

Data Collection

BMS 11.0 Manual

- [About](#)
- [Inline Edits](#)
- [Export](#)
- [File Format](#)
- [Import](#)
- [Out-of-Bounds](#)
- [Review & Validate](#)
- [Inline Validation](#)
- [Derived Variables](#)
- [Add Derived & Input Variables](#)
- [Execute Calculations](#)
- [Related Topics](#)

About

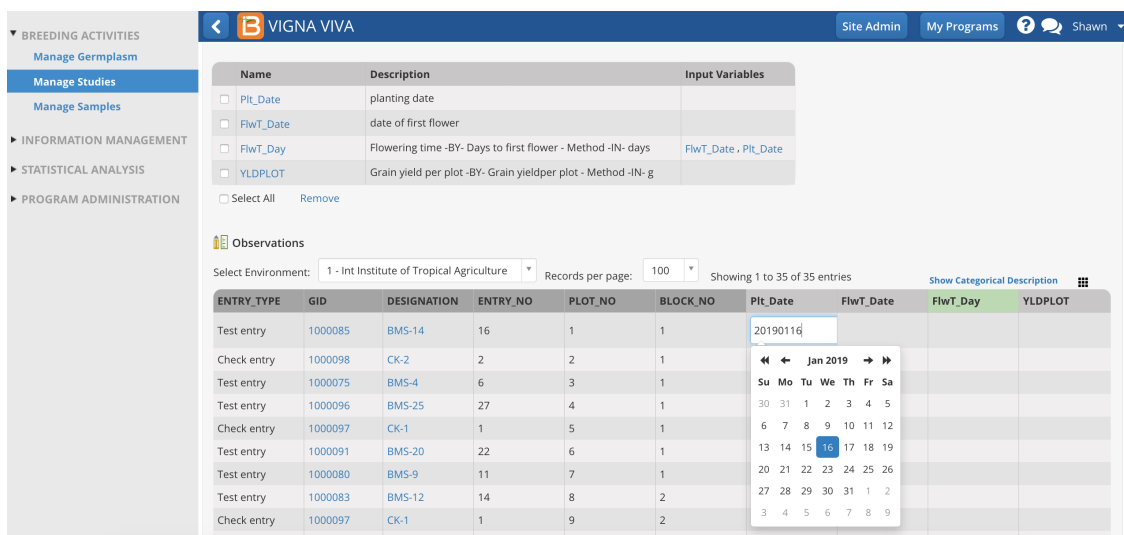
Once you have your observation datasets in place you can start collecting data for your study. You can do this in several ways:

- Inline editing
- Study Book file export and import

Inline Edits

You can modify trait observations by directly clicking on them and typing.

- Click on a cell that you want to modify. The cell should now become editable. Once you've described the desired value you can click outside of the cell to save the input value. In this case you don't need to click on the Save button, the value is automatically saved for you.



Export

Exporting a study book from Manage Studies allows you to export the Study Book in Excel format (one instance per .xls), where measurements can be entered offline and then imported back. If you would like to export the entire study in a single .xls file see [Browse Studies](#).

- Click on **Actions>Data Collection Options>Export study book** to download the study book file. Then select the

study instances that you want to consider for download.

MANAGE STUDIES 2019 M1

Settings Germplasm & Checks Treatment Factors Environments Experimental Design Observations Plants: HT1

Define Observation Details

TRAITS

Name	Description	Input Variables
<input type="checkbox"/> Pit_Date	planting date	
<input type="checkbox"/> FlwT_Date	date of first flower	
<input type="checkbox"/> FlwT_Day	Flowering time -BY- Days to first flower - Method -IN- days	FlwT_Date , Pit_Date
<input type="checkbox"/> YLDPLOT	Grain yield per plot -BY- Grain yieldper plot - Method -IN- g	

Observations

Select Environment: 1 - Int Institute of Tropical Agriculture Records per page: 100 Showing 1 to 35 of 35 entries

ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	PLOT_NO	BLOCK_NO	Pit_Date	FlwT_Date	FlwT_Day	YLDPLOT
Test entry	1000085	BMS-14	16	1	1				
Check entry	1000098	CK-2	2	2	1				

- If your study has more than one dataset, choose the appropriate one and Continue.

