

# International Nursery, Interaction, Data and Use

## Big Data in Agriculture Course

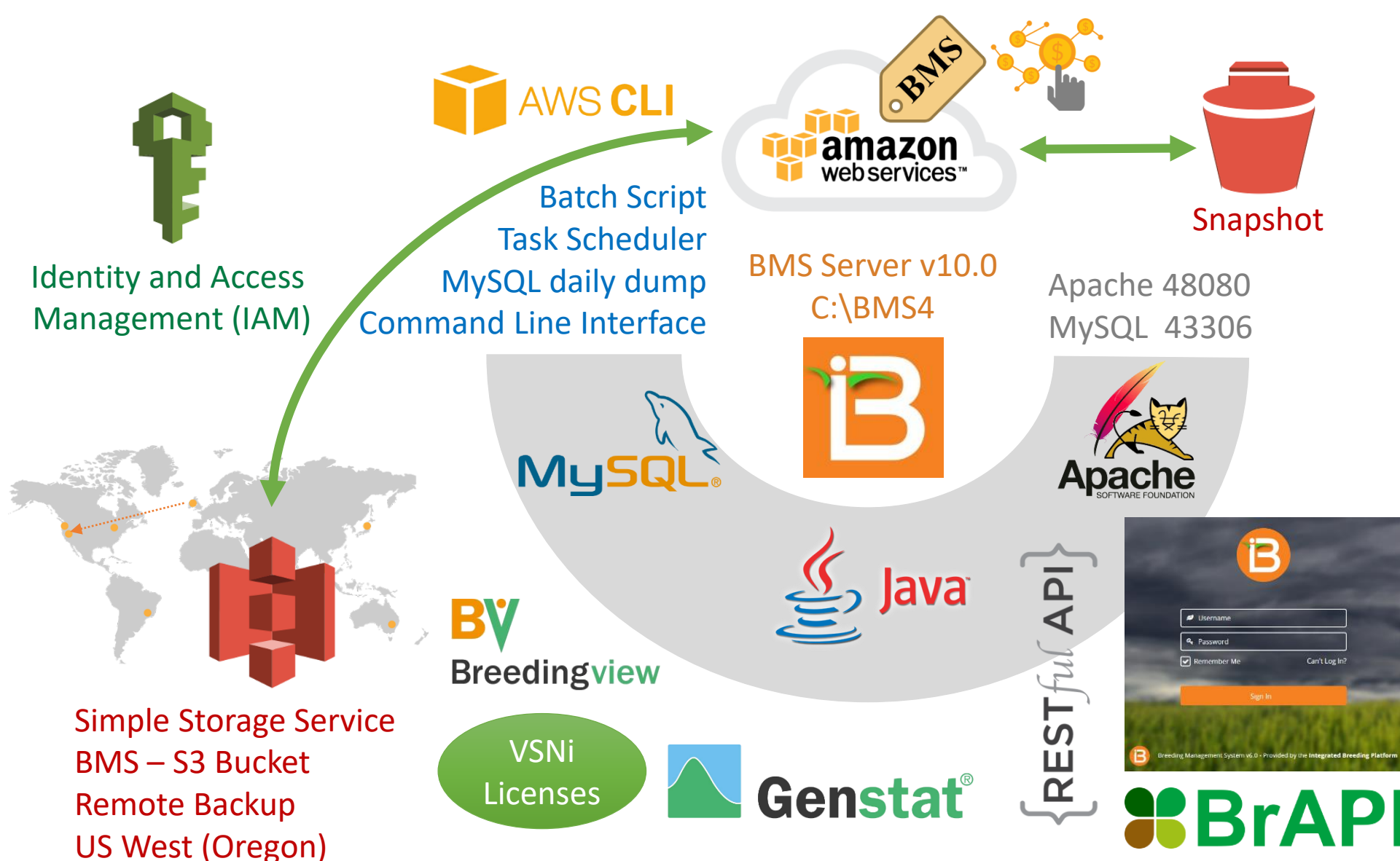


**International Nurseries  
Data Management System**

*Citation:* Al-Shamaa, K. and Niane, A. (2018). International Nursery, Interaction, Data and Use. Big Data in Agriculture course, 13 Dec 2018, ICARDA, Rabat, Morocco. Geoinformatics Unit, ICARDA. 21 slides.

[icarda.org](http://icarda.org)

International Center for Agricultural Research in the Dry Areas



# ICARDA BMS

Log In to the BMS

Not secure | bms.icarda.org:48080/ibpworkbench/controller/auth/login

 **ICARDA**  
Science for resilient livelihoods in dry areas

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Welcome to **ICARDA Breeding Management System (BMS)**

 Breeding Management System v10.0 • Provided by the **Integrated Breeding Platform**

# Germplasm Template - Description

CONDITION	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	COMMENTS
LIST OWNER	Name of the Principal Investigator	PERSON	DBC	ASSIGNED	C		
ID OF LIST OWNER	ID of the Principal Investigator	PERSON	DBID	ASSIGNED	N		
FACTOR	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE		COMMENTS
ENTRY	The germplasm entry number	GERMPLASM ENTRY	NUMBER	ENUMERATED	N		Sequence number - mandatory
DESIGNATION	The name of the germplasm	GERMPLASM ID	DBC	ASSIGNED	C		Germplasm name - mandatory, unless a GID is provided
GID	The GID of the germplasm	GERMPLASM ID	DBID	ASSIGNED	N		GID value if known (or leave blank)
CROSS	The pedigree string of the germplasm	CROSS NAME	NAME	ASSIGNED	C		Cross string showing parentage - optional
SOURCE	The seed source of the germplasm	SEED SOURCE	NAME	Seed Source	C		Text giving seed source - optional
ENTRY CODE	Germplasm entry code	GERMPLASM ENTRY	CODE	ASSIGNED	C		Text giving a local entry code - optional
DRVNM	Derivative Name	GERMPLASM ID	NAME	ASSIGNED	C		See valid name types on Codes sheet for more options
INVENTORY	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE		COMMENTS
SEED_AMOUNT_g	Amount of seed imported	INVENTORY AMOUNT	g	Weighed	N		Weight of seed lot in grams - optional; see Codes sheet
STOCKID	ID of an inventory deposit	Germplasm stock ID	DBC	ASSIGNED	C		Existing StockID value if known (or leave blank)
VARIATE	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE		COMMENTS
NOTE	Additional details about germplasm	ATTRIBUTE	Text	Observed	C		Optional
FAO_Status	FAO Status [D U] (Designation, Undesignation)	ATTRIBUTE	Text	Observed	C		Optional

