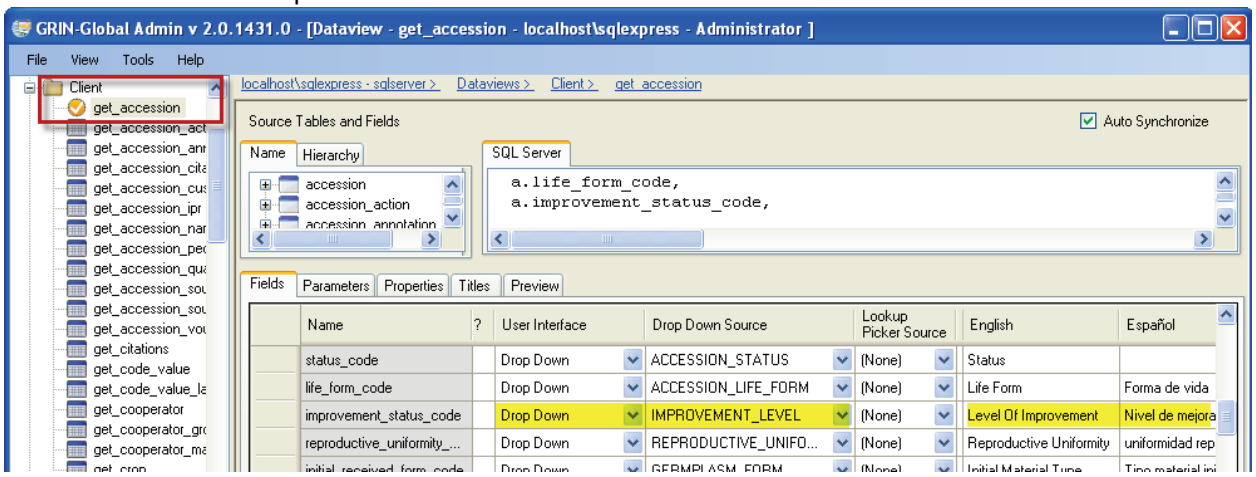
Many Curator Tool dataviews use dropdowns to assist the user in selecting a valid entry from a list. Fields using dropdowns do not allow random text data to be entered, but instead require a value from a pre-populated set of values. The items in the dataview dropdowns are stored in two related Code Group tables. What codes and data values are stored in the two Code Group tables? All kinds! The next four screens use a sample, the "IMPROVEMENT_LEVEL" code, to illustrate how a code group and its possible values are displayed in the Curator Tool.

In the Curator Tool, the CodeValue dataview shows there are nine possible values for the Group Name IMPROVEMENT_LEVEL: values BREEDING through WILD.



Code Value ID	Group Name	Value	Created Date	Created By	Modified Date
1	IMPROVEMENT_LEVEL	BREEDING	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
2	IMPROVEMENT_LEVEL	CLONE	3/31/1994	SYSTEM, 0,	9/28/2010 2:58 ..
3	IMPROVEMENT_LEVEL	CULTIVAR	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
4	IMPROVEMENT_LEVEL	CULTIVATED	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
5	IMPROVEMENT_LEVEL	GENETIC	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
6	IMPROVEMENT_LEVEL	LANDRACE	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
7	IMPROVEMENT_LEVEL	ROOTSTOCK	5/30/1996	SYSTEM, 0,	9/28/2010 2:58 ..
8	IMPROVEMENT_LEVEL	UNCERTAIN	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..
9	IMPROVEMENT_LEVEL	WILD	9/9/1993	SYSTEM, 0,	9/28/2010 2:58 ..

