

ICIS Workbook: Answering to the Users' Needs

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Introduction: Acknowledgement

- Cheers to a great collaboration between users and developers in the ICIS Community!
- What you are about to see is the realization of magnificent ideas contributed by the users through Feature Requests as well as Bug Reports posted in CropForge.

An Example: Feature Request # 748

- On 4 February 2008, Shawn Yates wrote:

“It would be nice to have a function where you identify which column has the line designation and it will search the GMS and retrieve the GID for the lines in that column...”

“...To take it a step further, a toggle could be made to create a SetGen list based on the lines in the workbook.”

The Result: Search Germplasm

(Feature Request # 748)

The screenshot shows a Microsoft Excel spreadsheet titled 'CNA 4196' and an open 'ICIS Workbook (IRIS) - Search Germplasm' dialog box.

Excel Spreadsheet (List):

	A	B	C	D	E	F	G	H	ROWTAG
1	DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID			
2	CNA 4196	CNA 4196	HB001U	IURON12		1			
3	IDSA 113	IDSA 113	HB002U	IURON03		2			
4	FARO 41	IRAT 13/PALAWAN	HB003U	IURON15		3			
5	UPL RI 5	SIGADIS/BPI 75-1	HB004U	IURON07		4			
6	WAB 326-B-B-7-H1	TOX 1785-19-18/W	HB005U	IURON06		5			
7	WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11		6			
8	YUNLU 28	IDSA 8/WUNENGD	HB007U	IURON04		7			
9	IRR1132	UPL RI 5/R 12379-HB008U	IURON17	204538		8			
10	R72768-12-1-1	IR 60080-46 A/IR 65/HB009U	U03DSOYT	1161408		9			
11	R72768-28-1-1	IR 60080-46 A/IR 65/HB010U	U03DSOYT	1161406		10			
12	IR 75502-24-1-1-B	B 6144 F-IR-6-04/HB011U	U03DSOYT			11			
13	IR75516-30-1-1-B	IR 53236-275-1/CT/HB012U	U03DSOYT	1161444		12			
14	IR75516-56-1-1-B	IR 53236-275-1/CT/HB013U	U03DSOYT	1161445		13			
15	IR75518-84-1-1-B	IR 60080-46 A/IR 53/HB014U	U03DSOYT	1161448		14			
16	IR75531-31-1-2-B	IR 70360-54-1/B/M/HB015U	U03DSOYT	1161440		15			
17	IR76561-AC-8-B	CT 13382-9-4-MR/HB016U	U03DSOYT	1161327		16			
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									

Germlab Validation:

- CROSS
- Checked/New | Suggested/Stored | Error Detail
- Multiple germplasm names found.

ICIS Workbook (IRIS) - Search Germplasm Dialog:

From: Search: CNA 4196 in Name

Names	Method	Location	Unique ID
CNA 4196	UDM	Brazil	IRIS 1-65247
CNA 4196, IRTP 17390	ISE	IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...	IRIS 10-70732

Pedigree Tree: [+] Germplasm | Attribute Details | Relatives | Neighborhood | Lists | Stocks

Property Value

- GID 70732
- Preferred Name CNA 4196
- Date Named 0
- Name Location Brazil
- Creation Method IMPORT
- Date Created 1990-05
- Germ. Location IRRI-INTERNATIONAL RICE RESEARCH INSTITUTE, LOS BA...
- Cross Expansion
- Generation No. Ukn(F,M) ISE
- Unique ID IRIS 10-70732
- Cross CNA 4196 (2277926)
- Source CNA 4196 (2277926)

Name Type Value

- CvNAM CNA 4196
- ITEST IRTP 17390

Legend: Generative Method | Derivative Method

Generation History

Attribute Type Value

- INGER 17390 BRA
- MLS_DATE 29-JUN-2004

1. Start with a list of germplasms.
2. Run the Search Germplasm fxn.
3. Names matching a single germplasm entry returns the GID.
4. Multiple name matches launches the GMS Search look-alike user interface.
5. User double-clicks the selected name to get the GID.