# Germplasm Template - Observation

ENTRY	DESIGNATION	GID	CROSS	SOURCE	ENTRY CODE	DRVNM	SEED_AMOUNT_g	STOCKID	NOTE	FAO_Status
1	FLIP10-16C		X04TH-50/X03TH-50XFLIP99-34							U
2	FLIP10-17C		X04TH-53/X03TH-53XFLIP97-116							U
3	FLIP10-20C		X04TH-62/X03TH-130XFLIP97-116							U
4	FLIP10-31C		X04TH-76/X03TH-144XFLIP97-116							U
5	FLIP10-46C		X04TH-141/FLIP99-46XFLIP97-91							U
6	FLIP10-113C		X04TH-74/X03TH-142XFLIP97-116							U
7	FLIP10-122C		X04TH-81/X03TH-149XS01079							U
8	FLIP10-125C		X04TH-85/X03TH-153XS01114							U
9	FLIP10-138C		X04TH-103/X03TH-171XS01132							U
10	FLIP10-139C		X04TH-105/X03TH-173XFLIP96-154							U
11	FLIP10-165C		X04TH-115/X03TH-183XFLIP99-34							U
12	FLIP10-188C		X04TH-131/FLIP95-68XFLIP97-83							U
13	FLIP10-190C		X04TH-133/FLIP97-91XFLIP98-15							U
14	FLIP10-199C		X04TH-140/FLIP98-206XFLIP97-90							U
15	FLIP10-200C		X04TH-140/FLIP98-206XFLIP97-90							U
16	FLIP10-218C		X04TH-147/FLIP00-17XFLIP98-230							U
17	FLIP10-222C		X04TH-149/S00547XFLIP98-233							U
18	FLIP10-227C		X04TH-150/S01013XFLIP95-51							U
19	FLIP10-252C		X04TH-154/S01175XFLIP97-165							U
20	FLIP10-255C		X04TH-156/S01205XFLIP97-229							U
21	FLIP10-258C		X04TH-157/S01227XFLIP98-137							U
22	FLIP10-265C		X04TH-164/FLIP 87-59CXFLIP99-34							U
23	FLIP10-266C		X04TH-164/FLIP 87-59CXFLIP99-34							U
24	FLIP10-277C		X04TH-176/FLIP95-68XFLIP97-205							U
25	FLIP10-279C		X04TH-177/FLIP97-90XFLIP97-229							U
26	FLIP10-295C		X04TH-179/FLIP97-165XFLIP97-205							U
27	FLIP10-298C		X04TH-180/FLIP97-205XFLIP97-229							U
28	FLIP10-307C		X04TH-190/ICC13729XFLIP97-116							U
29	FLIP10-308C		X04TH-190/ICC13729XFLIP97-116							U
30	FLIP10-310C		X04TH-190/ICC13729XFLIP97-116							U
31	FLIP10-311C		X04TH-190/ICC13729XFLIP97-116							U
32	ILC482		ILC482							D
33	FLIP 82-150C		X79TH101/ILC 523 X ILC 183							D
34	FLIP88-85C		X85 TH143/ILC 629 x FLIP 82-144C							D
35	FLIP93-93C		X89TH258/ (FLIP 85-122CXFLIP 82-150C)/FLIP 86-77C							D

# BMS - Import Germplasm

**TRAINING BREEDING PROGRAM**

## IMPORT GERmplasm

### Specify Germplasm Details

#### ADD GERmplasm DETAILS

You can specify following details to apply to the imported germplasm. These details are optional.

**Germplasm breeding method:** Unknown derivative method [?](#)  
 Show only favorite methods [Manage Methods](#)

**Germplasm location:** INT CENTER FOR AGRICULTURAL RES IN THE DR [?](#)  
 All locations  Breeding locations [Manage Locations](#)  
 Show only favorite locations

**Seed Storage Location:** Please Choose [?](#)  
 All locations  Storage locations [Manage Locations](#)  
 Show only favorite locations

**Germplasm date:** 2016-09-01 [?](#)


**Germplasm name type:** LINE NAME

#### REVIEW IMPORT FILE DETAILS


Please review and confirm the details of your import records.  
Total Entries: 36

ENTRY_NO	ENTRY_CODE	DESIGNATION	CROSS	GID	STOCKID
1		FLIP10-16C	X04TH-50/X03TH-50XFLIP99-34		
2		FLIP10-17C	X04TH-53/X03TH-53XFLIP97-116		
3		FLIP10-20C	X04TH-62/X03TH-130XFLIP97-116		
4		FLIP10-31C	X04TH-76/X03TH-144XFLIP97-116		



# BMS – Study Settings

 TRAINING BREEDING PROGRAM Site Admin My Programs admin

## MANAGE STUDIES

 CIDTN-2016 Save Return to Manage Studies Actions

▼ BASIC DETAILS *\* indicates a mandatory field*

<b>Study name: *</b>	CIDTN-2016	<b>Save in: *</b>	Khaled-AREC	<a href="#">Change Folder</a>
<b>Description: *</b>	<input type="text" value="Drought Tolerance Nursery"/>	<b>Created by: *</b>	Khaled El-Shamaa	
<b>Study type: *</b>	Trial	<b>Creation date: *</b>	<input type="text" value="2016-07-30"/> 	
<b>Objective:</b>	<input type="text" value="Screening drought tolerance genotypes"/>	<b>Completion date:</b>	<input type="text" value="yyyy-mm-dd"/> 	