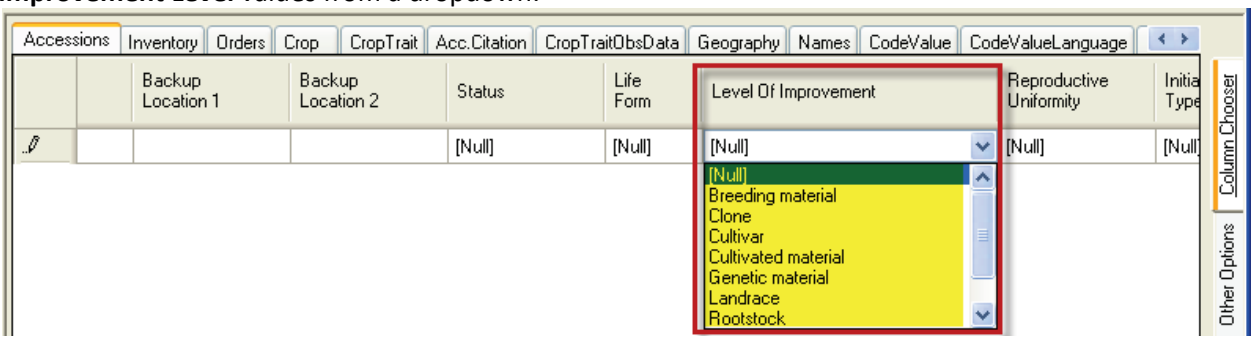
The next screen, from the Admin Tool Dataview editor, is highlighting the field **improvement_status_code** in the **get_accession** dataview. This field uses **IMPROVEMENT_LEVEL** for its source of data in the dropdown:



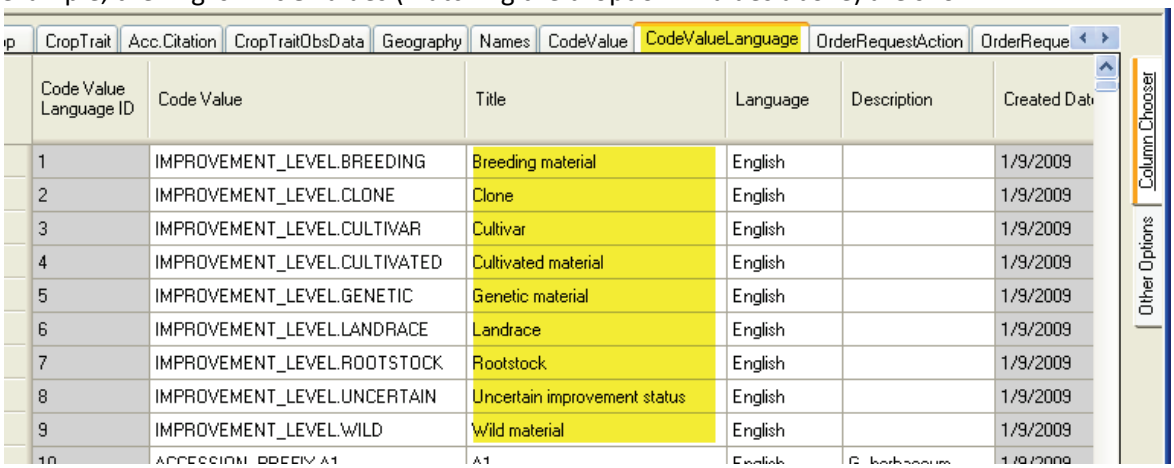
Notice that when this dataview is displayed in the Curator Tool, the English column heading, the friendly name is actually "Level of Improvement."

(01) Database Code Groups & Values

In the Curator Tool, when working with the Accession dataview, the user is able to select the **Improvement Level** values from a dropdown:

