

Trial Data Collection

BMS 12.0 Tutorials

Summary

The tutorial describes how to export trial field book for data collection and upload phenotypic example data from four locations based on a CIMMYT maize trial. When this tutorial is complete, the example data in the Breeding Management System is available for statistical analysis.

Export Trial for Data Collection Import Example Measurements

Export Trial for Data Collection

• From Manage Studies tool, browse for the Performance Trial and Open.



· Select Export study book from Data collection options in the Actions menu.

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plasm es les	Performation BASIC DET.	STUDIES	Save									Retur	n to Manage Studies	
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	🝟 TRAITS 🚱										Export study bo	Fiel ok Dat	d map options > a collection options	
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	GY_FW_kg	Plot	Grain yield BY FW 0	6Y - Measurement	IN Kg/plot							Clo	se study	
		i_pct	Grain moisture BY	NIRS Moi - Measur	ement IN %							Des	ete study	-
	PH_M_cm		Plant height BY PH	Measurement IN	cm									
	EH_M_cm		Ear height BY EH - I	Measurement IN C	m									
	GY_DW_gP	lot	Grain yield BY DW	GY - Measurement	IN G/plot									
	Ant_DT_da	у	Anthesis time BY D	ays to anthesis - C	omputation	IN Day								
	Select All	Remove												
	1 Measurem	ents												
	Select Environm	ent: 1 - Agua Fria	* Records per page	100 * 9	howing 1 to	96 of 96 ent	ries					Show Categorie	ral Description	
	ENTRY_TYPE	GID	DESIGNATION	ENTRY_NO	REP_NO	PLOT_NO	BLOCK_NO	GY_FW_kgPlot	GMoi_NIRS_pct	PH_M_cm	EH_M_cm	GY_DW_gPlot	Ant_DT_day	
	Test entry	11	AF12A-210-1/5	4	1	1	1							^
	Test entry	14	AF12A-210-2/10	7	1	2	1							
	Test entry	15	AF12A-210-2/12	8	1	3	1							
	Test entry	23	AF12A-423-2/23	16	1	4	1							_

384 trial entries associated with empty columns of phenotypic data.

 Choose Excel from the list of file formats compatible with different handheld devices. Set data collection order by plot. (Serpentine order options are only available after a field map has been created.) Select Export and choose a location for the file on your computer.

BREEDING ACTIVITIES	MAIZE TUTORIAL	-			Site Admin	My Programs 💡 喿 Gregor 👻
Manage Germplasm	MANAGE STUDIES	0				
Manage Studies	Performance Trial	Save	Export Study Book	ж		Return to Manage Studies
Manage Samples	BASIC DETAILS		Please note that serpentine export options	s are only available if you have already created a field		Actions
► INFORMATION MANAGEMENT	Settings Germplasm & Checks	Environments Expe	plan.	,,,,		
STATISTICAL ANALYSIS			* indicates a mandatory field			
PROGRAM ADMINISTRATION	 Define Measurement Details 		EXPORT FORMAT			
	TRAITS 🚱		Choose an export format:*	Excel		
	Name	Description	DATA COLLECTION ORDER	Please Choose CSV		
	GY_FW_kgPlot	Grain yield BY FW GY	Chaose a data collection orderst	Excel		
	GMoi_NIRS_pct	Grain moisture BY N	choose a data conection order.	KSU Fieldbook CSV		
	PH_M_cm	Plant height BY PH -	Choose Study Environment	KSU Heldbook Excel		
	EH_M_cm	Ear height BY EH - Me				
	GY_DW_gPlot	Grain yield BY DW G	Study Environment #	Has Fieldmap		
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BREEDING ACTIVITIES	MAIZE TUTORIAL				Site Admin	My Programs 🕜 ᆽ Gregor 👻
Manage Germplasm	MANAGE STUDIES	0				
Manage Studies	🚏 Performance Trial	Save	Export Study Book	ж		Return to Manage Studies
Manage Samples	BASIC DETAILS		Please note that serpentine export options	s are only available if you have already created a field		Actions
► INFORMATION MANAGEMENT	Settings Germplasm & Checks	Environments Expe	plan.			
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	TRAITS 🐨		Choose an export format:*	Excer •		
	Name	Description	DATA COLLECTION ORDER			
	GY_FW_kgPlot	Grain yield BY FW GY	Choose a data collection order:*	Plot Order 🔺 😧		
	GMoi_NIRS_pct	Grain moisture BY N		Plot Order		
	PH_M_cm	Plant height BY PH - I	Choose Study Environment	Serpentine - Along Rows		
	EH_M_cm	Ear height BY EH - Me	Study Environment #	Serpentine - Along Colum Has Fieldman		
	GY_DW_gPlot	Grain yield BY DW GY		No		
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	Select All Remove			No		

• The export file is a single zipped, or compressed, folder containing four Excel workbooks corresponding to each trial location. Navigate to the compressed folder and open to view the individual files. Open Performance Trial-1_Aqua Fria.xls.