Settings **Germplasm & Checks** Environments Experimental Design Measurements

### STUDY SETTINGS Add

<input type="checkbox"/> <b>PlotWid_m:</b>	<input type="text" value="0.5"/>
<input type="checkbox"/> <b>NoRows_integer:</b>	<input type="text" value="2"/>
<input type="checkbox"/> <b>PlotLng_m:</b>	<input type="text" value="2.5"/>
<input type="checkbox"/> Select All <a href="#">Remove</a>	

# BMS – Study Germplasm

**MANAGE STUDIES** ?

**CIDTN-2016** Save Return to Manage Studies

▶ BASIC DETAILS Actions

Settings | **Germplasm & Checks** | Environments | Experimental Design | Measurements

▼ Define Germplasm Details

🔗 GERMPLASM DESCRIPTORS ?

Name	Description
ENTRY_TYPE	Entry type (test/check)- assigned (type)
GID	Germplasm identifier - assigned (DBID)
DESIGNATION	Germplasm identifier - assigned (DBCX)
ENTRY_NO	Germplasm entry - enumerated (number)
PLOT_ID	Field plot id - assigned (text)

This Study has saved observations, germplasm list cannot be modified.

🔍 Study List Actions

Total Entries: 41 [View Header](#)

ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO
Check entry	479	ILC 3279	41
Test entry	478	FLIP10-288C	40
Test entry	477	FLIP10-275C	39



# BMS – Study Environments

TRAINING BREEDING PROGRAM Site Admin My Programs admin

## MANAGE STUDIES

CIDTN-2016 Save Return to Manage Studies

BASIC DETAILS Actions

Settings Germplasm & Checks Environments Experimental Design Measurements

Define Environments

ENVIRONMENT DETAILS Add STUDY CONDITIONS Add

Name	Description
LOCATION_NAME	Location - selected (DBID)

Specify the number of environments for this study: 5

Specify Environment Details

10 Showing 1 to 5 of 5 entries Manage Locations

Environment	LOCATION_NAME
1	FLRP - (FLRP) <input type="radio"/> Breeding locations <input checked="" type="radio"/> All locations types <input type="checkbox"/> Show only favorite locations
2	Punjab Agricultural University - (PAU) <input type="radio"/> Breeding locations <input checked="" type="radio"/> All locations types <input type="checkbox"/> Show only favorite locations

### Edit Location

\* indicates a mandatory field.

Location Name \* Punjab Agricultural University

Location Abbreviation \* PAU

Location Type \* INTERNATIONAL TEST SITE

Country India

Province Punjab

Geographical Details

Latitude: 30.88 Longitude: 75.8 Altitude: 247.0

Accessible from all crop programs

Cancel Save

# BMS – Study Experimental Design

The screenshot displays the BMS software interface with the following components:

- Navigation Tabs:** Settings, Germplasm & Checks, Environments, Experimental Design (active), Measurements.
- Section Header:** # Experimental Design
- Section Header:** CHOOSE A DESIGN TYPE
- Text:** Select the design type you would like to use for this study:
- Text:** Or import an experimental design.
- Section Header:** SPECIFY PLOT NUMBERING
- Text:** Specify the starting plot number:
- Dropdown Menu:** Please Choose (selected), Randomized Complete Block Design, Resolvable Incomplete Block Design, Row-and-Column, Augmented Randomized Block design.
- Overlaid Window:**
  - Navigation Tabs:** Settings, Germplasm & Checks, Environments, Experimental Design (active), Measurements.
  - Section Header:** # Experimental Design
  - Section Header:** DETAILS OF EXPERIMENTAL DESIGN
  - Text:** Imported design file name: CIDTN-5Env.xlsx
  - Text:** Design Type: Custom Import Design

# BMS – Study Measurements

[←](#) **B** TRAINING BREEDING PROGRAM Site Admin My Programs ? admin

**MANAGE STUDIES** Return to Manage Studies

🌱 **CIDTN-2016** Save

▶ BASIC DETAILS Actions

Settings | Germplasm & Checks | Environments | Experimental Design | **Measurements**

▼ Define Measurement Details Add

🌱 TRAITS ?

Name	Description	Input Variables
<input type="checkbox"/> Days_to_flowering	Flowering - count days after sowing (number)	
<input type="checkbox"/> Days_to_maturity	Maturity - count days after sowing (number)	
<input type="checkbox"/> Plant_height	Plant height - soil to tip at maturity (cm)	
<input type="checkbox"/> Grain_yield	Grain yield -dry and weigh (kg/ha)	
<input type="checkbox"/> Grain_size	Grain size - weigh 1000 dry grains (g)	
<input type="checkbox"/> Plant_vigor	Plant vigor - visual assessment at seedling stage (score)	

Select All Remove

📄 Measurements

Select Environment: 2 - Punjab Agricultural University
 Records per page: 100
 Showing 1 to 100 of 122 entries Show Categorical Description ⋮

REP_NO	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	PLOT_NO	BLOCK_NO	Days_to_flowering	Days_to_maturity	Plant_height	Grain_yield	Grain_size	Plant_vigor
1	Check entry	479	ILC 3279	41	58101	1	98	154	34	1315.6	262	1
1	Test entry	472	FLIP10-250C	34	58102	1	96	146	39	1293.8	254	2
1	Test entry	478	FLIP10-288C	40	58103	1	94	144	85	1341.3	251	2

