

# Data Management System

- DMS is the component of ICIS that manages germplasm characterization and evaluation data, environmental data for genetic resources and crop improvement projects.

# Functions of DMS

- store structured data from genetic resource, variety evaluation & crop improvement studies;
- document data
- link data to germplasm identifiers;
- link data to other descriptors (Location, treatments, molecular variant, etc.)
- facilitate structured searches.

# Data Model of DMS

Study

Filename: N2000DS.xls

Variate

Factor

The Effect of Fertilizer N on the yield of rice

Year: 2000

Season: Dry Season

Level

Observation

Unit

Rep	Main Plot	Sub Plot	Variety	Fert	Yield
1	1	1	B	20	10.3
1	1	2	B	50	12.7
1	2	1	C	50	18.4
1	2	2	C	20	13.7
1	3	1	A	20	12.6
1	3	2	A	50	16.7
2	1	1	B	50	19.2
2	1	2	B	20	12.3
2	2	1	A	20	17.1
2	2	2	A	50	14.1
2	3	1	C	50	16.3
2	3	2	C	20	12.2

Datum

# Data Model ...

Factor

Variate

Fert

Yield

**PROPERTY** *NITROGEN FERTILIZER*

*GRAIN YIELD*

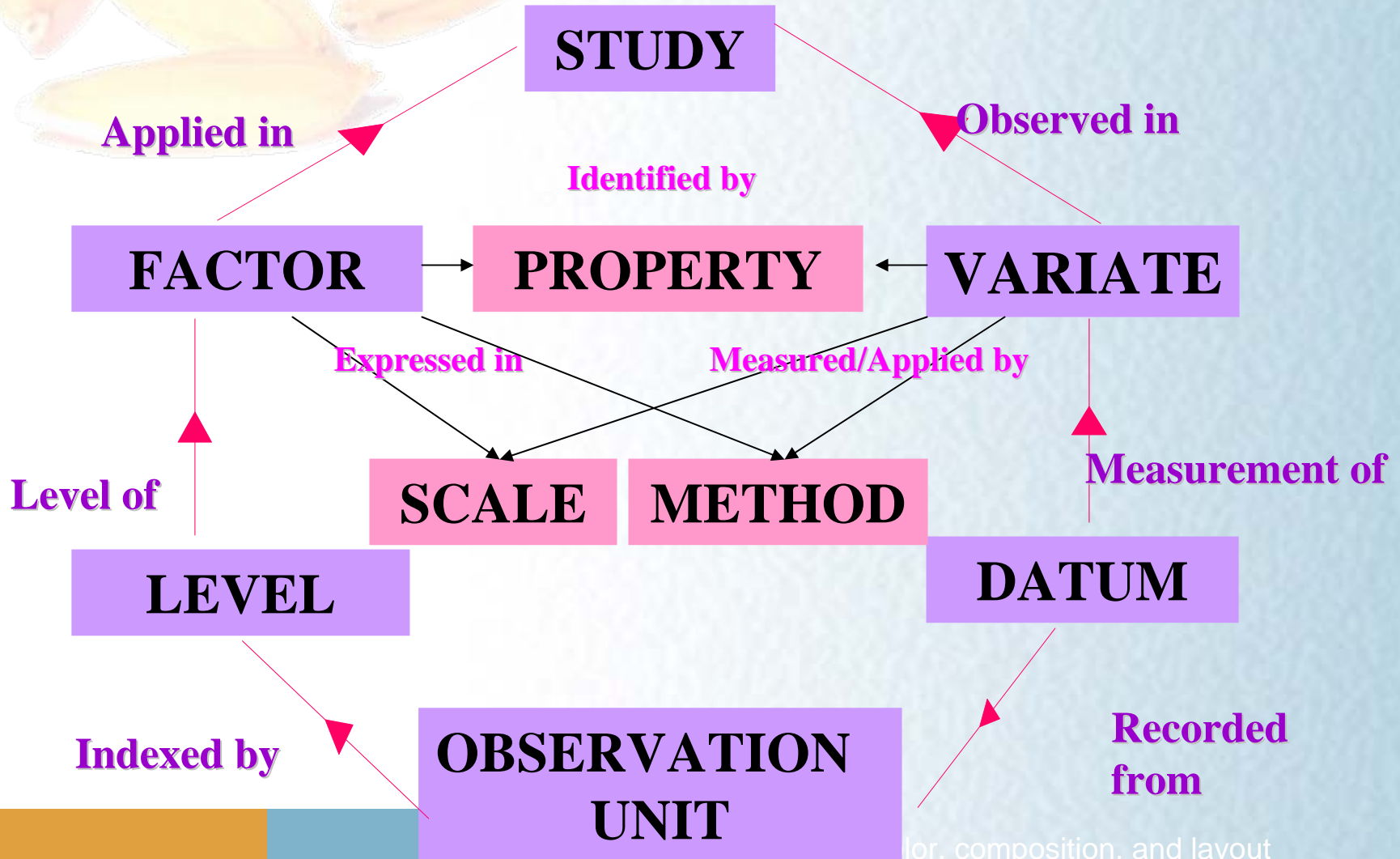
**SCALE** *kg/ha*

*t/ha*

**METHOD** *Total Application*

*Paddy Rice*

# Data Model ....



# DMS Workbook

Workbook is a DMS application that connects an Excel spreadsheet to the DMS database to facilitate loading and retrieving data from DMS.

# DMS Workbook File

	A	B	C	D	E	F	G	H
1	<b>STUDY</b>	N2000DS						
2	<b>TITLE</b>	Effect of Fertilizer N on the Yield of Rice						
3	<b>PMKEY</b>							
4	<b>OBJECTIVE:</b>							
5	<b>START DATE:</b>	20000401						
6	<b>END DATE:</b>	20000601						
7								
