

GDR

Breeding Information Management System

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Vision

To provide individual breeders with a secure and comprehensive online breeding management system which will allow them to:

- Store, manage, archive and analyze their private breeding program data
- Fully integrate their data with publicly available genomic, genetic and breeding data in the community database
- Manage data from the Field Book App, an android app for collecting phenotype data in the field

Current Breeder's Toolbox in GDR

- Private and public data
- Tools
 - Search/browse/download
 - Breeding decision tools: Cross Assist and Seedling Select
- Data upload: data in templates are loaded by GDR team
 - Templates for stock, phenotype, genotype, dataset, trait descriptors, location, cross, propagation, etc

Components of the new GDR BIMS

- Archive
- Manage Breeding
- Data Import
- Search/Download
- Field Book App Management
- Data Analysis Tools
- Breeding Decision Tools

Manage Breeding

Apple Crop BIMS - Apple Project Hello admin | [Site Home](#) | [Log out](#)

Archive

Manage Breeding

- [Project](#)
- [Program](#)
- [List](#)
- [Location](#)
- [Trial](#)
- [Cross](#)

Data Import

Data Edit

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Manage Project

▸ Instructions

▸ Project Admin Menu

Project Selection

RosBreed – Apple
Evans – Washington Apple Breeding Program

Create a new project

Project Details

Owner	admin
Project Name	RosBreed – Apple
Description	BIMS project for apple. Public and private data are from breeders in NY, MN and WA.
Programs	View programs

Manage Breeding: Creating a New Program

The screenshot shows a web application interface for managing breeding programs. On the left is a sidebar with a menu. The main content area has a tabbed interface with 'Program Selection' and 'Add Program' tabs. The 'Add Program' tab is active, showing instructions and a form to create a new program.

Archive

Manage Breeding

- Breeding Program
- Manage List
- Location
- Trial
- Cross

Data Import

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Program Selection **Add Program** x

Instructions

Create a new program to use BIMS for your private breeding program. Within your program you can create multiple trials and make multiple crosses in multiple locations. You do not need to create multiple programs unless you need to create a collaborative breeding program with which you do not want to share your own private breeding data. Once you create your program you can add members and give them privilege to read or read/write. If you are using the same trait descriptors as one of the public trait evaluation datasets in CottonGEN, you can choose the trait descriptor group. Otherwise you can upload a file with the trait descriptors.

Edit

Add a new program

Program Name

Add a new descriptor group ▼

Description

Add Program

Manage Breeding – manage program members

The screenshot shows a web application interface for managing breeding programs. At the top, there are navigation tabs for 'Apple', 'Crop', 'Washington Apple Breeding Program', and 'Project'. A user profile 'Hello kate' is visible in the top right corner with links for 'Site Home' and 'Log out'. The main content area is titled 'Manage Breeding' and contains a sidebar with a menu: Project, Program, List, Location, Trial, and Cross. The main area has two tabs: 'Manage Program' and 'Mange members'. A green notification box at the top of the main area states 'Itaein has been added as a member'. Below this is an 'Instructions' section. The 'Current members' section shows a list of members for 'Private Data' with one entry: 'Itaein - READ'. A 'Remove Member' button is located below the list. The 'Add Members' section includes a 'Non-member' dropdown menu, a 'Permission' section with radio buttons for 'READ ONLY' (selected) and 'FULL', and an 'Add Member' button.

Archive

Apple Crop Washington Apple Breeding Program Project

Hello kate | Site Home | Log out

Manage Breeding

- Project
- Program
- List
- Location
- Trial
- Cross

Manage Program Mange members

Itaein has been added as a member

Instructions

Current members

Current members for Private Data

Itaein - READ

Remove Member

Add Members

Non-member

Permission

READ ONLY

FULL

Add Member

Data Import

Data Edit

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

You will manage who has access to your program data, controlled by permission levels

Manage Breeding: View Descriptors

Apple Crop Washington Apple Breeding Pr Project

Hello admin | Site Home | Log out

Archive

Manage Breeding

- Project
- Program
- List
- Location
- Trial
- Cross

Data Import

Data Edit

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Manage Program Descriptors

Instructions

Descriptor for *APPLE_KE*

Appearance

Cross_data

Flavor

Production

Progeny_data

Propagation_data

Texture

Non-category

Name	Definition
APP_SUM	Summary of appearance ratings
Browning	Severity of browning
BT/DL	Overall bright or dull
%COL	% red color of skin
FRTDIAM	Diameter of fruit at widest point (inches)
FRTWT_G	
FRTWT_LB	
GL/BL	Skin finish glossy or bloom
GRDCOL	Color of skin not blushed or striped
HUE	Color
Keep	
LENT	Size and visibility of lentils

Manage Breeding: Manage List*

Archive

Manage Breeding

- Breeding Program
- Manage List
- Location
- Trial
- Cross

Data Import

Manage List

Instructions

Browse and search existing lists of germplasm and traits from your private program or public programs.