BMS 10.0

# BMS Field Book - Description

	A	B	C	D	E	F	G	H
1	STUDY	CIDTN-2016						
2	TITLE	Drought Tolerance Nursery						
3	OBJECTIVE	Screening drought tolerance genotypes						
4	START DATE	20160730						
5	END DATE							
6	STUDY TYPE	T						
7								
8	CONDITION	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	LABEL
9	EXPT_DESIGN	Experimentaldesign - assigned (type)	Experimental design	Type of EXPT_DESIGN	Assigned	C	EGDGN	TRIAL
10	EXPT_DESIGN_SOURCE	Sourceof the experimental design. For examplethe name of c	Experimental design	Text	Assigned	T	CIDTN-5Env.xlsx	TRIAL
11	LOCATION_ID	Location - selected (DBID)	Location	Location id	Assigned	C	9018	TRIAL
12	LOCATION_NAME	Location - selected (DBCv)	Location	Location name	Assigned	C	FLRP	TRIAL
13	NBLKS	Number of blocks in an experimental design.	ED - number of blocks	Number	Assigned	N		TRIAL
14	NoRows_integer	Number of rows/plot used through a trial or nursery	Rows per plot	Number	Field trial	N		2 STUDY
15	PlotLng_m	Plot length	Plot length	m	PlotLng METHOD	N		2.5 STUDY
16	PlotWid_m	Plot width	Plot width	m	PlotWid METHOD	N		0.5 STUDY
17	TRIAL_INSTANCE	Trial instance - enumerated (number)	Trial instance	Number	Enumerated	N		1 TRIAL
18								
19	FACTOR	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	LABEL
20	REP_NO	Replication - assigned (number)	Replication factor	Number	Enumerated	N		PLOT
21	ENTRY_TYPE	Entry type (test/check)- assigned (type)	Entry type	Type of ENTRY_TYPE	Assigned	C		ENTRY
22	GID	Germplasm identifier - assigned (DBID)	Germplasm id	Germplasm id	Assigned	C		ENTRY
23	DESIGNATION	Germplasm identifier - assigned (DBCv)	Germplasm id	Germplasm name	Assigned	C		ENTRY
24	ENTRY_NO	Germplasm entry - enumerated (number)	Germplasm entry	Number	Enumerated	N		ENTRY
25	PLOT_ID	Field plot id - assigned (text)	Field plot	Text	Assigned	T		ENTRY
26	PLOT_NO	Field plot - enumerated (number)	Field plot	Number	Enumerated	N		PLOT
27	BLOCK_NO	Block - assigned (number)	Blocking factor	Number	Enumerated	N		PLOT
28								
29	CONSTANT	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	SAMPLE LEVEL
30								
31	VARIATE	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	SAMPLE LEVEL
32	Days_to_flowering	Flowering - count days after sowing (number)	Flowering time	Number	Count days after sowing	N	All values allowed	PLOT
33	Days_to_maturity	Maturity - count days after sowing (number)	Maturity time	Number	Count days after sowing	N	All values allowed	PLOT
34	Plant_height	Plant height - soil to tip at maturity (cm)	Plant height	cm	Soil to tip at maturity	N	All values allowed	PLOT
35	Grain_yield	Grain yield -dry and weigh (kg/ha)	Yield	Kg/ha	Dry and weigh	N	All values allowed	PLOT
36	Grain_size	Grain size - weigh 1000 dry grains (g)	Grain size	g	Weigh 1000 dry grains	N	All values allowed	PLOT
37	Plant_vigor	Plant vigor - visual assessment at seedling stage (score)	Plant vigor	Score of Plant_vigor	Visual assessment	C	1/2/3/4/5	PLOT
38								
39								
40								
41								
42								
43								
44								
45								
46								