MANAGE STUDIES 2019 M1

Export study book

* Indicates a mandatory field

DATASET

Please choose the dataset you would like to export: *

Plots: 2019 M1-P...
Plots: 2019 M1-PLOTDA
Plants: HT1

Cancel Continue

File Format

Observation, or plot-level, datasets have several export format options. Sub-observation data sets only offer .csv format - expect expanded options for sub-observations datasets in upcoming releases. **Note:** If you export more than one instance at a time you'll get a .zip file containing on excel/csv per instance.

- CSV
 - Excel: Format for manual offline measurements taking. This format is compatible with the [DIB handheld data capture](#) application
 - Fieldbook KSU: Format compatible with the [KSU fieldbook](#) data capture application (.csv & .xls)
-
- Select the export format and the data collection order. Serpentine data collection order is available after a field map has been created (see more [Make Field Map](#)).

MANAGE STUDIES 2019 M1

Export Study Book

Please note that serpentine export options are only available if you have already created a field plan.

* Indicates a mandatory field

EXPORT FORMAT

Choose an export format: *

CSV

DATA COLLECTION ORDER

Choose a data collection order: *

Plot Order

Choose Study Environment

Study Environment #	Has Fieldmap
<input checked="" type="checkbox"/> 1	No
<input checked="" type="checkbox"/> 2	No
<input checked="" type="checkbox"/> 3	No

Cancel Export

The exported file is ready for data entry or for label printing.

- Note: OBS_UNIT_ID is a unique observation id suitable for barcode labeling of individual observations.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	OBS_UNIT_ID	REP_NO	BLOCK_NO	PLOT_NO	PLANT_NO	PH_M_cm				
2	Test entry	351041	IB69-1-1-1	69	306e6c23-a45f-401d-bfe3-c52ea6b54b58	1	1	1	1	1				
3	Test entry	351041	IB69-1-1-1	69	b7a58c5d-0ebe-4872-aaa0-b0495686996e	1	1	1	1	2				
4	Test entry	351041	IB69-1-1-1	69	64c8f4f5-b4e3-4db5-92f7-69714f4dc783	1	1	1	1	3				
5	Test entry	351041	IB69-1-1-1	69	c22c8cfb-8c90-4271-8629-cba4cdce427	1	1	1	1	4				
6	Test entry	351041	IB69-1-1-1	69	c4583d33-1ef8-46d9-96c1-02a6d7271d9f	1	1	1	1	5				
7	Test entry	350991	IB19-1-1-1	19	d45069c9-337b-422c-8d75-980414ca2145	1	1	1	2	1				
8	Test entry	350991	IB19-1-1-1	19	e53b0c26-f916-4ce0-bc2d-83b51c3e9703	1	1	1	2	2				
9	Test entry	350991	IB19-1-1-1	19	43c6f0d2-95b7-4b66-9895-41644c859cb0	1	1	1	2	3				
10	Test entry	350991	IB19-1-1-1	19	148a4f70a-54ca-448a-a955-a1d4984bc117	1	1	1	2	4				

Import

- Click on **Actions>Data Collection Options>Import measurements options** to browse for the file to upload

- Select the file and format you want to upload

At this point you can review the imported data. If there is a problem, you can **Discard** the whole dataset or manually modify the problematic values (see below).

- Click on **Save** to store the reviewed measurements. **Note:** It's important to note that existing data will be overwritten. If you don't want data for a particular trait to be overwritten you can erase the corresponding trait column from the imported file

BREEDING ACTIVITIES

Manage Germplasm

Manage Samples

Manage Studies

INFORMATION MANAGEMENT

Import Germplasm

Manage Genotyping Data

Browse Studies

Head to Head Query

Manage Ontologies

Import Datasets

Trait Donor Query

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

MC PROGRAM

Site Admin My Programs ? admin

MANAGE STUDIES

Design Types

Save Discard data

Return to Manage Studies

BASIC DETAILS

Actions

Settings Germplasm & Checks Environments Experimental Design Measurements

Define Measurement Details

TRAITS

Name	Description	Input Variables
<input type="checkbox"/> PH_M_cm	Plant height BY PH - Measurement IN cm	
<input type="checkbox"/> Select All		

Measurements

Records per page: 100 Showing 1 to 100 of 988 entries

Show Categorical Description

TRIAL_INSTANCE	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	REP_NO	PLOT_NO	PH_M_cm
1	T	12225	UGW16225	225	1	1	119
1	T	12189	UGW16189	189	1	2	126
1	T	12179	UGW16179	179	1	3	119
1	T	12074	UGW16074	74	1	4	121
1	T	12125	UGW16125	125	1	5	128
1	T	12229	UGW16229	229	1	6	122
1	T	12108	UGW16108	108	1	7	130
1	T	12062	UGW16062	62	1	8	110

Out-of-Bounds

If the value for a given trait variable exceeds the expected range defined in the ontology (see [Manage Ontology](#)), the BMS will flag these values in red. You are not able to save the data until the out-of-bounds values have been validated, corrected or accepted.