Input Germplasm *(Stemming from Feature Request # 748)*

The screenshot shows the ICIS Workbook (IRIS) interface for inputting germplasm data. On the left, an Excel spreadsheet titled 'List' displays a table of germplasm entries. In the center, a window titled 'ICIS Workbook (IRIS) - Input Germplasm' shows a pedigree editor for a germplasm named 'X8971B-15'. The pedigree tree shows 'X8971B-15' as the root, with a female parent 'X8971B' and a male parent 'IR 72'. The pedigree tree also includes 'Rough/3*IR72' and 'Rough/2*IR72'. On the right, a properties panel shows details for 'X8971B-15', including Designation (X8971B-15), Name Type (DERIVATIVE NAME), Date Named, Name Location (Unknown), Name Reference, Creation Method (SINGLE PLANT SELECTION), Date Created, Germ. Location (Unknown), and Germ. Reference. At the bottom, there are buttons for 'OK' and 'Cancel'. A separate 'Germplasm Validation' dialog box is open at the bottom left, showing error messages for several entries: 'Germplasm name doesn't exist yet.', 'Germplasm name doesn't exist yet.', 'Germplasm name doesn't exist yet.', and 'Germplasm name doesn't exist yet.'.

1. Start with a list of germplasms.
2. Run the Input Germplasm fxn.
3. Names that don't exist yet launches a user interface for defining the properties of the new germplasm.
4. Automated and manual tools are provided for defining the generation and parental tree.

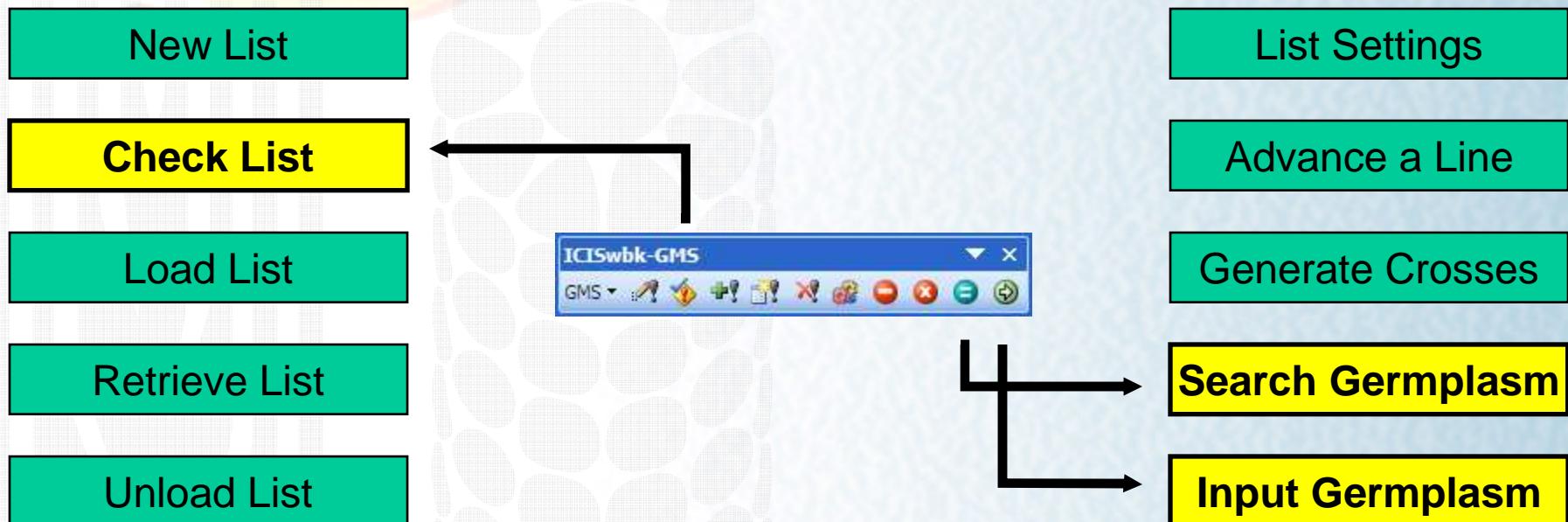
Connecting the Dots...

