

Trial Data Collection

BMS 12.0 Tutorials

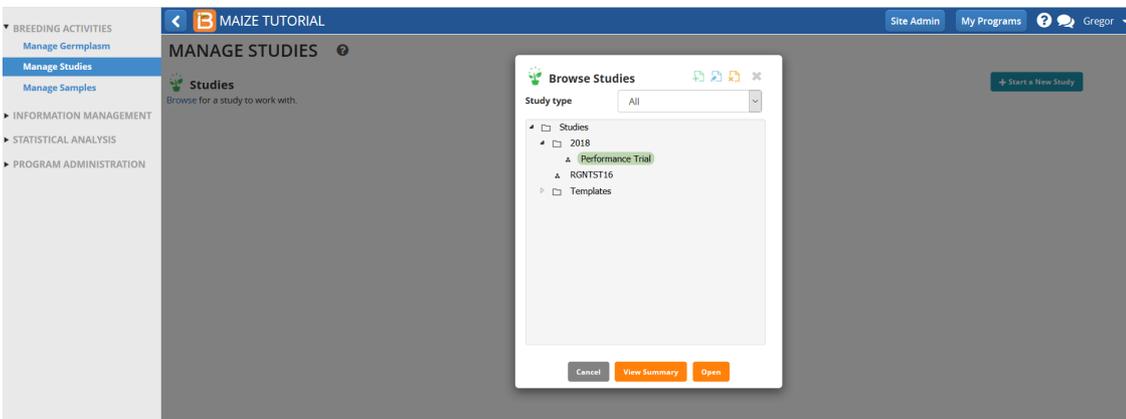
Summary

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.

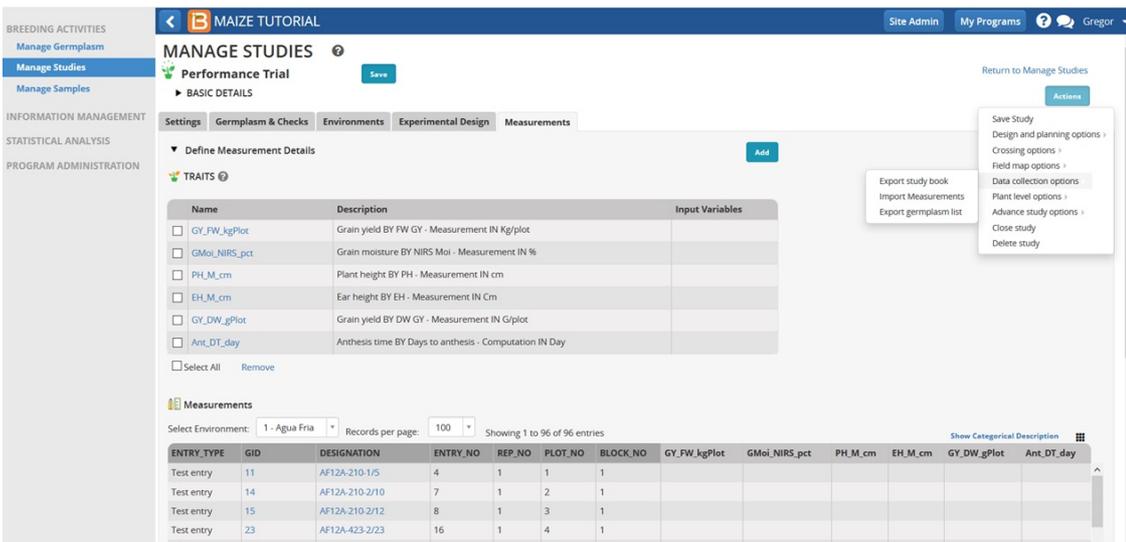
- [Export Trial for Data Collection](#)
- [Import Example Measurements](#)