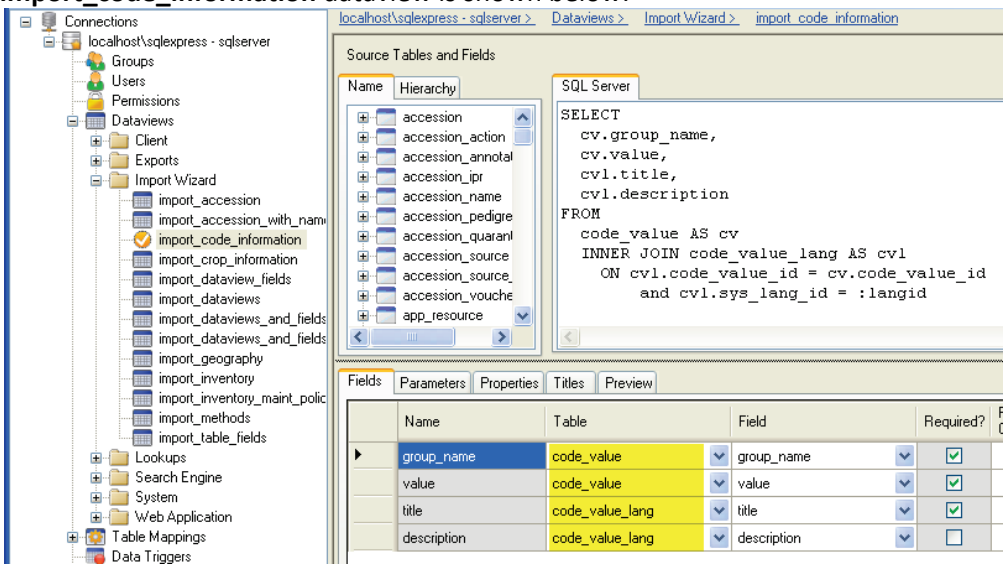


However, did you notice that although the dropdown values are similar, they do not match exactly the Values listed in the **CodeValue** dataview? You can deduce there must be another location where these values are stored. The values are stored in the related **CodeValueLang** table. Because GRIN-Global handles multiple languages, this second table holds the values displayed for each language. In this example, the English **Title** values (matching the dropdown values above) are shown:



Note that the **CodeValue** field in the **CodeValueLang** dataview combines the **Group Name** and the **Value** fields from the **CodeValue** table.

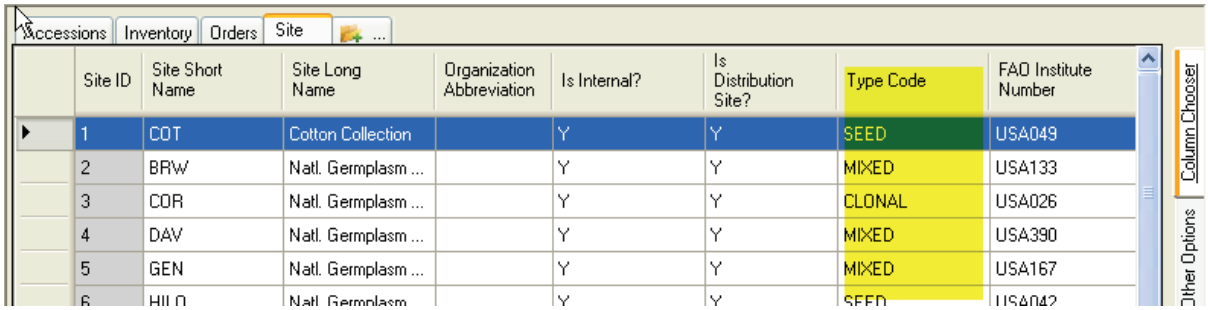
As mentioned earlier, the GRIN-Global Code Groups Import Wizard fills four fields from two tables. The **import_code_information** dataview is shown below:



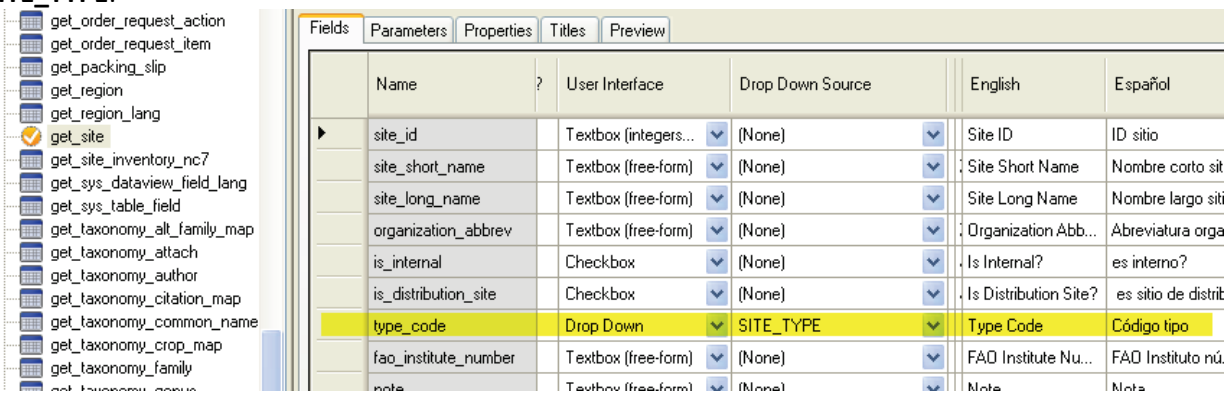
Another example of Code Values…

SITE_TYPE (example)