Historical background of the Input Germplasm function

- While Shawn Yates in Canada was in need of a “Search Germplasm” function, two months before that on 26 November 2007, Dr. Vivek in Zimbabwe was longing for a pedigree entry tool for his Maize Fieldbook application.
- The pedigree entry tool that was developed for him was further improved and was incorporated into the ICIS Workbook to become the “Input Germplasm” function.

Combining the new GMS functions resulted to the...

ICISwbk-GMS Module *(Feature Request # 748)*

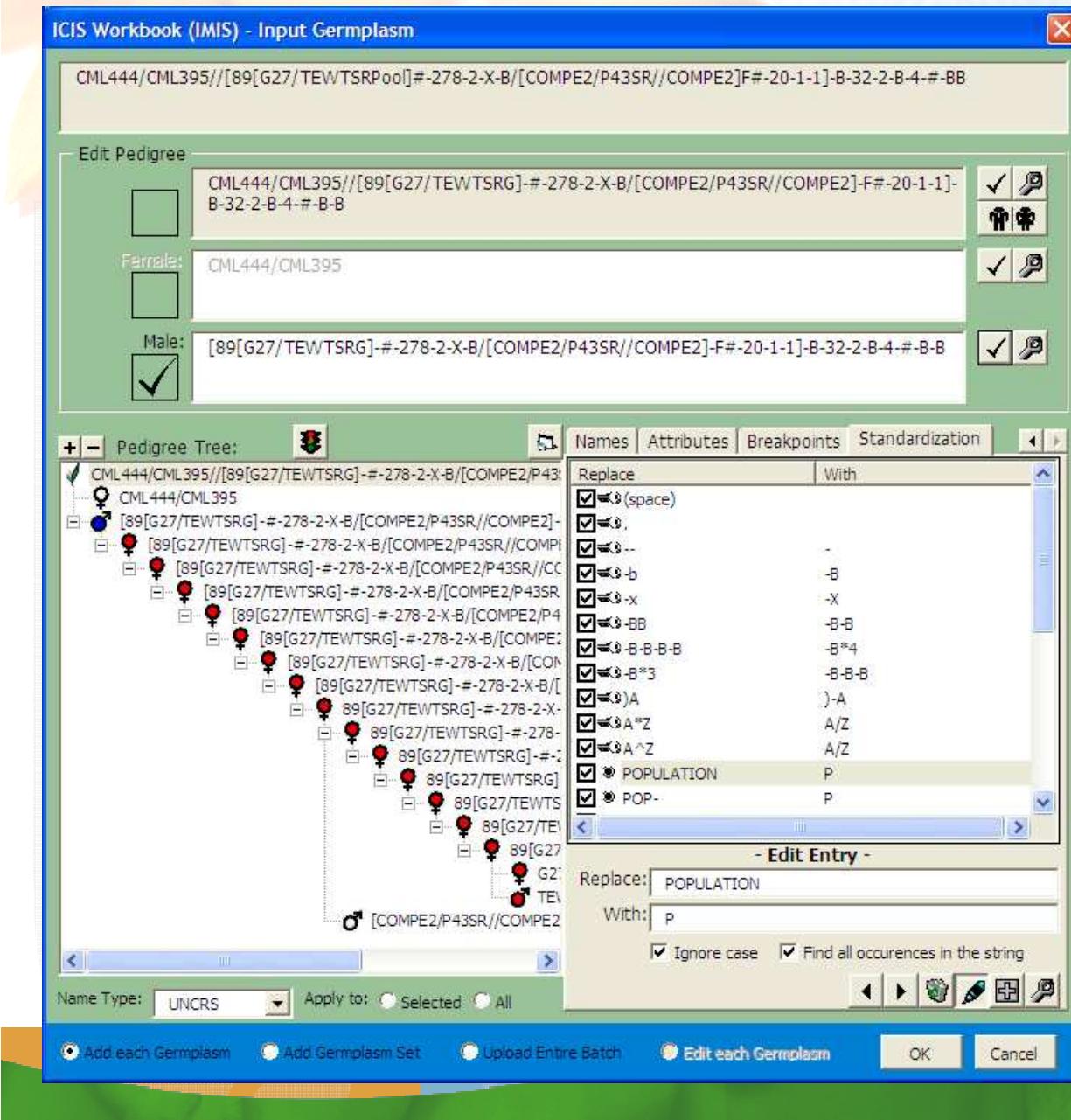


ICISwbk-GMS Features...

