

Data Exporter for Helium Pedigree Visualization Framework

Helium Exporter for Helium Pedigree Visualization Framework is custom data exporter that will transform germplasm and phenotypic data into format fully compatible with Helium Pedigree Visualization application.

Helium Pedigree Visualization Framework: Shaw, P.D., Kennedy, J., Graham, M., Milne, I. and Marshall, D.F. 2014. Helium: Visualization of Large Scale Plant Pedigrees. BMC Bioinformatics. 15:259. [DOI: 10.1186/1471-2105-15-259](https://doi.org/10.1186/1471-2105-15-259)

DEPENDENCIES



RAWPHENOTYPES MODULE

INSTALLATION

1. Install all dependencies (please note to install all dependencies directly related to RAWPHENOTYPES MODULE)
2. Install and enable this module as you would any other Drupal Module.
3. Configure module using configuration page. Link is displayed next to the enabled module in the modules page.

ENABLED	NAME	VERSION	DESCRIPTION	OPERATIONS
<input checked="" type="checkbox"/>	Data Export for Helium Pedigree Visualization		Provides a data export of germplasm and phenotypic data for visualization using Helium. Requires: Raw Phenotypes (enabled), Drag & Drop Upload Element (enabled), Drag & Drop Upload (enabled), Tripal CV (enabled), Tripal Core (enabled), Views (enabled), Chaos tools (enabled), Path (enabled), Prof Filter (enabled), Tripal (enabled), Search (enabled), Entity API (enabled), Redirect (enabled), Tripal Chado (enabled), Date (enabled), Date API (enabled), Image (enabled), File (enabled), Field (enabled), Field SQL storage (enabled), Link (enabled), Tripal Chado Views (enabled), Tripal OI (enabled), Libraries (enabled), System (enabled)	 Configure

CONFIGURATION

Home » Administration » Tripal » Extensions
Helium Exporter Configuration

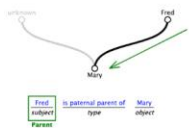
STOCK PEDIGREE RELATIONSHIP

To ensure that pedigrees display correctly, you need to configure this module to use your vocabulary correctly. Specifically,

1. Ensure that you've chosen all the relationships needed to get from your child stock/germplasm to it's parents.
2. Ensure that relationships will be followed in the right direction. Since relationships are bi-directional in Tripal/Chado you need to configure which relationships have the parent as the subject and which have the parent as the object.
3. Ensure to indicate terms used to identify a maternal parent and a paternal parent.
4. (Optional) If you have setup a help page relating to use of this data exporter, provide URL/link in the help link field below.

NOTE: Each relationship can only be followed in ONE direction.

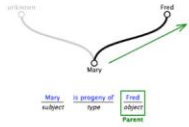
Subject is Parent



Select the relationships below where the parent-side of the relationship is the subject. This will put the subject higher in the tree than the object, as shown in the diagram above.

☐ is_maternal_parent_of
☐ is_paternal_parent_of
☐ is_individual_of_population
☐ is_selection_of

Object is Parent



Select the relationships below where the parent-side of the relationship is the object. This will put the object higher in the tree than the subject, as shown in the diagram above.

☐ is_maternal_parent_of
☐ is_paternal_parent_of
☐ is_individual_of_population
☐ is_selection_of

Select term used to identify maternal parent

Select term used to identify paternal parent

URL/link to Helium Exporter help page. This field is optional. If not set, help link will be disabled in the interface.

Save Configuration

Configuration Variables

SUBJECT IS PARENT

The parent-side of the relationship is the subject

OBJECT IS PARENT

The parent-side of the relationship is the object

TERM USED TO IDENTIFY

MATERNAL PARENT

Term used to indicate a germplasm is a maternal parent of another germplasm.

TERM USED TO IDENTIFY

PATERNAL PARENT

Term used to indicate a germplasm is a paternal parent of another germplasm.

HELP PAGE URL/LINK

If a help page relating to the use of this module has been setup, this configuration field will enable help links in the interface to direct user to this help page.

Data Exporter requires vocabulary terms used to relate germplasm to one another namely, Subject is Parent, Object is Parent and Parental Relationships (to determine male and female parents) variables.

Note: A warning message is shown on both configuration page and exporter page when this module is not configured correctly.

DATA EXPORTER INTERFACE

Site-Install

My account Log out

Home

Navigation

- Add Tripal Content
- Add content
- Controlled Vocabularies
- Raw Data

Data Exporter for Helium

Visualize plant pedigrees and overlay categorical data using Helium:

Helium is a generic platform in which various data types can be shown in a pedigree context. [Okay, Get It!](#)

[Download Helium](#) | [More Information](#)

Step #1:
Download and install Helium viewer application in your computer. Please use the link below and select an operating system.

[Download and install Helium](#)

Step #2:
Use the built-in data exporter below to generate a data file. Click the link below for guide on using the exporter.

[How to download data](#)

Step #3:
Load the data file generated in step #2 into Helium to visualize. Click the link below to explore and how to use Helium.