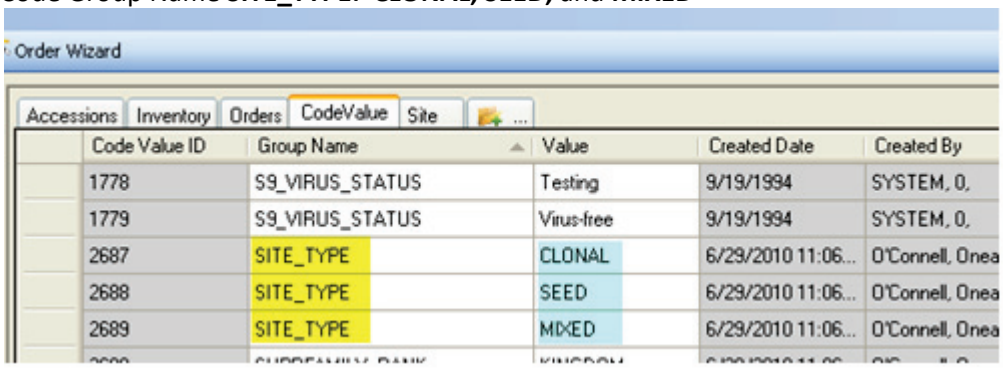
In the Curator Tool, in the **get_site** dataview, the values SEED, MIXED, and CLONAL display in the **Type Code** column.



In the Admin Tool, the **type_code** field uses for its Drop Down Source the Code Group named **SITE_TYPE**:



In the Curator Tool, when reviewing the **CodeValue** dataview, there are three possible values for the Code Group Name **SITE_TYPE: CLONAL, SEED,** and **MIXED**



(02) Site Table

Fields

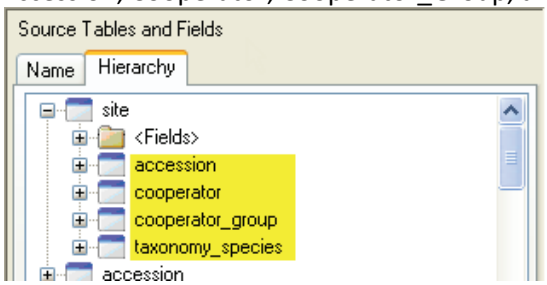
The Import Wizard **Site** dataview imports the fields for the **site** table. The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **02 – Site Data**

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Background Information

The **Site** Table is used by the GRIN-Global system in various ways. For instance, when a new Curator Tool is defined by the GRIN-Global administrator in the Admin Tool, the administrator assigns a site code to the user. Users within the same site code can share lists in the Curator Tool. The Hierarchy tab in the Admin Tool dataview editor screen shows that four other tables are dependent on the Site table: Accession, Cooperator, Cooperator_Group, and Taxonomy_species.



Sample Data

(03) Region Table

Fields

The Import Wizard **Region** dataview imports fields for the **region** table. The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

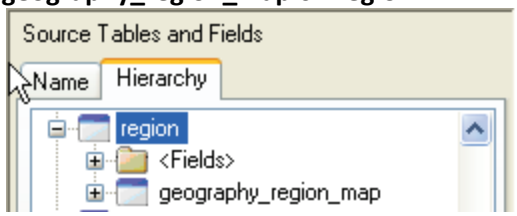
Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **03 – Region Data**

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Background Information

Region needs to be place in order for the **geography map** to tie geography to regions. This needs to be handled via the Curator Tool **get_geography_region_map** dataview. Therefore, geography (discussed in the next section) needs to be in place, region is in place and then they are tied together with the map table. This enables a many-to-many relationship. Nigeria belongs to both West Africa and Africa. Africa, of course, has many countries in it.