The Search Germplasm interface has an added functionality of parsing a user-defined attribute.

The screenshot shows the ICIS Workbook - Search Germplasm interface. At the top, there is a search bar with 'Search: IR 43' and a dropdown menu 'in Name'. Below the search bar is a table with columns: Names, Method, Location, and Unique ID. The table lists several entries, including 'IR 43, IRGC 32615, IR305-3-17/IR66...' with Method 'ISE' and Location 'IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...', and 'IR 43, SAAVEDRA 5' with Method 'VCR' and Location 'BOLIVIA'. In the center, there is a detailed view of the 'COLL' attribute for the entry 'IR 43, IRGC 32615'. The detailed view table has columns: Attribute Type and Value. The 'COLL' row is selected, showing 'IRGC 32615 ;1 O. SATIVA;;;;PHL'. Other rows include: ISOVG (IRGC 32615 ;1), IPSTAT (FAO (9/14/1994)), ORI_COUN (PHILIPPINES), MLS_DATE (29-JUN-2004), SPP_CODE (S), ACQ_DATE (19760812), REM_SPE (TOLERANT TO ZINC DEFICIENT SOIL & B...), SAM_STO (4), SAM_STO (IRRI VARIETIES RELEASED IN PHIL. IN 1978), SAM_TYPE (1), and TAXNO (2832). Below this is a sub-table titled 'COLL - GERMPLASM COLLECTION ATTRIBUTE' with columns: Attribute and Value. It lists: ACCNO (IRGC 32615), SPECIES (O. SATIVA), MISSCODE, COLLECNO, DCCODE, SOURCE, and DISO (PHL). At the bottom right are 'OK' and 'Cancel' buttons.

ICISwbk-GMS Features...



The Input Germplasm interface allows the user to define his own set of rules for Name Standardization.

These user-defined rules are preserved in the INI file.

Regular expressions are used to implement such feature.



Without Name Standardization...