# BMS Field Book - Observation

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	REP_NO	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	PLOT_ID	PLOT_NO	BLOCK_NO	Days_to_flowering	Days_to_maturity	Plant_height	Grain_yield	Grain_size	Plant_vigor
2	1	C	479	ILC 3279	41	C0M2PswwHODrS	58101	1	78	123	84.7	2175	170	1
3	1	T	472	FLIP10-250C	34	C0M2PylXZTgji	58102	1	73	114	66.7	1600	280	2
4	1	T	478	FLIP10-288C	40	C0M2PvqbgZKN7	58103	1	86	114	56.7	1787.5	320	2
5	1	C	479	ILC 3279	41	C0M2PADUSzY0j	58104	1	82	123	75.3	1262.5	300	1
6	1	T	448	FLIP10-54C	10	C0M2PIWPdje6i	58105	1	86	113	56.7	1612.5	320	4
7	1	T	474	FLIP10-268C	36	C0M2PB8XvWWCf	58106	2	84	106	54	1912.5	280	2
8	1	C	479	ILC 3279	41	C0M2P28O9R0BS	58107	2	74	123	82	312.5	420	4
9	1	T	452	FLIP10-91C	14	C0M2Pu1aZxw7w	58108	2	76	117	69.7	637.5	280	4
10	1	T	450	FLIP10-66C	12	C0M2P2nNBBLk3	58109	2	74	115	53	1525	280	4
11	1	C	479	ILC 3279	41	C0M2PgJrBP5o4	58110	2	80	123	81.3	412.5	370	4
12	1	T	466	FLIP10-220C	28	C0M2PNaOHelOA	58111	3	74	113	58.3	1312.5	300	2
13	1	T	468	FLIP10-229C	30	C0M2P9CEryCL9	58112	3	74	115	57	1137.5	360	3
14	1	C	479	ILC 3279	41	C0M2PCX9in1it	58113	3	74	125	83.3	437.5	300	2
15	1	T	444	FLIP10-24C	6	C0M2POaksVyPI	58114	3	70	104	72	1875	300	2
16	1	T	457	FLIP10-126C	19	C0M2PebOmtcvl	58115	3	77	120	81.7	1925	360	3
17	1	C	479	ILC 3279	41	C0M2PK3PmR9HF	58116	4	87	122	85.7	725	300	2
18	1	T	454	FLIP10-102C	16	C0M2Pu7WfPDO2	58117	4	86	110	56.7	1100	240	3
19	1	T	451	FLIP10-72C	13	C0M2PozzerQh5O	58118	4	76	110	66.3	800	310	3
20	1	C	479	ILC 3279	41	C0M2PZfnh3kHv	58119	4	82	124	75.3	637.5	340	1
21	1	T	465	FLIP10-217C	27	C0M2PMt86rEk	58120	4	80	113	72.7	1125	300	1
22	1	T	467	FLIP10-221C	29	C0M2PoiqTMsVZ	58121	5	74	112	69.7	887.5	320	2
23	1	C	479	ILC 3279	41	C0M2PX2m5aul	58122	5	79	123	76	800	300	1
24	1	T	461	FLIP10-166C	23	C0M2PxnPziAzC	58123	5	76	110	67.3	200	320	1
25	1	T	439	FLIP10-3C	1	C0M2P0TyHbCRd	58124	5	74	115	61.7	787.5	280	2
26	1	C	479	ILC 3279	41	C0M2Pr0BgWkEg	58125	5	82	123	73.7	537.5	300	2
27	1	T	459	FLIP10-144C	21	C0M2PsE5JweEk	58126	6	78	120	65	975	340	2
28	1	T	443	FLIP10-23C	5	C0M2PR5xGirbf	58127	6	79	119	67.7	675	300	2
29	1	C	479	ILC 3279	41	C0M2PH2voDkvW	58128	6	82	122	92	725	300	1
30	1	T	446	FLIP10-43C	8	C0M2Pqt70URt4	58129	6	80	122	55	900	260	3
31	1	T	469	FLIP10-231C	31	C0M2P5hwlS3IO	58130	6	76	115	54.7	625	260	3
32	1	C	479	ILC 3279	41	C0M2PDJLNLWte	58131	6	85	116	91.7	1275	300	1
33	1	T	463	FLIP10-186C	25	C0M2PPL9XN7qj	58132	7	80	116	71.7	1712.5	360	2
34	1	T	442	FLIP10-19C	4	C0M2PY3Hoegu1	58133	7	80	116	72.3	1375	320	1
35	1	C	479	ILC 3279	41	C0M2PMBtjYIE6	58134	7	80	122	86.7	800	300	1
36	1	T	449	FLIP10-55C	11	C0M2PzT3OyV7P	58135	7	74	110	72	1800	320	2
37	1	T	440	FLIP10-6C	2	C0M2PjnTImqVk	58136	7	74	122	85	2362.5	300	2
38	1	C	479	ILC 3279	41	C0M2Pb8dzV5dK	58137	8	80	122	92	875	320	1
39	1	T	455	FLIP10-118C	17	C0M2PVxALAjSD	58138	8	78	110	76	2425	320	2
40	1	T	460	FLIP10-161C	22	C0M2PDAVfO35u	58139	8	74	122	66.3	1325	360	2
41	1	C	479	ILC 3279	41	C0M2PwPIB1gGm	58140	8	80	115	83.7	650	300	1
42	1	T	456	FLIP10-120C	18	C0M2PF58txscA	58141	8	80	106	63.3	1125	300	2
43	1	T	473	FLIP10-267C	35	C0M2PBjQ8QuC	58142	9	78	106	51	1550	280	2
44	1	C	479	ILC 3279	41	C0M2Pxi6tfThK	58143	9	80	122	91.7	687.5	300	1
45	1	T	477	FLIP10-275C	39	C0M2P2ct1Y4mT	58144	9	74	116	52.7	875	320	2