In the dataview editor, the **Source Tables and Fields** panel shows the dependency of **geography_region_map** on **region**:



Sample data

(04) GRIN-Global Geography Data

Fields

The Import Wizard dataview for importing Geography-related records updates two tables:

- **geography**
- **geography_lang**

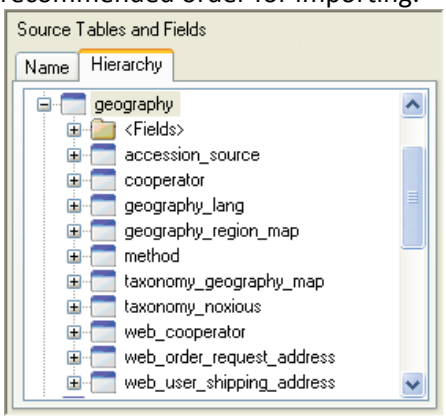
The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **04 – Geography Data**

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Background Information

Many tables are dependent on the **Geography** Table including **accession_source**, **cooperator**, and **method**, among others. These dependent tables are discussed later in this document, reflecting the recommended order for importing.



Sample Data

(05) Cooperators

The **Cooperator** table holds the contact information for individuals as well as organizations. All users added via the Admin Tool are included in the cooperator table. These contacts include the collectors, donors, and developers of the accessions as well as those who evaluate and request the germplasm.

Fields

The Import Wizard dataview for importing Cooperator data updates four tables:

- **sys_lang**
- **cooperator**
- **geography**
- **site**

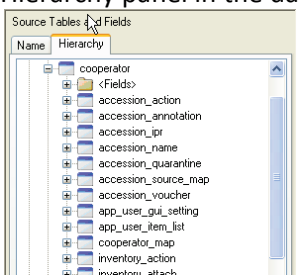
The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **05 – Cooperator Data**

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Background Information

Many tables are dependent on the cooperator data, as shown below in a partial screen capture of the Hierarchy panel in the dataview editor window:



Sample Data

(06) Taxonomy Data

Fields

Because GRIN-Global Taxonomy support synonyms, the taxonomy-related data is quite extensive. Three separate wizards have been written to import data into three different tables:

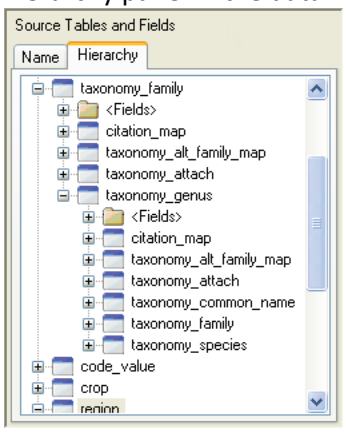
- **taxonomy_family**
- **taxonomy_genus**
- **taxonomy_ species**

By using the three smaller dataviews, you can collect your data and load it in smaller "chunks." The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Background Information

Many tables are dependent on the taxonomy data, as shown below in a partial screen capture of the Hierarchy panel in the dataview editor window:



Sample Data: Taxonomy Family Taxonomy Genus Taxonomy Species

(07) Crop Characterization / Evaluation Descriptors (Crop Traits)

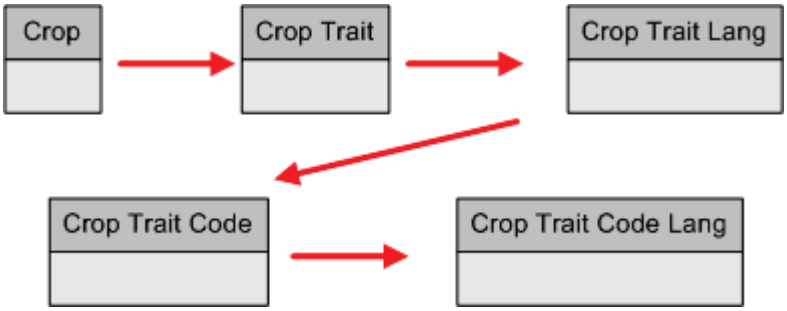
Fields

To avoid confusion with the term "descriptors," we need to clarify how its use is intended here. This section is referring not to *passport* descriptors, but rather to *crop characterization and evaluation* descriptors. Passport descriptor data in GRIN-Global is stored under the Accession tables – the main Accession table and its child tables.

The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Crops and Crop Traits Overview

There are five crop-related dataviews that need to be considered when setting up the crops' Characterization / Evaluation Descriptors for your organization. The following diagram illustrates the general flow in inputting /editing data in the crop-related dataviews that you should follow when manually establishing new crop traits:



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

Conversely, you cannot delete a crop from the Crop table if it has traits associated to it. Similarly, traits cannot be removed from the Crop Trait table unless all of the dependent data in the children tables has been removed first.