NID	GID	NTYPE	NSTAT	NUID	NVAL	NLOCN	NDATE	NREF
462502	111991	5	1	4	SW1(S)-C11-81	0	0	0
464836	112734	5	1	4	SW1(S)-C11-81-2	0	0	0
469256	114282	5	1	4	SW1(S)-C11-81-2-4	0	0	0
472086	115548	5	1	4	SW1(S)-C11-81-2-4-2	0	0	0
475523	116820	5	1	4	SW1(S)-C11-81-2-4-2-1	0	0	0
479666	118302	5	1	4	SW1(S)-C11-81-2-4-2-1-B	0	0	0
484532	119563	5	1	4	SW1(S)-C11-81-2-4-2-1-B-B	0	0	0
486874	120295	5	1	4	SW1(S)-C11-81-2-4-2-1-B-B-B	0	0	0
490788	121589	5	1	4	SW1(S)-C11-81-2-4-2-1-B-B-B-B	0	0	0
265351	31697	6	1	4	#C22MH83#	0	0	0
313081	59707	3	1	4	((CML161/CML451)-B/CML451/CML451)/Cf	23218	0	0
504641	125885	5	1	4	((A.P.R.L.H.BA92 7-4-2-1/M.CRUZAS AM.F	0	0	0
265057	31454	3	1	4	((AE/150))	23218	0	0
307599	56933	2	1	4	((AE/150-))	23218	0	0
325238	64002	2	1	4	((AE/150-))	23218	0	0
300781	53271	3	1	4	((AE/150-))/CML150	23218	0	0
310114	58271	3	1	4	((AE/150-))/CML150	23218	0	0
329787	65650	3	1	4	((AE/150-))/CML150	23218	0	0
435844	101430	3	1	4	((AE/173)/EHT29/CML144)	23218	0	0
445091	105227	3	1	4	((AE/173)/EHT29/CML144)/cm144	23218	0	0
281853	43811	3	1	4	((AE/Pob42/PB)/PB/PB/CML177)	23218	0	0
284159	45176	3	1	4	((AE/Pob42/PB)/PB/PB/CML177)/CML177	23218	0	0
463038	112242	3	1	4	((C17/CML328)/C17)	0	0	0
467273	113436	5	1	4	((C17/CML328)/C17)-B	0	0	0
448356	106639	3	1	4	((CL-02134//CL-04351)-B-8-1-1-1/CML491)	23218	0	0
452331	108341	5	1	4	((CL-02134//CL-04351)-B-8-1-1-1/CML491)-B	23218	20060000	0
403270	87488	3	1	4	((CL-02181/CLQ-6315)-1/CML498)	23218	0	0
413245	91795	5	1	4	((CL-02181/CLQ-6315)-1/CML498)-1	23218	20060000	0
403269	78487	3	1	4	((CL-02181/CLQ-6315)-3/CML498)	23218	0	0
413242	91794	5	1	4	((CL-02181/CLQ-6315)-3/CML498)-1	23218	20060000	0
372530	79709	3	1	4	((CL02181/CLQ6315).5//CL02181)	23218	0	0
377001	81092	5	1	4	((CL02181/CLQ6315).5//CL02181)-1	23218	0	0
467915	113723	13	0	4	((LZ956441/LZ966205)-B-3-4-4-B-5-B-B-B-E	23648	20070500	0
456587	110081	2	1	4	((Puer5xCML141)-CL-G250)[22-1-1-2-B-B-1]	23218	20060000	0
453864	108977	2	1	4	((Snlp105xCML287)/CL-02450)]-1-1-2-B/CM	23218	20060000	0
269527	34487	3	1	4	((150/144/173 AE)	23218	0	0
264619	31158	6	1	4	((200))	23218	0	0
267550	32694	5	1	4	((200-3))	23218	0	0
311856	59131	1040	0	4	((200-3-x GUAT189)(16xP84c1 F27-4-1-4-B-1-	23218	20071000	0
269060	34118	3	1	4	((200-4)GUAT189)(16xP84c1 F27-4-1-4-B-1-B)	23218	0	0
267551	32695	5	1	4	((200-6))	23218	0	0
315462	60660	1040	0	4	((200-6-x GUAT189)(51-2-1)F1-B-xP84c1 F26-	23218	20071000	0
269061	34119	3	1	4	((200-6/GUAT189)(51-2-1)-F1-B)	23218	0	0
1052	1052	6	1	3	(21 F 114*21 F 38)-5-3-2-1-BB	11018	19950101	0
15298	13329	6	1	3	(21 F 114*21 F 38)-5-3-2-1-BB	11018	19950101	0
1050	1050	6	1	3	(21 F 218*21 F 76)-3-2-1-1-BB	11018	19950101	0
15294	13327	6	1	3	(21 F 218*21 F 76)-3-2-1-1-BB	11018	19950101	0
1041	1041	6	1	3	(21 F 241*21 F 219)-2-1-2-1-B	11018	19950101	0
15274	13317	6	1	3	(21 F 241*21 F 219)-2-1-2-1-B	11018	19950101	0
1047	1047	6	1	3	(21 F 38*21 F 114)-2-1-2-1-BB	11018	19950101	0
15288	13324	6	1	3	(21 F 38*21 F 114)-2-1-2-1-BB	11018	19950101	0
1044	1044	6	1	3	(21 F 88*21 F 162)-6-2-2-1-BB	11018	19950101	0
15282	13321	6	1	3	(21 F 88*21 F 162)-6-2-2-1-BB	11018	19950101	0
283101	44579	25	0	4	(21F114*21F38)-6-3-2-1-BB-f	9004	0	0
268649	33707	3	1	4	((21F114/21F38))	0	0	0
270250	35201	5	1	4	((21F114/21F38)-5	0	0	0
272244	36791	5	1	4	((21F114/21F38)-5-3	0	0	0
274486	38462	5	1	4	((21F114/21F38)-5-3-2	0	0	0
276660	40113	5	1	4	((21F114/21F38)-5-3-2-1	0	0	0
278540	41654	5	1	4	((21F114/21F38)-5-3-2-1-B	0	0	0
280804	43201	5	1	4	((21F114/21F38)-5-3-2-1-B-B	0	0	0
283098	44579	5	0	4	((21F114/21F38)-5-3-2-1-B-B-F	9004	0	0

The image shows a set of unmanaged pedigree strings coming from different breeders having different styles of naming germplasms.