[How to load data into Helium](#)

Download Data

Experiment

Phenotyping Experiment ABC 2021

Germplasm: 50 / 27 Selections

☒ GERM 1
☒ GERM 10
☒ GERM 11
☐ GERM 12
☐ GERM 13
☒ GERM 14
☒ GERM 15

Traits: 7 / 4 Selections

☒ Phenotyping Trait AA (g)
☐ Phenotyping Trait AB (g)
☒ Phenotyping Trait AC (count)
☒ Phenotyping Trait A (cm)
☒ Phenotyping Trait B (cm)
☐ Phenotyping Trait C (cm)
☐ Phenotyping Trait D (cm)

☒ Parental Relationships Only

Download

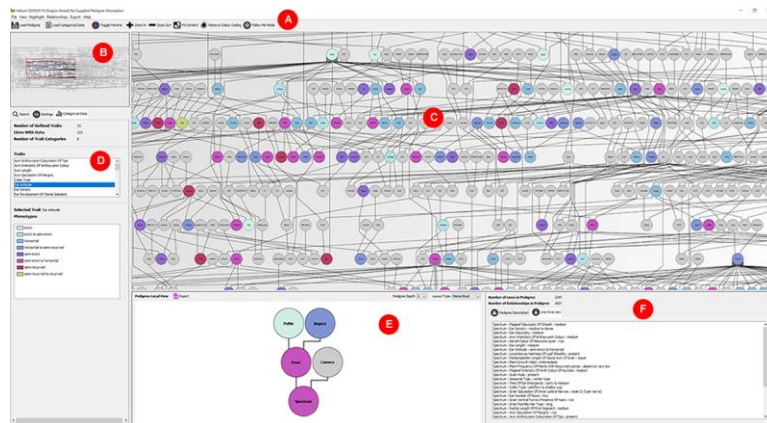
Helium: Visualization of Large Scale Plant Pedigrees.

Shaw, P.D., Kennedy, J., Graham, M., Mina, I. and Marshall, D.F. 2014.

BMC Bioinformatics. 15:259. DOI: 10.1186/1471-2106-15-259

- Link to Data Exporter for Helium Pedigree Visualization application knowledgebase/help.
- Graphical step by step guide showing you how to export data and setup Helium Pedigree Visualization application.
- Experiment selector.
- Germplasm/lines selector with search functionality.
- Trait/categorical data selector with search functionality.
- Parental Relationship option.
- Submit or export button.
- Helium Pedigree Visualization Framework citation information.

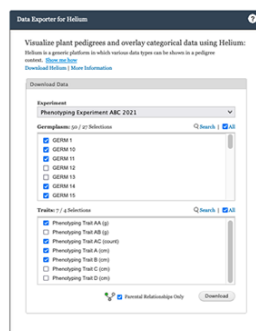
HELIUM PEDIGREE VISUALIZATION INTERFACE



<https://bmcbioinformatics.biomedcentral.com/articles/10.1186/1471-2105-15-259>

- A. Control Panel – Load data file buttons are in this section.
- B. Overview Panel - contains a high-level overview of the entire pedigree.
- C. Main Pedigree Visualization Panel - is where most manipulations happen.
- D. Data Selection Panel - contains phenotypic data that you can click and select to overlay.
- E. Local View Panel - contains local view of the selected line with less clutters associated with the main pedigree.
- F. Detail Panel - contains overview statistics of the selected line.

EXPORT DATA AND VISUALIZE USING HELIUM PEDIGREE VISUALIZATION



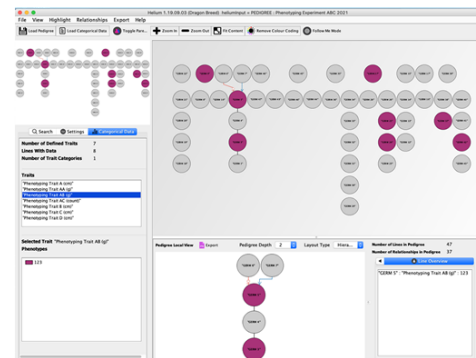
[my Tripal site/helium-exporter](https://my.Tripal.org/helium-exporter)

1 Select Experiment, Germplasm and Trait

Helium Exporter Download

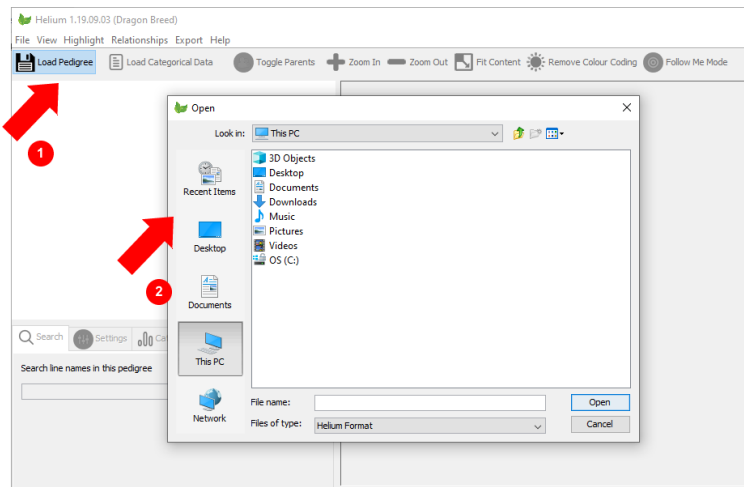


2 Download 2 .helium files - pedigree and categorical data files



3 Load pedigree and categorical data files into Helium

LOADING PEDIGREE AND CATEGORICAL DATA INTO HELIUM



1. Click Load Pedigree button or if available (enabled) Load Categorical Data button.
2. Browse and locate pedigree or categorical data file (.helium files are in downloads directory for most setup). Depending on which button was activated, Load Pedigree button expects pedigree data file and Load Category Data button expects categorical data file.
3. Helium Main Pedigree Visualization Panel will load pedigree when file has been selected.