Because GRIN-Global handles multiple languages, the two –language tables are needed to hold the values that are displayed for each language.

The Import Wizard handles adding data to all five tables simultaneously, obviously making it much easier to bulk input data when an organization already has collected this data.

How to Import the Crop Characterization and Evaluation Descriptors

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **07 – Crop Trait**…

Sample Data

(07) Crop Characterization / Evaluation Descriptors (Crop Traits)

Follow the Import Wizard directions for loading or copying data. However, read the following text for specific information about the Crop-related fields that will be imported by the Import Wizard. It may be helpful to also use the Admin Tool and the Curator Tool to follow along as you read the next several pages.

The Import Wizard dataview for importing Characterization and Evaluation Descriptor Codes imports the following fields:

Note

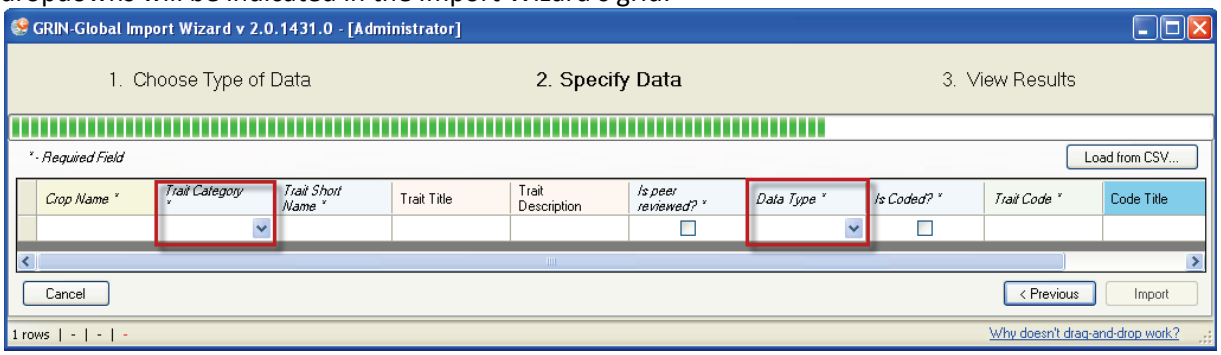
Two of the fields that will be imported, **Trait Category**, and **Data Type**, must match the existing Group Names in the GRIN-Global Database Code table. (The Code table was described earlier; see GRIN-Global Database Field Codes for details.)

If you review the **import_crop_information** dataview **in the Admin Tool,** you will see the two fields that use drop down sources for their values:

Name	Table	Field	R	Prir Key	Tra	User Interface	Drop Down Source	Loc Pic Sou	English
name	crop	name	☑	☐	☐	Textbox (free-form)	(None)		Crop Name
category_code	crop_trait	category_code	☑	☐	☐	Drop Down	DESCRIPTOR_CATEGORY		Trait Category
coded_name	crop_trait	coded_name	☑	☐	☐	Textbox (free-form)	(None)		Trait Short Name
ct_title	crop_trait_lang	title	☐	☐	☐	Textbox (free-form)	(None)		Trait Title
ct_description	crop_trait_lang	description	☐	☐	☐	Textbox (free-form)	(None)		Trait Description
is_peer_reviewed	crop_trait	is_peer_reviewed	☑	☐	☐	Checkbox	(None)		Is peer reviewed?
data_type_code	crop_trait	data_type_code	☑	☐	☐	Drop Down	CROP_TRAIT_DATA_TYPE		Data Type
is_coded	crop_trait	is_coded	☑	☐	☐	Checkbox	(None)		Is Coded?
code	crop_trait_code	code	☑	☐	☐	Textbox (free-form)	(None)		Trait Code
code_title	crop_trait_code_lang	title	☐	☐	☐	Textbox (free-form)	(None)		Code Title
code_description	crop_trait_code_lang	description	☐	☐	☐	Textbox (free-form)	(None)		Code Description

(In referring to these fields on thenext page, we'll continue to use their English names, "Trait Category" and "Data Type," rather than their database field names.)