The database is filled with duplicate name entries with no significant differences to merit each one's existence. Also, established naming conventions have been violated.

The Input Germplasm function addresses these issues.



ICISwbk-GMS Features...



Microsoft Excel

List Explorer

HECK

List

A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	ROWTAG	
BOLOUOF	BOLOUOF	ACDLOW 1991	IRTP 14216	309030	1		
BW 298-2	BG 400-1/BW 254-1	ACDLOW 1991	IRTP 15976	415981	2		
BW 309-4	BW 297-2/BW 400	ACDLOW 1991	IRTP 15979	412599	3		
CISANGGARUNG	PELITA I-1/B 3063	ACDLOW 1991	IRTP 15166	309357	4		
DEEPAK	IR 661/LALKA MOTI	ACDLOW 1991	IRTP 16802	402942	5		
IR 24637-38-2-2-1	IR 5785-162-1-1-2/I	ACDLOW 1991	IRTP 12142	76856	6		
IR 26760-27-1-3-2-I	JAGANATH/I R 2797	ACDLOW 1991	IRTP 14322	59968	7		
IR 29137-16-1-6	T 100/BR 4/I R 42	ACDLOW 1991	IRTP 16193	75208	8		
IR 43522-37-3-3-3	KHAO DAWK MALI 1	ACDLOW 1991	IRTP 16815	77760	9		
IR 46292-24-2-2-1-I	JANAKIRAM 60/I R 13	ACDLOW 1991	IRTP 15714	74991	10		
IR 46319-PMI 36-2-I	IR 19660-73-4-2-2/I	ACDLOW 1991	IRTP 16826	130402	11		
IR 46330-PMI 4-1-1-LEUANG YAI 148/I R	ACDLOW 1991	IRTP 16829	130515	12			
IR 48120-49-5-3-2	IR 5-114-3-1-2/I R 51	ACDLOW 1991	IRTP 15722	74938	13		
LEMO BESAR	LEMO BESAR	ACDLOW 1991	IRTP 12478	308152	14		
TETEP	TETEP	ACDLOW 1991	IRTP 463	4035	15		
IR 26	IR 24/TKM 6	ACDLOW 1991	IRTP 199	7845	16		
LOCAL CHECK	LOCAL CHECK	ACDLOW 1991	IRTP 3430	1846439	17		
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Description Observation

Generate Crosses

Female Parent:

- BOLOUOF
- BW 298-2
- BW 309-4
- CISANGGARUNG
- DEEPAK
- IFMO RFSAR

Male Parent:

Designation: [Text input field]