Current Lists

Add a New List Edit List

- List of germplasm
 - planted in certain sites
 - phenotyped for certain traits
 - phenotyped in certain years
- For
 - data collection sheets
 - downloading data
 - field design

Manage Breeding: Manage Locations

Archive

Manage Breeding

- Breeding Program
- Manage List
- Location
- Trial
- Cross

Data Import

Search

Manage Location

Instructions

View or create location (Trial environment) records.

Current Locations

- College Station, Texas, USA, 2007
- College Station, Texas, USA, 2008
- College Station, Texas, USA, 2009
- College Station, Texas, USA, 2010
- College Station, Texas, USA, 2011

View Location

Add a New Location

View existing locations or
create new locations for trials

Manage Breeding: Create a New Location

Archive

Manage Breeding

- Breeding Program
- Manage List
- Location
- Trial
- Cross

Data Import

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Manage Location + Add Location x

Instruction

Add a new location

Location Name *

Type

- orchard
- orchard
- seedling block
- open field
- greenhouse**

Longitude

Longitude

Country

State

Manage Breeding: Manage Trials*

The screenshot shows a web application interface for managing breeding trials. On the left is a sidebar with a 'Manage Breeding' section containing a list of options: Breeding Program, Manage List, Location, Trial (highlighted), and Cross. The main content area is titled 'Manage Trial' and has two tabs: 'Instructions' and 'Trials'. The 'Instructions' tab is active, displaying text about viewing and downloading trial data and creating new trials. Below the instructions are two buttons: 'Sync' Tree' and 'Create a Trial'. The 'Trials' tab is also visible, showing a file tree structure under 'NCGC' with multiple sub-items representing different germplasm evaluations (AZ01, AZ02, CS07, CS08, CS09, CS10, CS11, CS12, CS13, CS14, CS15).

Instructions

View and download trial data and/or create a new trial by choosing a list of germplasm, a list of trait, a location and a desirable field design. When viewing trials, you can create folders to manage your trial data.

Trials

Sync' Tree Create a Trial

- view/download trial data: also can create folders to manage your trial data.
- create a new trial: to create a field design and a file for collecting phenotype.

Manage Breeding: Manage Crosses*

The screenshot shows a web application interface. On the left is a sidebar menu with the following items: 'Archive', 'Manage Breeding' (highlighted), 'Data Import', 'Search', 'Download', 'Field Book App Management', 'Data Analysis', and 'Breeding Decision Tools'. Under 'Manage Breeding', there is a list of sub-items: 'Breeding Program', 'Manage List', 'Location', 'Trial', and 'Cross'. The main content area has a tab labeled 'Manage Cross' which is active. Below the tab is an 'Instructions' box containing the text: 'View data on crosses, such as name, location, parents, progeny, etc. and/or create a new cross.' Below the instructions box, there are two bullet points: 'View data on crosses, such as name, location, parents and progeny' and 'create a new cross'.

- View data on crosses, such as name, location, parents and progeny
- create a new cross

Data Import: Individual Data Upload - *Germplasm*

Archive	Germplasm
Manage Breeding	
Data Import	
<i>Individual Data Upload</i> <ul style="list-style-type: none">• Germplasm• Trait	Instructions <p>Add germplasm one by one. To load bulk data in a file, click 'From template files' in the menu bar on the left.</p>
<i>Excel Template</i> <ul style="list-style-type: none">• Germplasm• Trait descriptors• Phenotype dataset• Genotype dataset	Add a new germplasm
<i>Field Book</i> <ul style="list-style-type: none">• Phenotype dataset	Germplasm Name * <input type="text"/>
Search	Species <input type="text"/>
Download	Germplasm Type <input type="text" value="breeding_research_material"/>
Field Book App Management	<input type="button" value="Add Germplasm"/>
Data Analysis	
Breeding Decision Tools	

Data Import: Individual Data Upload - *Traits*

Archive

Manage Breeding

Data Import

Individual Data Upload

- Germplasm
- Trait

Excel Template

- Germplasm
- Trait descriptors
- Phenotype dataset
- Genotype dataset

Field Book

- Phenotype dataset

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Trait

Instructions

Browse the trait descriptors in your program and add additional descriptors.

Add a new trait

Trait Name *

Alias

Category

New Category

Data Import: Templates*

Archive

Manage Breeding

Data Import

Individual Data Upload

- Germplasm
- Trait

Excel Template

- Germplasm
- Trait descriptors
- Phenotype dataset
- Genotype dataset

Field Book

- Phenotype dataset

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

File

Instructions

Upload your data in our excel templates or from FieldBook. Excel templates are available for download from the link below.

[Get Bulk Data Templates](#)

Upload data by a file

Breeding Data File

Choose File

No file chosen

Upload

Upload File

Search: By Germplasm Name

Archive

Manage Breeding

Data Import

Search

- [By Name](#)
- [By Parentage](#)
- [By Trait](#)

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

By Name

Instructions

Search germplasm by name. A file with a list of germplasm names can also be loaded for searching. The search results can be saved as a list.