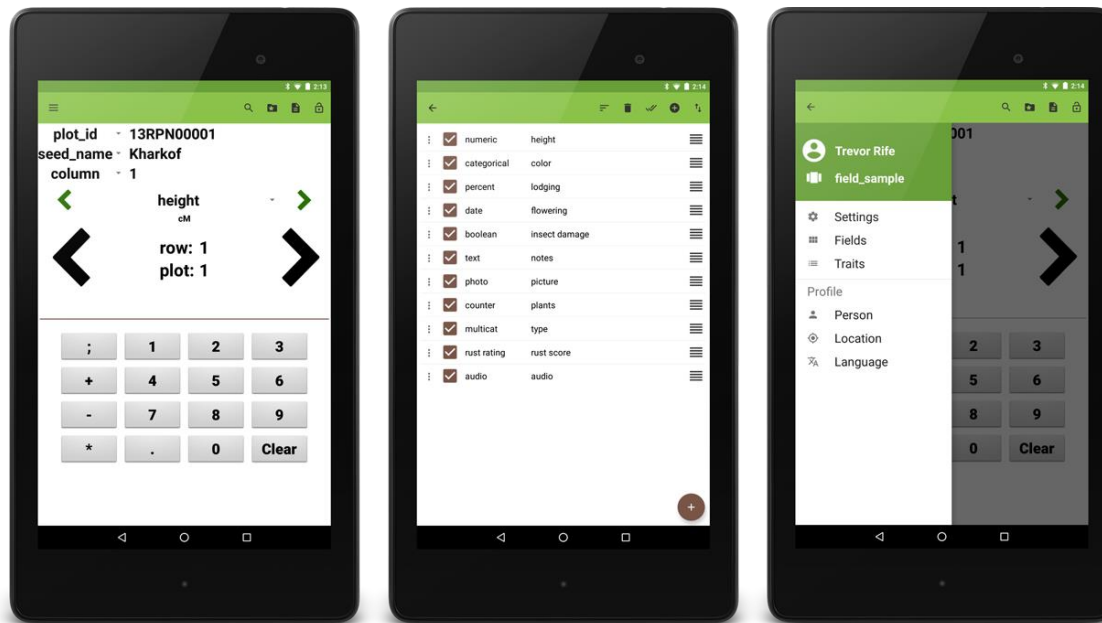


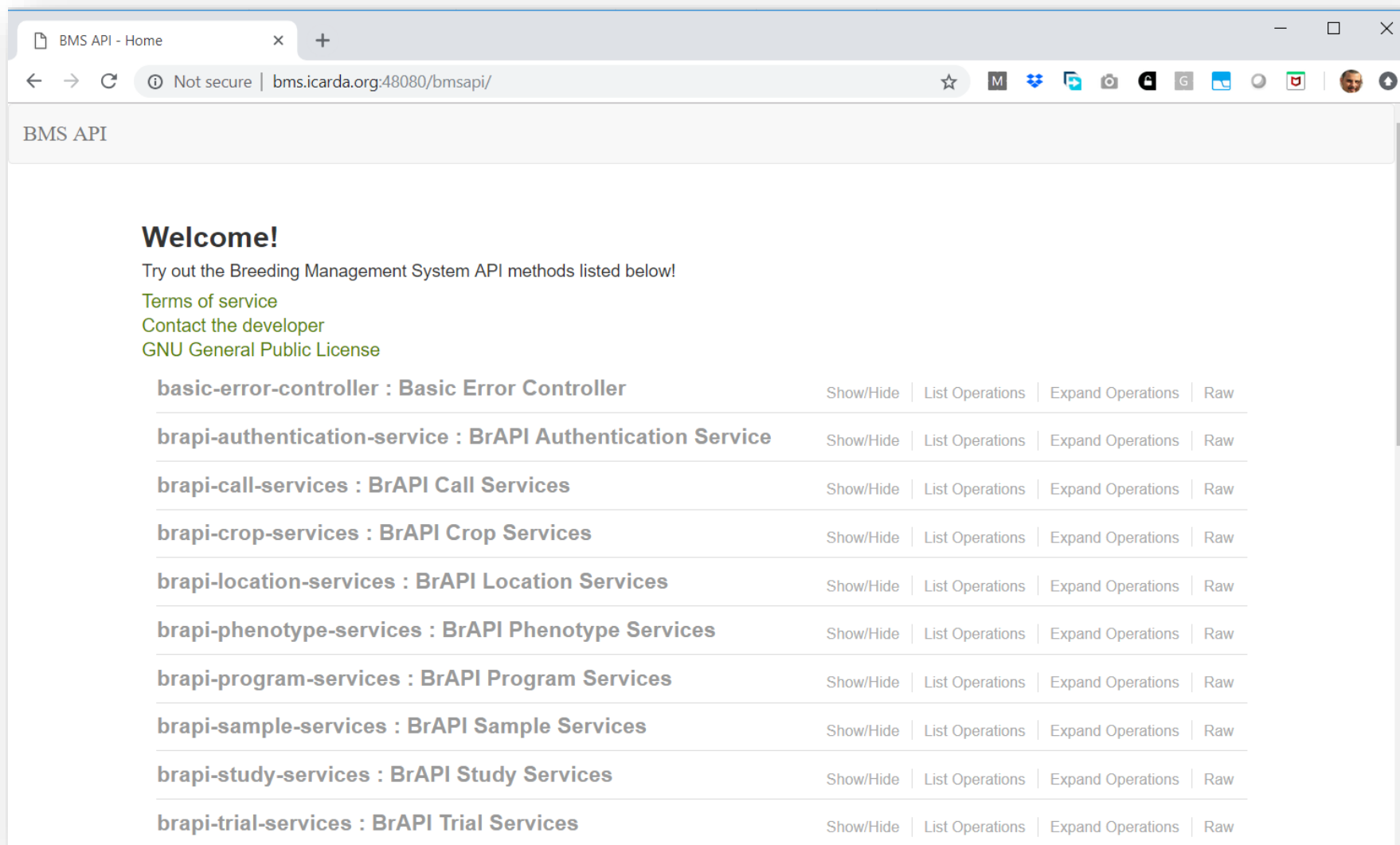
# Android Field Book

Field Experiments

Integrate with BMS

Arabic Translation by ICARDA





The screenshot shows a web browser window with the address bar displaying "bms.icarda.org:48080/bmsapi/". The page title is "BMS API". The main content area features a "Welcome!" message followed by a list of API methods. Each method is presented in a row with a title and four action links: "Show/Hide", "List Operations", "Expand Operations", and "Raw".

API Method	Show/Hide	List Operations	Expand Operations	Raw
<b>basic-error-controller : Basic Error Controller</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-authentication-service : BrAPI Authentication Service</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-call-services : BrAPI Call Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-crop-services : BrAPI Crop Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-location-services : BrAPI Location Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-phenotype-services : BrAPI Phenotype Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-program-services : BrAPI Program Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-sample-services : BrAPI Sample Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-study-services : BrAPI Study Services</b>	Show/Hide	List Operations	Expand Operations	Raw
<b>brapi-trial-services : BrAPI Trial Services</b>	Show/Hide	List Operations	Expand Operations	Raw