List Entry: Designation | Value

Germlasm: Names | Attributes

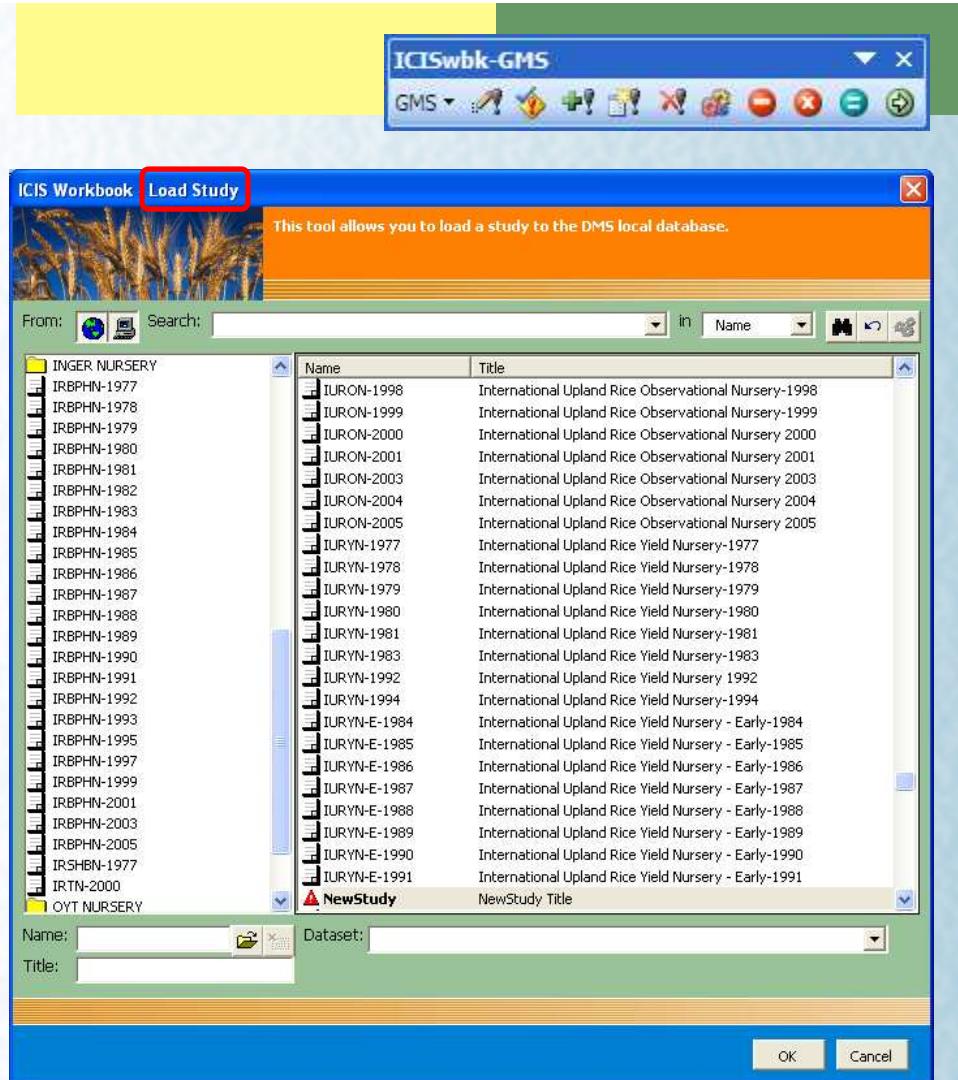
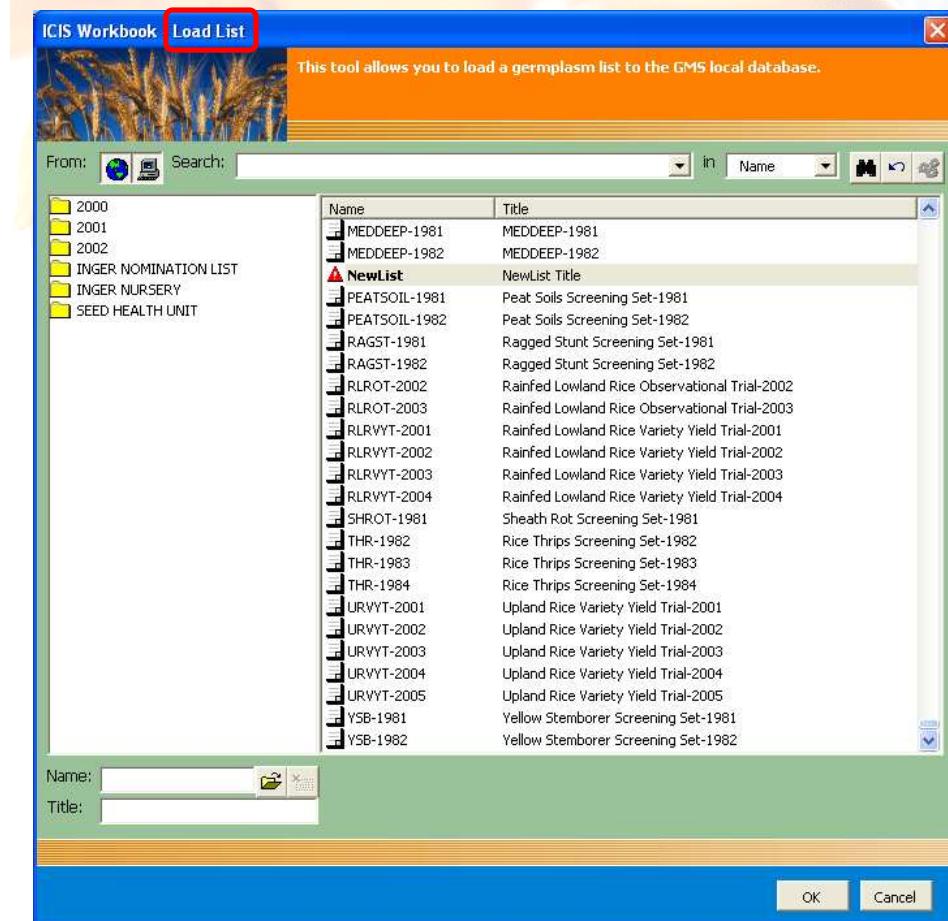
Property	Value
Designation	
Name Type	CROSS NAME
Date Named	
Name Location	
Creation Method	SINGLE CROSS
Date Created	
Germ. Location	