Review & Validate

- Review out-of-bounds data from the Actions Menu under Data Collection Options.

BREEDING ACTIVITIES

Manage Germplasm

Manage Studies

Manage Samples

INFORMATION MANAGEMENT

Import Germplasm

Manage Genotyping Data

Browse Studies

Head to Head Query

Manage Ontologies

Import Datasets

Trait Donor Query

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

MC PROGRAM

Site Admin My Programs ? admin

MANAGE STUDIES

Design Types

Save Discard data

Return to Manage Studies

BASIC DETAILS

Actions

Settings Germplasm & Checks Environments Experimental Design Measurements

Define Measurement Details

TRAITS

Name	Description	Input Variables
<input type="checkbox"/> PH_M_cm	Plant height BY PH - Measurement IN cm	
<input type="checkbox"/> AleuCol_E_1to5	Aleurone color BY AleuCol - Estimation IN 1-5 Aleurone color scale	
<input type="checkbox"/> Select All		

Measurements

Records per page: 100 Showing 1 to 100 of 988 entries

Show Categorical Description

TRIAL_INSTANCE	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	REP_NO	PLOT_NO	PH_M_cm	AleuCol_E_1to5
1	T	12225	UGW16225	225	1	1	128	0
1	T	12189	UGW16189	189	1	2	126	4
1	T	12179	UGW16179	179	1	3	119	2
1	T	12074	UGW16074	74	1	4	121	9
1	T	12125	UGW16125	125	1	5	128	4
1	T	12229	UGW16229	229	1	6	122	2

ERROR

There are some measurements that have invalid value, please correct them before proceeding.