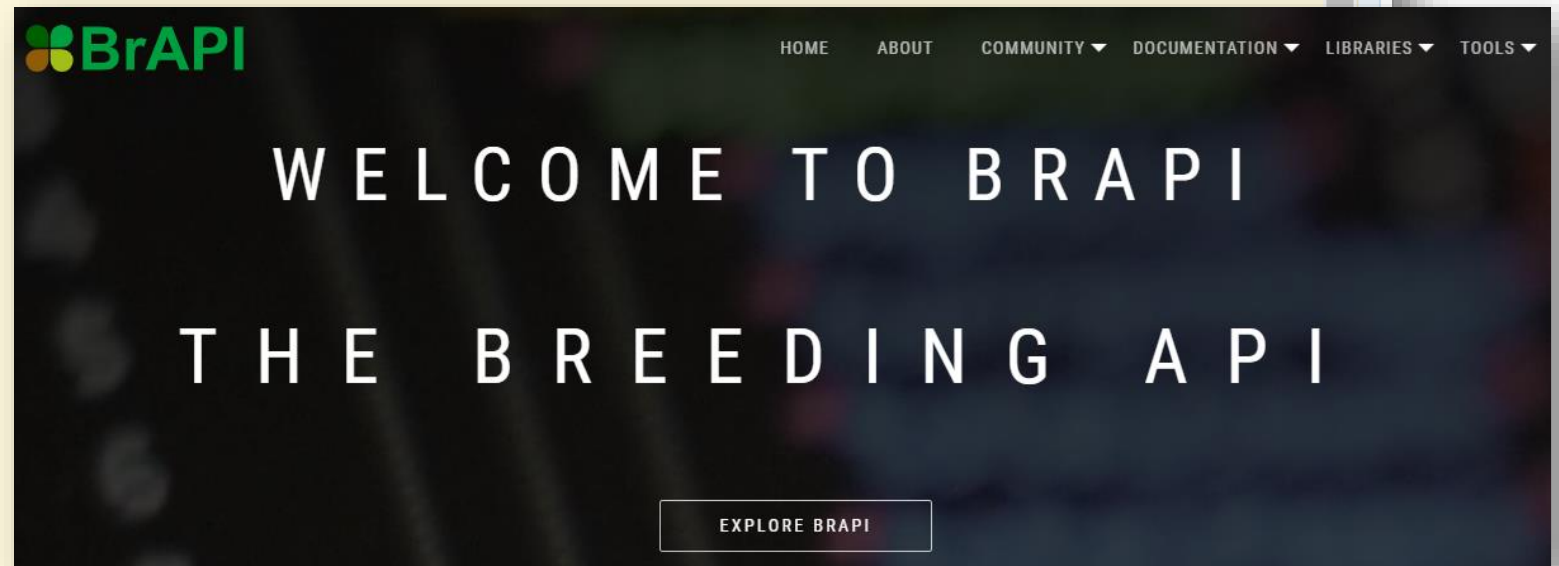
# BMS API Call

## Request URL

http://bms.icarda.org:48080/bmsapi/brapi/v1/crops

## Response Body

```
{
  "metadata": {
    "pagination": {
      "currentPage": 0,
      "pageSize": 0,
      "totalCount": 0,
      "totalPages": 0
    },
    "status": {},
    "datafiles": []
  },
  "result": {
    "data": [
      "barley",
      "chickpea",
      "faba",
      "grasspea",
      "lentil",
      "Tutorial1",
      "wheat"
    ]
  }
}
```





# BMS – Single Site Analysis

**TRAINING BREEDING PROGRAM** Site Admin My Programs admin

## SINGLE-SITE ANALYSIS

Select Data for Analysis

Browse for a study to work with or Upload Breeding View output files to BMS.

### FACTORS

NAME	DESCRIPTION
TRIAL_INSTANCE	Trial instance - enumerated (number)
REP_NO	Replication - assigned (number)
ENTRY_TYPE	Entry type (test/check)- assigned (type)
GID	Germplasm identifier - assigned (DBID)
DESIGNATION	Germplasm identifier - assigned (DBCX)
ENTRY_NO	Germplasm entry - enumerated (number)
PLOT_ID	Field plot id - assigned (text)
PLOT_NO	Field plot - enumerated (number)
BLOCK_NO	Block - assigned (number)

### TRAITS

<input checked="" type="checkbox"/>	NAME	DESCRIPTION	SCALE
<input checked="" type="checkbox"/>	Days_to_flo	Flowering - count days after sowing (number)	Number
<input checked="" type="checkbox"/>	Days_to_ma	Maturity - count days after sowing (number)	Number
<input checked="" type="checkbox"/>	Plant_heigh	Plant height - soil to tip at maturity (cm)	cm
<input checked="" type="checkbox"/>	Grain_yield	Grain yield -dry and weigh (kg/ha)	Kg/ha
<input checked="" type="checkbox"/>	Grain_size	Grain size - weigh 1000 dry grains (g)	g
<input checked="" type="checkbox"/>	Plant_vigor	Plant vigor - visual assessment at seedling stage	Score of Pla

Select All

Reset Next

# Breeding View – Single Site Analysis

The screenshot displays the Breeding View software interface. The window title is "BV Breeding View". The menu bar includes "File", "View", "Project", "Tools", and "Help". The toolbar contains icons for "New Project", "Open Project", "Add to Project", "Save Project", and "Upload to BMS".

The left sidebar shows a project tree for "SSA analysis of CIDTN-2016-PLOTDATA (run)". The tree structure is as follows:

- Field trial
  - Resolvable incomplete block design
- Environment
  - FLRP - 1
  - Punjab Agricultural University - 2
  - Nepal Agricultural Research Council - 4
- Trait data
  - Days\_to\_flowering
  - Days\_to\_maturity
  - Grain\_size
  - Grain\_yield
  - Plant\_height
  - Plant\_vigor

The main area shows the "Analysis Pipeline" and "Output" tabs. The "Analysis Pipeline" tab displays a flowchart:

```
graph LR; A[Quality control phenotypes] --> B[Field trial analysis]; B --> C[Export field trial results]; B --> D[Export means for further analysis]; C --> E[Generate report];
```

The "Output" tab displays the Breeding View logo and the text "Breedingview A VSNI product".

The status bar at the bottom left shows "Project" and "Ready".

# BMS – Multi Sites Analysis

**BREEDING ACTIVITIES**

- Manage Germplasm
- Manage Studies
- Manage Samples

**INFORMATION MANAGEMENT**

**STATISTICAL ANALYSIS**

- Single-Site Analysis
- Multi-Site Analysis**

**PROGRAM ADMINISTRATION**

**TRAINING BREEDING PROGRAM** Site Admin My Programs ? admin

## MULTI-SITE ANALYSIS

Select Data for Analysis

Browse for a study to work with.