8	<b>CONDITION</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	<b>LABEL</b>
9	Year		TIME OF MEASUREMENT/ OBSERVATION	4-digit	Not Specified	N	2000	N2000DS
10	Season		SEASON	Season Code 0-1	Not Specified	C	DRY	N2000DS
11								
12	<b>FACTOR</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		<b>LABEL</b>
13	Rep		REPLICATION	Replication No.	Field Layout	N		
14	Main Plot		BLOCK IN LAYOUT	Block number	Field Layout	N04		
15	Sub Plot		BLOCK IN LAYOUT	Block number	Field Layout	N		
16	Variety		VARIETY	Variety Name	Not Specified	C		
17	Fert		NITROGEN FERTILIZER	kg/ha	Total Application	N		
18								
19	<b>CONSTANT</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	
20								
21				1003	9		30	
22								
23	<b>VARIATE</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		
24	Yield		GRAIN YIELD	Kg/ha	Paddy Rice	N		
25								
26								
27								
28								

N or C

# Workbook File . . .

columns of variate names

observation range

RowTag

	A	B	C	D	E	F	G	H
1	Rep	Main Plot	Sub Plot	Variety	Fert	Yield		Row Tag
2					kg/ha	t/ha		1
3	1	1	1	B	20	10.3		
4	1	1	2	B	50	12.7		
5	1	2	1	C	50	18.4		
6	1	2	2	C	20	13.7		
7	1	3	1	A	20	12.6		
8	1	3	2	A	50	16.7		
9	The next block is the second replication							1
10	2	1	1	B	50	19.2		
11	2	1	2	B	20	12.3		
12	2	2	1	A	20	17.1		
13	2	2	2	A	50	14.1		
14	2	3	1	C	50	16.3		
15	2	3	2	C	20	12.2		
16								
17								
18								
19								
20								
21								
22								
23								
24								

- column for marking rows that do not contain data to be loaded to DMS
- the tag is any number except 0