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☑ 4

Each of the exported files have two work sheets. The observation sheet contains empty cells for data collection for 6 traits. *Important: The observation sheet exported from the BMS contains a unique PLOT_ID specific to your trial in column E.*

Α	В	С	D	E	F	G	н	1	J	K	L	М	N
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Т	14	AF12A-210-2/10	7	90VNPxvx66G9F	1	2	1						
Т	15	AF12A-210-2/12	8	90VNPJU5dCKRT	1	3	1						
Т	23	AF12A-423-2/23	16	90VNP2izqIJDj	1	4	1						
Т	34	AF12A-423-6/20	27	90VNPL9YjhrC2	1	5	2						
Т	27	AF12A-423-4/22	20	90VNPRPcReGQN	1	6	2]	
Т	30	AF12A-423-5/20	23	90VNPUnICOonZ	1	7	2						
Т	12	AF12A-210-14/17	5	90VNPU7VolpAh	1	8	2						
Т	29	AF12A-423-5/16	22	90VNPnH09J7aG	1	9	3						
Т	8	AF12A-209-2/8	1	90VNPW7jRpTlk	1	10	3						
Т	35	AF12A-423-6/21	28	90VNPScDpW0rl	1	11	3						
Т	21	AF12A-423-2/16	14	90VNPMw2aJHGI	1	12	3						
Т	16	AF12A-210-2/6	9	90VNPScrcZkg0	1	13	4						
Т	20	AF12A-423-2/14	13	90VNPVRjG3QqP	1	14	4						
Т	38	Commercial Check 2	31	90VNPHRo3ghWp	1	15	4						
Т	10	AF12A-210-1/4	3	90VNPJLRXuLbz	1	16	4						
Т	17	AF12A-210-2/7	10	90VNPWfaeykSr	1	17	5						
Т	25	AF12A-423-4/20	18	90VNP4L8ggnNX	1	18	5						
Т	13	AF12A-210-15/23	6	90VNP6nCb5fDD	1	19	5						

Import Example Measurements

- Download example data collected by CIMMYT breeders at each of the four trial locations.
 - Example Data-1_Agua Fria.xls
 - Example Data-2_Sabana Del Medio.xls
 - Example Data-3_Jutiapa.xls
 - Example Data-4_Tlaltizapan.xls
- Copy the PLOT_ID column from the observation sheet you exported from the BMS. Paste PLOT_ID into the example data files. Repeat for all 4 locations. Observations are matched to the BMS database by PLOT_ID.
- Save the four data files on your computer. We will be using the four data sets to import into BMS for data analysis.

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5	Т	23	AF12A-423-2/23	16	3BCMPcc	SB7lo3	1	4	1							
6	Т	34	AF12A-423-6/20	27	3BCMPK	V1ngPBo	1	5	2							
7	Т	27	AF12A-423-4/22	20	3BCMP7	5ynVT7	1	6	2							
8	Т	30	AF12A-423-5/20	23	3BCMPJ6	Mxksil	1	7	2							
9	Т	12	AF12A-210-14/1	7 5	3BCMPY	tr9RpYg	1	8	2							
10	T	29	AF12A-423-5/16	22	3BCMPtq	nlva2R	1	9	3							
11	T	8	AF12A-209-2/8	1	3BCMPw	BNmEJnl	1	10	3							
12	+	35	AF12A-423-6/21	28	3BCMPL	pDR5a	1	11	3							
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• Select **Import Measurements** from the Data collection options in the Actions menu in order to import the field measurements into the BMS.

BREEDING ACTIVITIES	< 🖪 MA	IZE TUTORIA	۱L							Site Admin	My Program	ns 😯 夬 G	regor 👻
Manage Germplasm Manage Studies Manage Samples	MANAGE Performation BASIC DET	STUDIES	Save	l.							Return	to Manage Studies	^
INFORMATION MANAGEMENT STATISTICAL ANALYSIS PROGRAM ADMINISTRATION	Settings Gerr Define Mea TRAITS @	nplasm & Checks asurement Detail	Environments	Experimental Desi	ign Measurement	5		Add		Export study boo	Save Desig Cross Field k Data	Study n and planning optio ing options > map options > collection options	ns >
	Name		Description				Input Variabl	les		Export germplase	m list Adva	nce study options >	
	GY_FW_kg	Plot	Grain yield BY	FW GY - Measureme	nt IN Kg/plot						Close	study e study	
	GMoi_NIR	5_pct	Grain moistur	e BY NIRS Moi - Meas	surement IN %							,	-17
	PH_M_cm		Plant height B	YPH - Measurement	IN cm								
	EH_M_cm		Ear height BY	EH - Measurement IN	N Cm								
	GY_DW_gP	Hot	Grain yield BY	DW GY - Measureme	ent IN G/plot								
	Ant_DT_da	y	Anthesis time	BY Days to anthesis	Computation IN Day								
	Select All	Remove ents ent: 1 - Agua Fri	* Records per	page: 100 *	Showing 1 to 96 of	36 entries							
	ENTRY TYPE	GID	DESIGNATION EN	TRY NO REP N	O PLOT NO	BLOCK NO	GY FW kgPlot	GMoi NIRS pct	PH M cm	EH M cm	GY DW gPlot	Ant DT day	
	Test entry	11	AF12A-210-1/5 4	1	1	1							^
	Test entry	14	AF12A-210-2/10 7	1	2	1							
	Test entry	15	AF12A-210-2/12 8	1	3	1							
	Test entry	23	AF12A-423-2/23 16	1	4	1							