As you proceed with the import wizard you can also identify fields using drop down sources; the dropdowns will be indicated in the Import Wizard's grid:



Whatever values you supply for these fields must match exactly their related Group Names stored in the **CodeValue** table. On the previous page, we saw that the data source for the two dropdowns is the Group Names **DESCRIPTOR_CATEGORY** and **CROP_TRAIT_DATA_TYPE**.

The following screen shows some sample **DESCRIPTOR_CATEGORY** values stored in a **CodeValue** table. These would be the valid values to import for the "Trait Category" field:

Acc.Citation | CropTraitObsData | Geography | Names | CodeValue | CodeValueLanguage | OrderRequestAc

Code Value ID	Group Name	Value	Created Date	Created B
2730	DATE_QUALIFIER	NEAR	8/20/2010 6:40 ...	SYSTEM,
361	DESCRIPTOR_CATEGORY	CHEMICAL	9/9/1993	SYSTEM,
362	DESCRIPTOR_CATEGORY	COMMENT	10/14/1993	SYSTEM,
363	DESCRIPTOR_CATEGORY	CYTOLOGIC	3/17/1994	SYSTEM,
364	DESCRIPTOR_CATEGORY	DISEASE	9/9/1993	SYSTEM,
365	DESCRIPTOR_CATEGORY	FLWR-FRUIT	3/23/1999	SYSTEM,
366	DESCRIPTOR_CATEGORY	GENSTOCK	9/9/1993	SYSTEM,
367	DESCRIPTOR_CATEGORY	GROWTH	11/21/1996	SYSTEM

Similarly, in the **CodeValue** table in this example four possible values are valid for **CROP_TRAIT_DATA_TYPE**. When using the Import Wizard to import your data, you would therefore use one of the four "Values" for the "Data Type" field, as shown below:

Acc.Citation | CropTraitObsData | Geography | Names | CodeValue | CodeValueLanguage | OrderRequestAc

Code Value ID	Group Name	Value	Created Date	Created B
358	COOPERATOR_TITLE	Srta.	9/9/1993	SYSTEM,
1623	CROP_TRAIT_DATA_TYPE	CHAR	5/26/1994	SYSTEM,
1624	CROP_TRAIT_DATA_TYPE	LOWER	5/26/1994	SYSTEM,
1625	CROP_TRAIT_DATA_TYPE	NUMERIC	5/26/1994	SYSTEM,
1626	CROP_TRAIT_DATA_TYPE	UPPER	5/26/1994	SYSTEM,
1880	CROP_TRAIT_OBSERVATIO	10TH	9/29/1995	SYSTEM

To import the Crop Descriptors, a spreadsheet similar to the following is needed:

	A	B	C	D	E	F	G	H	I	J	K
1	Crop Name	Trait Category	Trait Short Name	Trait Title	Trait Description	Is peer reviewed?	Data Type	Is Coded?	Trait Code	Code Title	Code Description
2											
3	NC7-CUCUMIS	GROWTH	PLTVIGOR2	MAXIMUM PLANT VIGC	Maximum plant vigor.	N	CHAR	Y	1		GOOD
4	MUSA	PHENOLOGY	BNCHPHENO	Bunch Phenotype	Phenotype of the bunch.	Y	CHAR	Y	2		True-horn
5	MUSA	MORPHOLOGY	PSTEMCOL	Plant Pseudostem Colc	Color of the plant's pseudost	Y	CHAR	Y	2		Pale green
6	MILLET-FOXTAIL	MORPHOLOGY	VEGSTRUCT	VEGETATIVE STRUCTUR	The vegetative structures are	N	CHAR	Y	RHIZOME		Long rhizon
7	MILLET-FOXTAIL	MORPHOLOGY	VEGSTRUCT	VEGETATIVE STRUCTUR	The vegetative structures are	N	CHAR	Y	BU-VERT-RHIZ		Bunch with

Note that the headings in the spreadsheet must match the spelling of the headings used by the Import Wizard:

GRIN-Global Import Wizard v 2.0.1431.0 - [Administrator]

1. Choose Type of Data 2. Specify Data 3. View Results

* - Required Field Load from CSV...