Actions

Save Study

Design and planning options >

Crossing options >

Field map options >

Data collection options

Plant level options >

Advance study options >

Close study

Delete study

Export study book

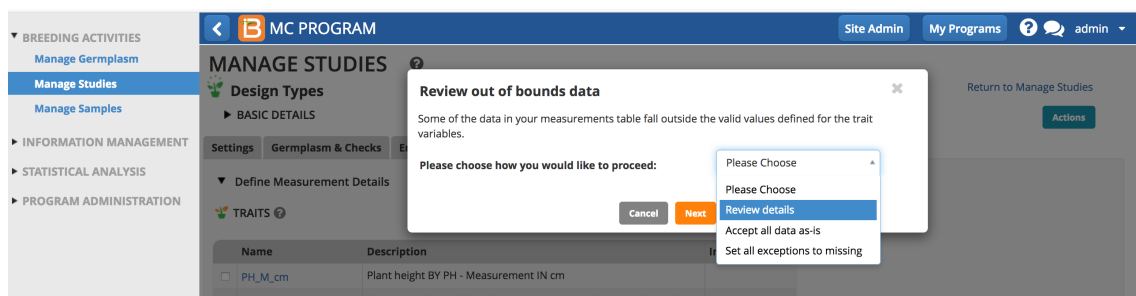
Import Measurements

Export germplasm list

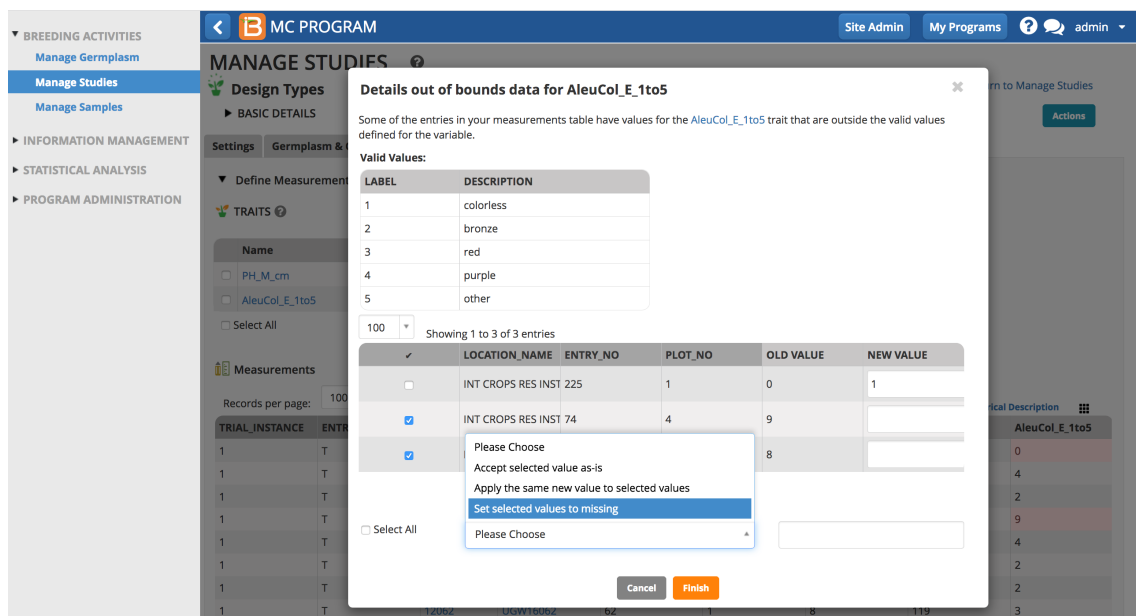
Review out-of-bounds data

Out-of-bounds values for the aleurone color scale (1-5) are highlighted red and are preventing the data from being saved.

- Choose how to proceed with out-of-bounds data.
 - Review Details
 - Accept all data as-is
 - Set all exceptions to missing
- Review details and select Next to navigate out-of-bound values and make individual decisions about them.



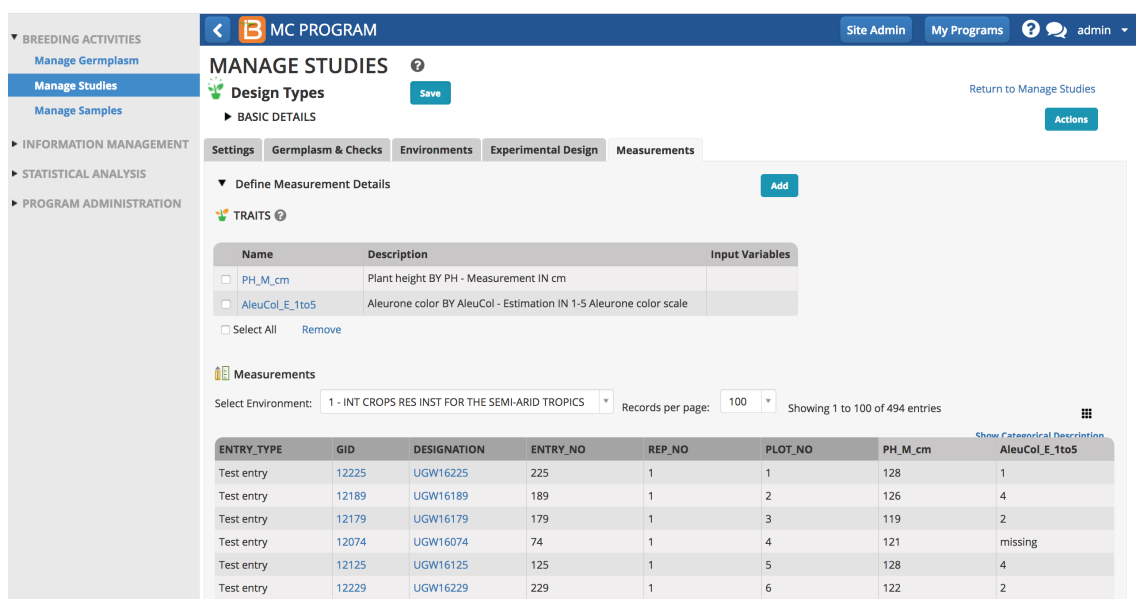
- Review the details of out-of-bounds data. Enter revised values, accept the out of range values, or set the data to missing. Finish



Aleurone color (scale 1-5) has three out-of-bounds values. Plot number one was given a revised value of 1 and the other two plots are set to missing.

- After correction and acceptance, save the study.

Set all exceptions to missing will designate out-of-bounds as "missing".



Accepting data as-is will not change the out-of-bounds values. Accepted out-of-bounds values are highlighted a light blue color.