 Browse and select the field book with data for location 1 (Agua Fria). Select Import. You mustsave the trial after the data import of each location or subsequent imports will overwrite previous data. Repeat for all 4 locations individually.



• Confirm that the data has been uploaded by reviewing each location from the dropdown menu.

BREEDING ACTIVITIES	< 🖪	SY_MAIZ	E									My Programs	? 👤	Grego
Manage Germplasm	GMc	i_NIRS_pct		Grain moisture BY	Y NIRS Moi - Me	asurement IN	%							
Manage Studies	D PH_	M_cm		Plant height BY PH	H - Measureme	nt IN cm								
Manage Samples	EH_M	M_cm		Ear height BY EH -	Measurement	IN Cm								
► INFORMATION MANAGEMENT	GY_E	DW_gPlot		Grain yield BY DW	/ GY - Measurer	nent IN G/plot								
STATISTICAL ANALYSIS	🗆 Ant_	DT_day		Anthesis time BY I	Days to anthesi	s - Computatio	on IN Day							
PROGRAM ADMINISTRATION	Select	All Remov	/e											
	45													
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	Select Env	ironment: 1	- Agua Fria	* Records pe	r page: 100	Show	ing 1 to 96 of 96 entrie	s			Sh	ow Categorical De	scription 👪	
	REP_NO	ENTRY_NO	PLOT_NO	GID	ENTRY_TYPE	BLOCK_NO	DESIGNATION	GY_FW_kgPlot	GMoi_NIRS_pct	PH_M_cm	EH_M_cm	GY_DW_gPlot	Ant_DT_day	v
	REP_NO 1	ENTRY_NO	PLOT_NO 1	GID 4288	ENTRY_TYPE Test entry	BLOCK_NO	DESIGNATION AF12A-210-1/5	GY_FW_kgPlot	GMoi_NIRS_pct	PH_M_cm 235	EH_M_cm 120	GY_DW_gPlot	Ant_DT_day	y ^
	REP_NO 1 1	ENTRY_NO 4 7	PLOT_NO 1 2	GID 4288 4291	ENTRY_TYPE Test entry Test entry	BLOCK_NO 1 1	DESIGNATION AF12A-210-1/5 AF12A-210-2/10	GY_FW_kgPlot 6.87 6.6	GMoi_NIRS_pct 22.6 22.9	PH_M_cm 235 236	EH_M_cm 120 135	GY_DW_gPlot 6950 6700	Ant_DT_day 57 57	y Î
	REP_NO 1 1 1 1	ENTRY_NO 4 7 8	PLOT_NO 1 2 3	GID 4288 4291 4292	ENTRY_TYPE Test entry Test entry Test entry	BLOCK_NO 1 1 1 1	DESIGNATION AF12A-210-1/5 AF12A-210-2/10 AF12A-210-2/12	GY_FW_kgPlot 6.87 6.6 8.35	GMoi_NIRS_pct 22.6 22.9 22.8	PH_M_cm 235 236 245	EH_M_cm 120 135 115	GY_DW_gPlot 6950 6700 8470	Ant_DT_day 57 57 59	y
	REP_NO 1 1 1 1 1 1	ENTRY_NO 4 7 8 16	PLOT_NO 1 2 3 4	GID 4288 4291 4292 4300	ENTRY_TYPE Test entry Test entry Test entry Test entry	BLOCK_NO 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DESIGNATION AF12A-210-1/5 AF12A-210-2/10 AF12A-210-2/12 AF12A-210-2/12 AF12A-423-2/23	GY_FW_kgPlot 6.87 6.6 8.35 5.14	GMoi_NIRS_pct 22.6 22.9 22.8 27	PH_M_cm 235 236 245 190	EH_M_cm 120 135 115 90	GY_DW_gPlot 6950 6700 8470 5510	Ant_DT_day 57 57 59 62	y
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You will receive an error message if the data is imported without correct Plot IDs in the trial field book.

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