Export Trial for Data Collection

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

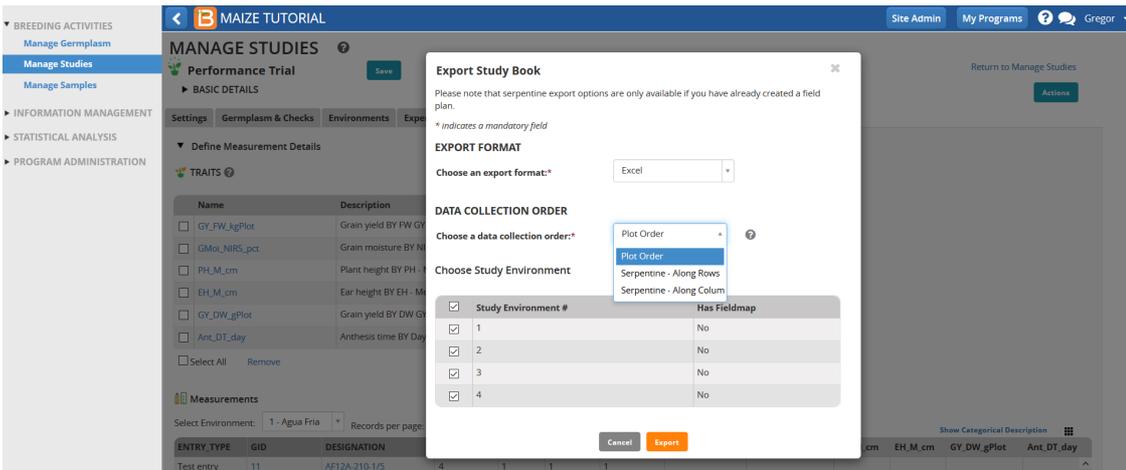
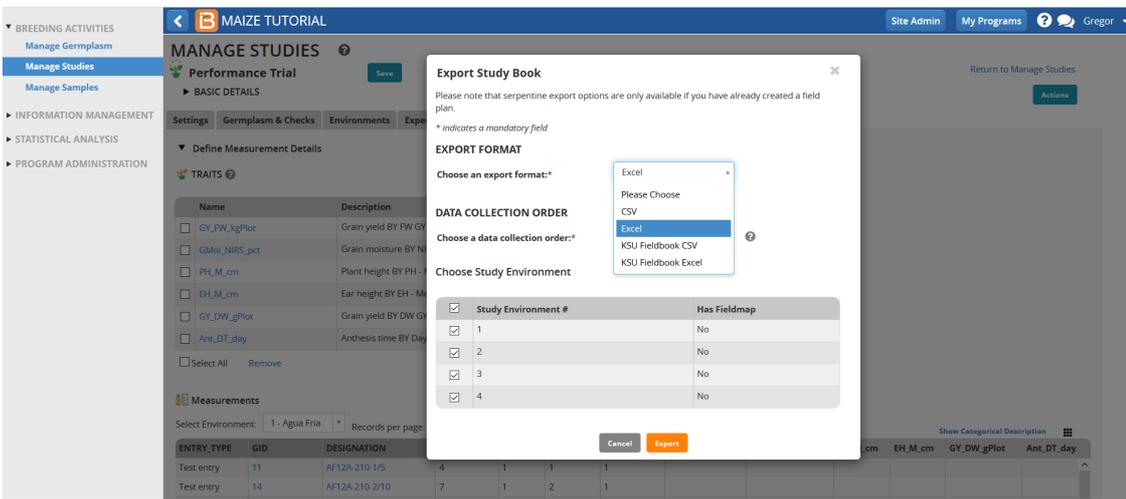


- Select **Export study book** from Data collection options in the Actions menu.