## Observation Sheet

color, composition, and layout

# Sample Workbook Files

	A	B	C	D	E	F	G	H
1	<b>STUDY</b>	OYT2000WS						
2	<b>TITLE</b>	Observational Yield Trial 2000 Wet Season						
3	<b>PMKEY</b>	0						
4	<b>OBJECTIVE:</b>							
5	<b>START DATE:</b>	0						
6	<b>END DATE:</b>	0						
7								
8	<b>INVESTIGATOR</b>	<b>INSTITUTION</b>	<b>POSITION</b>					
9								
10								
11								
12	<b>CONDITION</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	<b>LABEL</b>
13	SEASON		SEASON	Season Code 0-1	Not Specified	N	1	OYT2000WS
14	YEAR		YEAR	4-digit	Not Specified	N	2000	OYT2000WS
15	NURSERY		NURSERY	Nursery Type	Not Specified	C	OYT	OYT2000WS
16								
17								
18								
19	<b>FACTOR</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		<b>LABEL</b>
20	ENTRYNO		VARIETY	Entry Number	Not Specified	C		ENTRYNO
21	GID		VARIETY	GID	Not Specified	N		ENTRYNO
22	GRPNO		VARIETY	Arbitrary No.	Not Specified	C		ENTRYNO
23	DESIGNATION		VARIETY	Variety Name	Not Specified	C		ENTRYNO
24	SOURCE		VARIETY	Name of seed source	Seed Source	C		ENTRYNO
25								
26								

# Sample Workbook Files . . .

	A	B	C	D	E	F	G
1	<b>STUDY</b>	IR64 Mutant					
2	<b>TITLE</b>						
	A	B	C	D	E	F	G
22	VARIATE	DESCRIPTION	TRAIT	SCALE	METHOD	DATA TYPE	Isolate
53	BlastCa89_RS		BLAST	R MR MS S	Greenhouse Evaluation	C	Ca89
54	InheritanceCa89		INHERITANCE (BLAST	Type of Gene	Seedling Stage	C	Ca89
55	Genetic Ratio		GENETIC RATIO	Resistant : Susceptible	Seedling Stage	C	Ca89
56	BlastBN111		BLAST	4-pt Scale Lesion Length	Greenhouse Evaluation	C	BN111
57	Blast64-1-3-9-1		BLAST	R MR MS S	Greenhouse Evaluation	C	64-1-3-9-1
58	BlastIK81-25		BLAST	R MR MS S	Greenhouse Evaluation	C	K81-25
59	BlastV-850196		BLAST	R MR MS S	Greenhouse Evaluation	C	V-850196
60	BlastPO6-6		BLAST	R MR MS S	Greenhouse Evaluation	C	PO6-6
61	BlastPool1		BLAST	R MR MS S	Greenhouse Evaluation	C	BN111, 64-1-3
62	Genetic ratio(Pool1)		GENETIC RATIO	Resistant : Susceptible	Seedling Stage	C	BN111, 64-1-3
63	BlastCBN9214-1		BLAST	R MR MS S	Greenhouse Evaluation	C	CBN9214-1
64	Blast9232-5		BLAST	R MR MS S	Greenhouse Evaluation	C	9232-5
65	BlastIK81-3		BLAST	R MR MS S	Greenhouse Evaluation	C	K81-3
66	BlastJMB840102		BLAST	R MR MS S	Greenhouse Evaluation	C	JMB840102
67	Blast9239-4		BLAST	R MR MS S	Greenhouse Evaluation	C	9239-4
68	Genetic Ratio (BN111)		GENETIC RATIO	Resistant : Susceptible	Seedling Stage	C	BN111
69	InheritanceBN111		INHERITANCE (BLAST	Type of Gene	Seedling Stage	C	BN111
70	BlastPool1_RS		BLAST	R MR MS S	Greenhouse Evaluation	C	BN111, 64-1-3
71	BlightPX061_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX061
72	BlightPX086_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX086
73	BlightPX079_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX079
74	BlightPX071_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX071
75	BlightPX0112_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX0112
76	BlightPX0145_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX0145
77	BlightPX087_RS		BACTERIAL BLIGHT	4-pt Scale Lesion Length	Greenhouse evaluation	C	PX087
78	BlightPX061_cm		BACTERIAL BLIGHT	Lesion length (cm)	Greenhouse evaluation	C	PX061
79	BlightPX086_cm		BACTERIAL BLIGHT	Lesion length (cm)	Greenhouse evaluation	C	PX086