BREEDING ACTIVITIES

Manage Germplasm

Manage Studies

Manage Samples

INFORMATION MANAGEMENT

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

MC PROGRAM

Site Admin My Programs ? admin

MANAGE STUDIES

Design Types

Save Discard data

Return to Manage Studies

Actions

BASIC DETAILS

Settings Germplasm & Checks Environments Experimental Design Measurements

Define Measurement Details

TRAITS

Name Description Input Variables

☐ PH_M_cm Plant height BY PH - Measurement IN cm

☐ AleuCol_E_1to5 Aleurone color BY AleuCol - Estimation IN 1-5 Aleurone color scale

☐ Select All

Measurements

Records per page: 100 Showing 1 to 100 of 988 entries

Show Categorical Description

TRIAL_INSTANCE	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	REP_NO	PLOT_NO	PH_M_cm	AleuCol_E_1to5
1	T	12225	UGW16225	225	1	1	128	0
1	T	12189	UGW16189	189	1	2	126	4
1	T	12179	UGW16179	179	1	3	119	2
1	T	12074	UGW16074	74	1	4	121	9
1	T	12125	UGW16125	125	1	5	128	4
1	T	12229	UGW16229	229	1	6	122	2
1	T	12108	UGW16108	108	1	7	130	2

Inline Validation

- Perform inline decisions with out of bound data by editing a given cell. Either enter new value or right click to accept or exclude.

BREEDING ACTIVITIES

Manage Germplasm

Manage Samples

Manage Studies

INFORMATION MANAGEMENT

Import Germplasm

Manage Genotyping Data

Browse Studies

Head to Head Query

Manage Ontologies

Import Datasets

Trait Donor Query

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

MC PROGRAM

Site Admin My Programs ? admin

AleuCol_E_1to5

Aleurone color BY AleuCol - Estimation IN 1-5 Aleurone color scale

Select All

Measurements

Records per page: 100 Showing 1 to 100 of 988 entries

Show Categorical Description

TRIAL_INSTANCE	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	REP_NO	PLOT_NO	PH_M_cm	AleuCol_E_1to5
1	T	12225	UGW16225	225	1	1	128	1
1	T	12189	UGW16189	189	1	2	126	4
1	T	12179	UGW16179	179	1	3	119	2
1	T	12074	UGW16074	74	1	4	121	
1	T	12125	UGW16125	125	1	5	128	
1	T	12229	UGW16229	229	1	6	122	4
1	T	12108	UGW16108	108	1	7	130	2
1	T	12062	UGW16062	62	1	8	119	2
1	T	12157	UGW16157	157	1	9	122	2
1	T	12127	UGW16127	127	1	10	120	2
1	T	12173	UGW16173	173	1	11	126	2

Accept Value

Mark Missing

Derived Variables

Derived variable names are highlighted green within the measurements tab. The input variables are visible in the trait summary. (See more on adding [Formulas](#) to traits in the Ontology).

Add Derived & Input Variables

You must add the inputs for derived variable calculations to the dataset. Saving a study when an input variable is missing results in a notification.

The screenshot shows the 'MANAGE STUDIES' page for 'VIGNA_VIRTUAL'. A warning message box is displayed: 'The variable(s) DFDWTKGH are not included in this study. You will need data for these variables to calculate values for this variable.' Below the message, there is an 'OK' button. The background shows the 'Calculated Traits' section with a table of traits and their input variables.

Name	Description	Input Variables
<input type="checkbox"/> FFODKGHA	FRESH FODDER WEIGHT - Not specified (Kg/ha)	
<input type="checkbox"/> Fod_Moi_pct	(Percent moisture of fodder calculated) = ((dry weight fodder)/(fresh weigh fodder)) *100	DFDWTKGH , FFODKGHA

Warning message that one of the input variables needed to calculate Fod_Moi_pct is missing from this study

Execute Calculations

- Select execute calculated variable.

The screenshot shows the 'MANAGE STUDIES' page for 'VIGNA_VIVA'. The 'Actions' menu is open, showing various options including 'Execute calculated variable'. The background shows the 'Define Observation Details' section with a table of traits and their input variables.

Name	Description	Input Variables
<input type="checkbox"/> Plt_Date	planting date	
<input type="checkbox"/> FlwT_Date	date of first flower	
<input type="checkbox"/> FlwT_Day	Flowering time -BY- Days to first flower - Method -IN- days	FlwT_Date , Plt_Date
<input type="checkbox"/> YLDPLOT	Grain yield per plot -BY- Grain yieldper plot - Method -IN- g	

FlwT_day is a trait derived from a calculation of inputs from two other traits, Plt_Date and FlwrT_Date.