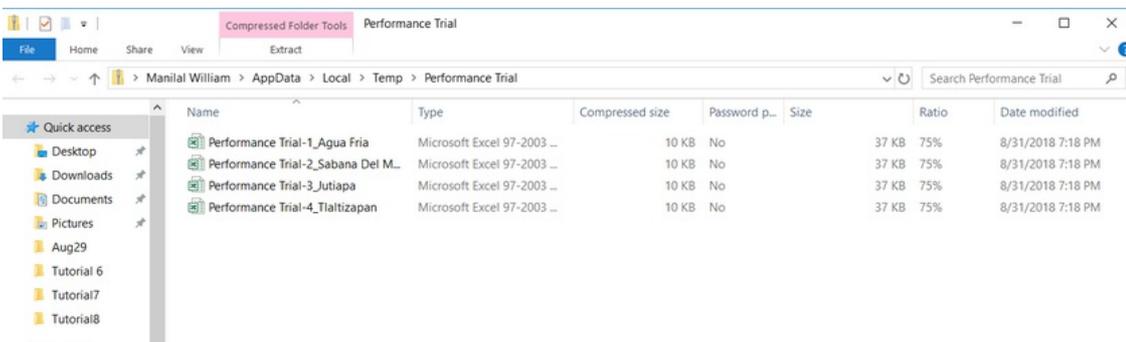


384 trial entries associated with empty columns of phenotypic data.

- 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.



- 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.



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.**

ENTRY_T	GID	DESIGNATION	ENTRY_N	PLOT_ID	REP_NO	PLOT_NO	BLOCK	N	GY_FW_kg	GMoi_NI	PH_M_cm	EH_M_cm	GY_DW_gPlot	Ant_DT_day
T	11	AF12A-210-1/5	4	9OVNP0heccE1y	1	1	1	1						
T	14	AF12A-210-2/10	7	9OVNPxx66G9F	1	2	1	1						
T	15	AF12A-210-2/12	8	9OVNPJU5dCKRT	1	3	1	1						
T	23	AF12A-423-2/23	16	9OVNP2izqJJDj	1	4	1	1						
T	34	AF12A-423-6/20	27	9OVNPL9YjhrC2	1	5	2	1						
T	27	AF12A-423-4/22	20	9OVNPRPcReGQN	1	6	2	1						
T	30	AF12A-423-5/20	23	9OVNPUInlCOonZ	1	7	2	1						
T	12	AF12A-210-14/17	5	9OVNPU7VolpAh	1	8	2	1						
T	29	AF12A-423-5/16	22	9OVNPNH09J7aG	1	9	3	1						
T	8	AF12A-209-2/8	1	9OVNPPW7JRpTik	1	10	3	1						
T	35	AF12A-423-6/21	28	9OVNPPScDpW0rl	1	11	3	1						
T	21	AF12A-423-2/16	14	9OVNPMw2aJHGf	1	12	3	1						
T	16	AF12A-210-2/6	9	9OVNPPScrcZkgO	1	13	4	1						
T	20	AF12A-423-2/14	13	9OVNPPVrjG3QqP	1	14	4	1						
T	38	Commercial Check 2	31	9OVNPHR03ghWp	1	15	4	1						
T	10	AF12A-210-1/4	3	9OVNPLRXLbz	1	16	4	1						
T	17	AF12A-210-2/7	10	9OVNPPfaeykSr	1	17	5	1						
T	25	AF12A-423-4/20	18	9OVNP4L8ggnNX	1	18	5	1						
T	13	AF12A-210-15/23	6	9OVNPP6nCb5fDD	1	19	5	1						

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.

ENTRY_TYPE	GID	DESIGNATION	ENTR_Y_NO	PLOT_ID	REP_NO	PLOT_NO	BLOCK_NO	GY_FW_kgPlot	GMoi_NIRS_pct	PH_M_cm	EH_M_cm	GY_DW_g_Plot	Ant_DT_day
T	11	AF12A-210-1/5	4	3BCMP5zyRihPm	1	1	1						
T	14	AF12A-210-2/10	7	3BCMPPrCvH0vA3	1	2	1						
T	15	AF12A-210-2/12	8	3BCMPFjG8Fhax	1	3	1						
T	23	AF12A-423-2/23	16	3BCMPccSB7lo3	1	4	1						
T	34	AF12A-423-6/20	27	3BCMPKV1ngPBo	1	5	2						
T	27	AF12A-423-4/22	20	3BCMP7r5ynVT7	1	6	2						
T	30	AF12A-423-5/20	23	3BCMPJ6Mxksil	1	7	2						
T	12	AF12A-210-14/17	5	3BCMPYtr9RpYg	1	8	2						
T	29	AF12A-423-6/16	22	3BCMPtqniva2R	1	9	3						
T	8	AF12A-209-2/8	1	3BCMPwBnmEJnl	1	10	3						
T	35	AF12A-423-6/21	28	3BCMPDpDR5a	1	11	3						
T	21	AF12A-423-2/16	14	3BCMPHpyv35	1	12	3						