# Sample Workbook Files . . .

	A	B	C	D	E	F	G	H
1	<b>STUDY</b>	IAC165xCO39						
2	<b>TITLE</b>	Molecular characterization of RILs from cross IAC165/CO39						
3	<b>PMKEY</b>	0						
4	<b>OBJECTIVE:</b>							
5	<b>START DATE:</b>	19990000						
6	<b>END DATE:</b>	19990000						
7								
8	<b>INVESTIGATOR</b>	<b>INSTITUTION</b>	<b>POSITION</b>					
9								
10	<b>CONDITION</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	<b>LABEL</b>
11								
12								
13	<b>FACTOR</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		<b>LABEL</b>
14	MARKER		LOCUS	NAME	NOT SPECIFIED	C		MARKER
15								
16								
17								
18	<b>CONSTANT</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	
19								
20								
21	<b>VARIATE</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		
22	INTERVAL		LINKAGE DISTANCE	CENTIMORGANS (cM)	QTL Cartographer	N		
23	ORDER		LINKAGE DISTANCE	MARKER ORDER	QTL Cartographer	N		
24	CHROMOSOME		LINKAGE_GROUP	CHROMOSOME NUMBER	QTL Cartographer	N		
25								
26								
27								
28								

## Map Data

:: color, composition, and layout

# Sample Workbook Files . . .

	A	B	C	D	E	F	G	H
1	<b>STUDY</b>	IURON-1999						
2	<b>TITLE</b>	25th International Upland Rice Observational Nursery						
3	<b>PMKEY</b>							
4	<b>OBJECTIVE:</b>							
5	<b>START DATE:</b>							
6	<b>END DATE:</b>							
7								
8	<b>INVESTIGATOR</b>	<b>INSTITUTION</b>	<b>ADDRESS</b>	<b>ID</b>				
9								
10	<b>CONDITION</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	<b>LABEL</b>
11	SETNO	INGER SET NUMBER	SETNO	INGER CODE	NOT SPECIFIED	C	6	
12	NURSCODE	Nursery Code	NURSERY	Nursery CODE	NOT SPECIFIED	C	032	
13	YEAR	Year	YEAR	4-DIGIT	NOT SPECIFIED	C	1999	
14	ICIS_LOCID	ICIS Location Code	LOCATION	LOCID (ICIS)	NOT SPECIFIED	C	9001	
15	COUNCODE	INGER Country Code	LOCATION	COUNCODE (INGER)	NOT SPECIFIED	C	CIV	ICIS_LOCID
16	LOCCODE	INGER Location Code	LOCATION	LOCID (INGER)	NOT SPECIFIED	C	009	ICIS_LOCID
17	TRIALNO	Trial Number	TRIAL	NUMBER	NOT SPECIFIED	C	1	
18								
19	<b>FACTOR</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		<b>LABEL</b>
20	MONTH		MONTH	CODE	NOT SPECIFIED	N		
21								
22	<b>CONSTANT</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>	<b>VALUE</b>	
23	WEATHER	General weather condition	WEATHER CONDI	INGER CODE	NOT SPECIFIED	C	2	
24	WATER	Water Management	WATER MANAGE	INGER CODE	NOT SPECIFIED	C		
25								
26								
27	<b>VARIATE</b>	<b>DESCRIPTION</b>	<b>TRAIT</b>	<b>SCALE</b>	<b>METHOD</b>	<b>DATA TYPE</b>		
28	RAINDAYS	No. of rainy days	RAINY DAYS	No. of days	NOT SPECIFIED	N		
29	RAINFALL	Total rainfall	RAINFALL	mm	NOT SPECIFIED	N		
30	MAXTEMP	Ave. Max. Temperature	TEMPERATURE	°C	NOT SPECIFIED	N		
31	MINTEMP	Ave. Min. Temperature	TEMPERATURE	°C	NOT SPECIFIED	N		
32	SOLAR	Solar Radiation	SOLAR RADIATIO	cal/cm <sup>2</sup>	NOT SPECIFIED	N		
33	SUNSHINE	Ave. sunshine hours	SUNSHINE HOURS	No of Hours	NOT SPECIFIED	N		
34								
35								

## INGER Weather Data

∴ color, composition, and layout