Search by Name

Germplasm Name

Start with ▼

Upload a list of germplasm

Choose File No file chosen

Upload

Search

Search: By Parentage

Archive

Manage Breeding

Data Import

Search

- [By Name](#)
- [By Parentage](#)
- [By Trait](#)
- [...](#)

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

By Parentage

Instructions

Search germplasm by parentage. The search results can be saved as a list.

Search by Parentage

Maternal Parent

Paternal Parent

Search

Download: By Trial

Apple Crop Washington Apple Breeding Program Project Hello kate | Site Home | Log out

Archive
Manage Breeding
Data Import
Data Edit
Search
Download
• By Trial
• By List

Field Book App Management
Data Analysis
Breeding Decision Tools

Manage Trial

Instructions

Trial

Washington Apple Breeding Program

- Public Data
 - Apple_KE_phenotyping_1999
 - Apple_KE_phenotyping_2000
 - Apple_KE_phenotyping_2001
 - Apple_KE_phenotyping_2002
 - Apple_KE_phenotyping_2003
 - Apple_KE_phenotyping_2004
 - Apple_KE_phenotyping_2005
 - Apple_KE_phenotyping_2006
 - Apple_KE_phenotyping_2007
 - Apple_KE_phenotyping_2008
 - Apple_KE_phenotyping_2009
 - Apple_KE_phenotyping_2010
 - Apple_KE_phenotyping_2011
 - Apple_KE_phenotyping_2012
 - Apple_KE_phenotyping_2013
- Private Data

Download Reset

Download data by trial
(multiple can be selected)

Download: By List*

The screenshot shows a web application interface with a sidebar on the left and a main content area on the right. The sidebar contains the following menu items: Archive, Manage Breeding, Data Import, Search, Download (highlighted), Field Book App Management, Data Analysis, and Breeding Decision Tools. The 'Download' menu is expanded, showing two options: 'By Trial' and 'By list' (underlined). The main content area has a tab labeled 'By List' and an 'Instructions' section with the text: 'Choose a list to download phenotype or genotype data.'. Below this is a 'List Selection' section with a large empty text box and a 'Download' button. To the right of the 'List Selection' section is a 'List Details' section, which is currently empty.

Archive

Manage Breeding

Data Import

Search

Download

- By Trial
- By list

Field Book App Management

Data Analysis

Breeding Decision Tools

By List

Instructions

Choose a list to download phenotype or genotype data.

List Selection

List Details

Download

View lists in your account and choose to download the phenotypic and genotypic data for the list of germplasm

Field Book App Management*

Archive

Manage Breeding

Data Import

Search

Download

Field Book App Management

- [Upload files from Field Book](#)
- [Download files for Field Boo](#)

Upload

Instructions

Upload phenotype files saved in your computer to BIMS.

Edit

- Upload trait evaluation data collected with Field Book App to BIMS
- Download trait data collection files in Field Book Format

Data Analysis: Statistical Analysis*

The screenshot shows a software interface with a left-hand navigation menu and a main content area. The navigation menu includes options like 'Archive', 'Manage Breeding', 'Data Import', 'Search', 'Download', 'Field Book App Management', 'Data Analysis', and 'Breeding Decision Tools'. The 'Data Analysis' section is expanded, showing a sub-option 'Statistical Analysis'. The main content area has a tab for 'Statistical Analysis' and an 'Instructions' box that reads: 'Choose trials and traits to calculate and visualize means and standard deviation.' Below the instructions, a bullet point states: 'Choose trials and traits to calculate and visualize means and standard deviation for the dataset.'

- Choose trials and traits to calculate and visualize means and standard deviation for the dataset.

Breeding Decisions: Cross Assist*

The screenshot shows a web application interface. On the left is a vertical navigation menu with the following items: Archive, Manage Breeding, Data Import, Search, Download, Field Book App Management, Data Analysis, and Breeding Decision Tools. The 'Breeding Decision Tools' section is highlighted and contains a list of links: Cross Assist and Seedling Select. The main content area is titled 'Cross Assist' and has a sub-header 'Instructions'. The instructions text reads: 'Cross Assist is an online tool to support your crossing decisions. You specify how many seedlings you'd like to create that are predicted to be above/within your specified trait thresholds. Then from among your available parent pool and according to databased knowledge of performance, breeding values, and/or DNA-based functional genotypes, Cross Assist will generate a list of the most efficient parental combinations to achieve your targets.'

- [Cross Assist](#)
- [Seedling Select](#)

- You specify how many seedlings you'd like to create that are above your specified trait thresholds. Cross Assist will generate a list of the most efficient parental combinations to achieve your targets.

Archive*

Archive

- Manage Archive

Manage Breeding

Data Import

Search

Download

Field Book App Management

Data Analysis

Breeding Decision Tools

Manage Archive

Instructions

Archive your entire data to your computer. Your data in BIMS is backed up in our system but you can also save your entire breeding data to your own computer as an additional safety measure.

Edit

History of Archiving

Archive Data

Filename	Date	File Size	Action
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No archive found

Future Development

- Adding more breeding programs to further test functionality
- Add more statistical analysis and decision tools

Acknowledgements

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