- Select the derived variable and study instance to calculate. Calculations are done by individual trait and instance to avoid performance problems.

The screenshot shows the 'MANAGE STUDIES' page for 'VIGNA_VIVA'. A dialog box titled 'Execute Calculations' is open, prompting the user to choose the calculation to execute. The 'Variable' dropdown is set to 'FlwT_Day' and the 'Environment' dropdown is set to '1 - Int Institute of Tropical Agriculture - (IITA)'. There are 'Cancel' and 'Calculate' buttons.

- Save the calculations. Keep in mind that derived variables are subject to the same out-of-bounds validation (see above) as other variables. Out-of-bounds values will need to be accepted, rejected, or corrected to save.

BREEDING ACTIVITIES

Manage Germplasm

Manage Studies

Manage Samples

INFORMATION MANAGEMENT

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

VIGNA VIVA

Site AdminMy ProgramsShawn

SettingsGermplasm & ChecksTreatment FactorsEnvironmentsExperimental DesignObservationsPlants: HT1

Define Observation Details

TRAITS

Name	Description	Input Variables
<input type="checkbox"/> Plt_Date	planting date	
<input type="checkbox"/> FlwT_Date	date of first flower	
<input type="checkbox"/> FlwT_Day	Flowering time -BY- Days to first flower - Method -IN- days	FlwT_Date + Plt_Date
<input type="checkbox"/> YLDPLOT	Grain yield per plot -BY- Grain yieldper plot - Method -IN- g	

☐ Select AllRemove

Observations

Select Environment: 1 - Int Institute of Tropical AgricultureRecords per page: 100Showing 1 to 35 of 35 entriesShow Categorical Description

ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	PLOT_NO	BLOCK_NO	Plt_Date	FlwT_Date	FlwT_Day	YLDPLOT
Test entry	1000085	BMS-14	16	1	1	20181116	20190117	62	996
Check entry	1000098	CK-2	2	2	1	20181122	20190119	58	399
Test entry	1000075	BMS-4	6	3	1	20181120	20190127	68	938
Test entry	1000096	BMS-25	27	4	1	20181114	20190121	68	1816
Check entry	1000097	CK-1	1	5	1	20181129	20190111	43	1227
Test entry	1000091	BMS-20	22	6	1	20181110	20190114	65	286

- Repeat for all instances of the study.

BREEDING ACTIVITIES

Manage Germplasm

Manage Studies

Manage Samples

INFORMATION MANAGEMENT

STATISTICAL ANALYSIS

PROGRAM ADMINISTRATION

VIGNA VIVA

Site AdminMy ProgramsShawn

SettingsGermplasm & ChecksTreatment FactorsEnvironmentsExperimental DesignObservationsPlants: HT1

Define Observation Details

TRAITS

Name	Description	Input Variables
<input type="checkbox"/> Plt_Date	planting date	
<input type="checkbox"/> FlwT_Date	date of first flower	
<input type="checkbox"/> FlwT_Day	Flowering time -BY- Days to first flower - Method -IN- days	FlwT_Date + Plt_Date
<input type="checkbox"/> YLDPLOT	Grain yield per plot -BY- Grain yieldper plot - Method -IN- g	

☐ Select AllRemove

Observations

Select Environment: 2 - INT CROPS RES INST FOR THE SEMI-ARID TR...Records per page: 100Showing 1 to 35 of 35 entriesShow Categorical Description

ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	PLOT_NO	BLOCK_NO	Plt_Date	FlwT_Date	FlwT_Day	YLDPLOT
Test entry	1000092	BMS-21	23	1	1	20181116	20190111		1516
Check entry	1000097	CK-1	1	2	1	20181110	20190121		405
Test entry	1000075	BMS-4	6	3	1	20181120	20190127		938

Execute Calculations

Choose the calculation you would like to execute.

VariableFlwT_Day

Environment2 - INT CROPS RES INST FOR THE SEMI-ARID TR...

CancelCalculate

Related Topics

- [Study Design](#)
- [Observations & Sub-Observations](#)
- [Data Collection](#)
- [Crossing](#)
- [Advancement](#)
- [Manage Ontology](#)