ENTRY_TYPE	GID	DESIGNATION	ENTR_Y_NO	PLOT_ID	REP_NO	PLOT_NO	BLOCK_NO	GY_FW_kgPlot	GMoi_NIRS_pct	PH_M_cm	EH_M_cm	GY_DW_g_Plot	Ant_DT_day
T	11	AF12A-210-1/5	4		1	1	1	6.0446	21.1	215	120	6000	59
T	14	AF12A-210-2/10	7		1	2	1	7.0979	22.9	260	150	7210	60
T	15	AF12A-210-2/12	8		1	3	1	5.614	23.8	260	130	5770	60
T	23	AF12A-423-2/23	16		1	4	1	6.4761	23.5	222	115	6630	60
T	34	AF12A-423-6/20	27		1	5	2	6.7193	23.4	240	120	6870	57
T	27	AF12A-423-4/22	20		1	6	2	5.7113	23.8	250	140	5870	58
T	30	AF12A-423-5/20	23		1	7	2	6.9863	22.5	230	120	7060	56

- Select **Import Measurements** from the Data collection options in the Actions menu in order to import the field measurements into the BMS.

MANAGE STUDIES Performance Trial

Define Measurement Details

Name	Description	Input Variables
<input type="checkbox"/> GY_FW_kgPlot	Grain yield BY FW GY - Measurement IN Kg/plot	
<input type="checkbox"/> GMoi_NIRS_pct	Grain moisture BY NIRS Moi - Measurement IN %	
<input type="checkbox"/> PH_M_cm	Plant height BY PH - Measurement IN cm	
<input type="checkbox"/> EH_M_cm	Ear height BY EH - Measurement IN Cm	
<input type="checkbox"/> GY_DW_gPlot	Grain yield BY DW GY - Measurement IN G/plot	
<input type="checkbox"/> Ant_DT_day	Anthesis time BY Days to anthesis - Computation IN Day	

Measurements

Select Environment: 1 - Agua Fria

ENTRY_TYPE	GID	DESIGNATION	ENTR_Y_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						

- Browse and select the field book with data for location 1 (Agua Fria). Select Import. You must **save** 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.

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
1	4	1	4288	Test entry	1	AF12A-210-1/5	6.87	22.6	235	120	6950	57
1	7	2	4291	Test entry	1	AF12A-210-2/10	6.6	22.9	236	135	6700	57
1	8	3	4292	Test entry	1	AF12A-210-2/12	8.35	22.8	245	115	8470	59
1	16	4	4300	Test entry	1	AF12A-423-2/23	5.14	27	190	90	5510	62
1	27	5	4311	Test entry	2	AF12A-423-6/20	5.99	25.3	220	131	6280	60
1	20	6	4304	Test entry	2	AF12A-423-4/22	7.58	22.2	240	130	7630	57
1	23	7	4307	Test entry	2	AF12A-423-5/20	5.78	27.3	225	125	6230	62
1	5	8	4289	Test entry	2	AF12A-210-14/17	6.77	24.8	233	110	7050	60
1	22	9	4306	Test entry	3	AF12A-423-5/16	7.66	24.7	205	108	7970	60
1	1	10	4285	Test entry	3	AF12A-209-2/8	6.04	21.1	215	120	6000	59
1	28	11	4312	Test entry	3	AF12A-423-6/21	8.65	23.4	225	120	8840	59

You will receive an error message if the data is imported without correct Plot IDs in the trial field book.

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Maize demonstration data was provided by Mike Olsen at CIMMYT International Maize and Wheat Improvement Center. These data have been adapted for training purposes. Any misrepresentation of the raw breeding data is the solely the responsibility of the IBP.



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