Crop Name *	Trait Category *	Trait Short Name *	Trait Title	Trait Description	Is peer reviewed? *	Data Type *	Is Coded? *	Trait Code *	Code Title	Code Description
SORGHUM	Morphologic...	MESOCARP	Mesocarp	Mesocarp	☑	Alpha/numeric des...	☑	2		Thin
SORGHUM	Morphologic...	PANICLELGT	Panicle Length	Length of panicle...	☑	Numeric descriptor	☐			
SORGHUM	Morphologic...	SPREADER	Spreader	Spreader	☑	Alpha/numeric des...	☑	2		No
SORGHUM	Morphologic...	SPROUTTE...	Sprouting Te...	Seed sprouting te...	☑	Alpha/numeric des...	☑	1		Yes
SORGHUM	Morphologic...	STALKWAXI	Stalk Waxiness	Waxiness of the s...	☑	Alpha/numeric des...	☑	2		Sparse bloom
SORGHUM	Production d...	YIELDPOTEN	Yield Potential	Yield potential (1 ...	☑	Numeric descriptor	☐			
SORGHUM	Morphologic...	EXSERTION	Inflorescence...	Inflorescence exs...	☑	Numeric descriptor	☐			

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

(08) Methods

"Method" is referring to the name describing the method environment and/or procedure used in evaluating the accession's crop traits (characteristic/evaluation descriptors) and inventory descriptors.

Fields

The Import Wizard dataview for importing Methods updates three related tables:

- **geography**
- **method**
- **geography_lang**

The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Sample Data

(09) Accessions

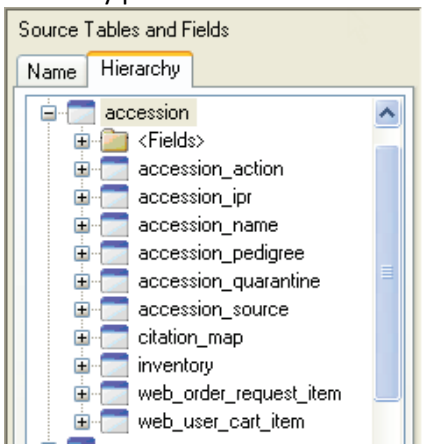
Fields

The Import Wizard dataview for importing Accessions updates three related tables: **taxonomy_species, accession, and accession_pedigree**.

The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

For step-by-step directions for using the Import Wizard, see STEP-BY-STEP IMPORT WIZARD DIRECTIONS on page 12.

Many tables are dependent on the accession data, as shown below in a partial screen capture of the Hierarchy panel in the dataview editor window:



Sample Data

(10) Inventory Maintenance Policy

The Maintenance Policy refers to the "rules" when handling Inventory: the default form in which the germplasm is stored, the default units and quantities for distribution, the default units of germplasm by which orders are filled for this group, and the default number of germplasm units necessary for replenishment.

A number less than this critical replenishment value indicates the need to increase the inventory sample.

Fields

The Import Wizard dataview for importing **Inventory Maintenance Policy** records updates two tables:

- **inventory_maint_policy**
- **geography_lang**

The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **10 – Inventory Maintenance Policy**

For step-by-step directions for using the Import Wizard, see STEP-BY-STEP IMPORT WIZARD DIRECTIONS on page 12.

Sample Data

(11) Inventory Data

Fields

The Import Wizard dataview for importing **Inventory** updates three related tables:

- **inventory**
- ac**cession**
- **inventory_maintenance_policy**

The field descriptions are online at: [http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **11 – Inventory Data**

For step-by-step directions for using the Import Wizard, see **STEP-BY-STEP IMPORT WIZARD DIRECTIO**NS on page 12.

Sample Data

(12) Observations (Character & Evaluation Descriptors)

Fields

The Import Wizard dataview for importing **Observations** updates six related tables:

- **Crop**
- **Crop Trait**
- **inventory**
- **Method**
- **Crop Trait Code**
- **Crop Trait Observation**

The field descriptions are online at:
[http://www.ars-grin.gov/npgs/gringlobal/docs/gg_import_wizard_fields.pdf]

Use **Admin Tool |Maintenance |Launch Import Wizard** to start the wizard; select **12 – Cooperator Data**

For step-by-step directions for using the Import Wizard, STEP-BY-STEP IMPORT WIZARD DIRECTIONS on page 12

Sample Data: Apple Eggplant Pear Potato Sunflower Tomato