CIDTN-2016 ×

### DEFINE ENVIRONMENTS AND GROUPS

Which factor defines the environment? TRIAL\_INSTANCE

Which factor defines the genotype? GID

Specify a grouping factor if you wish to split your environments into groups. If you do not select a grouping factor, all environments will be analyzed together in a single group.

Specify a factor to define environment groups: LOCATION\_NAME

### REVIEW THE FACTORS AND VARIATES IN THE SELECTED DATASET

#### FACTORS

The factors of the dataset you have selected are shown below for your review.

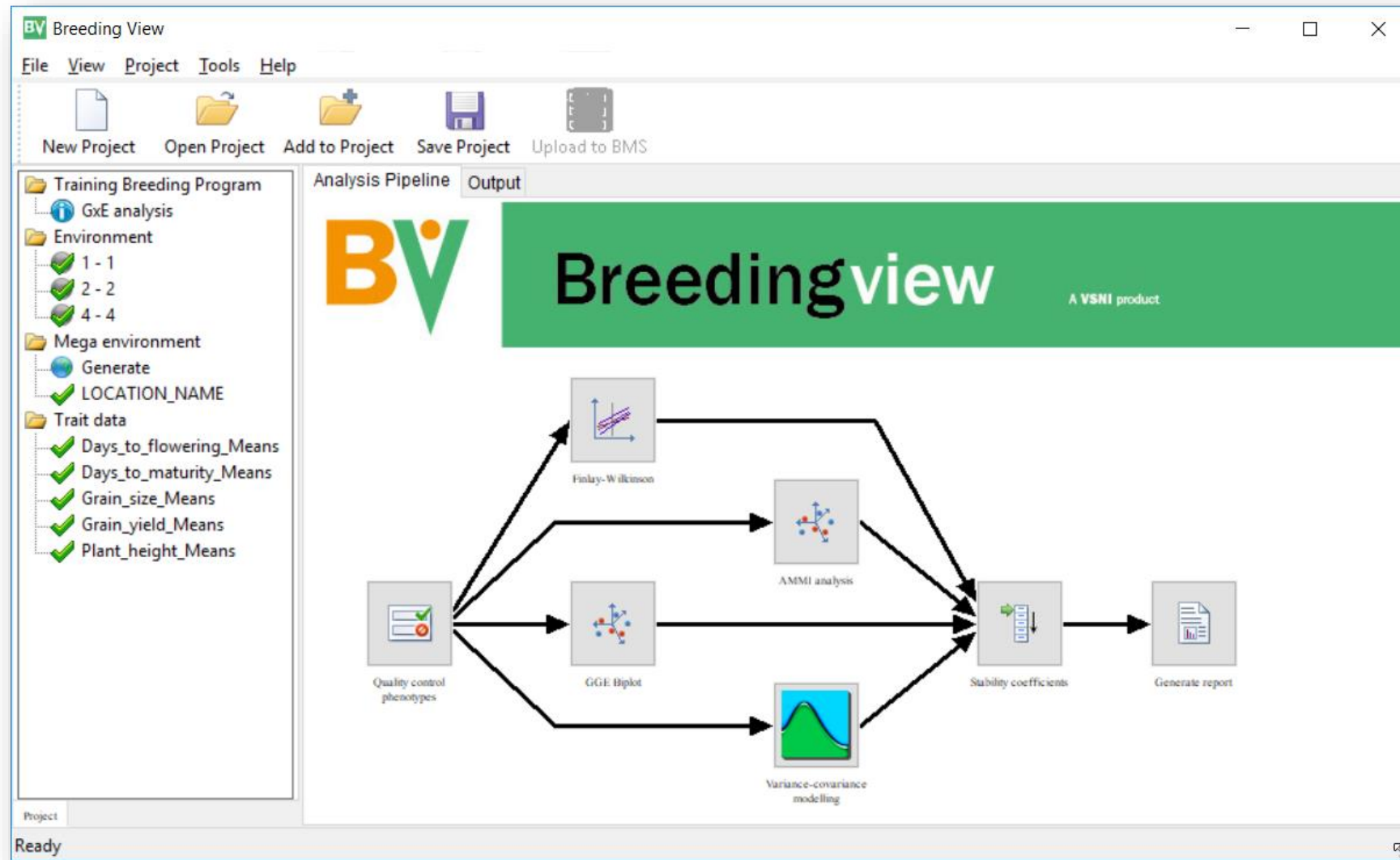
NAME	DESCRIPTION
GID	Germplasm identifier - assigned (DBID)
DESIGNATION	Germplasm identifier - assigned (DBCV)
ENTRY_NO	Germplasm entry - enumerated (number)

#### TRAITS

The traits in the dataset you have selected are shown below, together with the number of environments in which they were tested.

✓ NAME	DESCRIPTION	TESTED IN
<input type="checkbox"/> Days_to_flowering	Flowering - count days after sowing (number)	3 of 3
<input type="checkbox"/> Days_to_maturity	Maturity - count days after sowing (number)	3 of 3
<input type="checkbox"/> Grain_size	Grain size - weigh 1000 dry grains (g)	3 of 3
<input type="checkbox"/> Grain_yield	Grain yield -dry and weigh (kg/ha)	3 of 3
<input type="checkbox"/> Plant_height	Plant height - soil to tip at maturity (cm)	3 of 3
<input type="checkbox"/> Plant_vigor	Plant vigor - visual assessment at seedling stage (score)	2 of 3

# Breeding View – Multi Sites Analysis



# Questions?



## **Japanese attitude for work:**

*If one can do it, I can do it. If no one can do it, I must do it.*

## **Middle Eastern attitude for work:**

*Wallahi... if one can do it, let him do it.  
If no one can do it, ya-habibi how can I do it?*