- Edit Entry -

A snapshot of the Generate Crosses interface while selecting the female parents.



ICISwbk-GMS Features...



Due to the similarity in many aspects between a LIST and a STUDY, using the same interface for managing the germplasm lists as with that of studies flattens the learning curve for new ICIS users.



ICISwbk-GMS Features...



ICIS Workbook - Input Germplasm

This tool converts a regular Excel file into the ICISworkbook format.

Map Germplasm List Columns

List Column	Workbook Column
DESIGNATION	DESIGNATION
CROSS	CROSS
ENTRYCODE	ENTRYCODE
SOURCE	SOURCE
GID	GID
ENTRYID	ENTRYID
NAME_TYPE	
NAME_DATE	

Map Germplasm Names

Workbook Column	Name Type
NCODE	NAME CODE
SCODE	STOCK CODE

Map Germplasm Attributes

Workbook Column	Attribute Type
ORIGIN	Seed source or origin

OK Cancel



Through a column-mapping interface (with built-in fuzzy name matching algorithm), users can have customized column names in their Excel file which correspond to the 6 major columns of SetGen.

And these custom mappings are saved within the Excel file which means they only get to do this procedure once by reusing the file as template.



ICISwbk-GMS Features...



List

A	B	C	D	E	F	G	H	I	J	K
1 LIST	InvVwck									
2 TITLE	InventoryW1W2									
3 DATE	20081212									
4 TYPE	LST									
22										

List

A	B	C	D	E	F	G	H	I	J
1 DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID		ROWTAG		
2 BreedersPedgree1							*		
3 [CML144/SNSYNF2[N3/TUX-A-90]-102-1-2-2-BSR-B^4]B-2-6-BBE									
4 [(8703687923)x-800-3-1-Sn/GQL5]B-49-2-2-1-3-B^4									
5 CML44/CML395/[89[G27/TEWTSRPoo]#-278-2-X-3][COMPE2/P43SR//COMPE2]F#-20-1-1]B-32-2-B-4-#-BB									

List

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1 COLUMN	FCODE	FNAME	FFMT	FDESC									
2 StockID	SCODE	STOCK CODE	-	-									
3 Name	NCODE	NAME CODE	-	-									
4													
5													

List

A	B	C	D
1 DESIGNATION	SCODE	NCODE	RO
2 BreedersPedgree1	StockID	Name	
3 [CML144/SNSYNF2[N3/TUX-A-90]-102-1-2-2-BSR-B^4]B-2-6-BBE	V369-1	VL05166	
4 [(8703687923)x-800-3-1-Sn/GQL5]B-49-2-2-1-3-B^4	V392-1	VL05269	
5 CML44/CML395/[89[G27/TEWTSRPoo]#-273-2-X-B][COMPE2/P43SR//COMPE2]F#-20-1-1]B-32-2-B-4-#-BB	V400-1	VH051584	

List

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1 COLUMN	FCODE	FNAME	FFMT	FDESC									
2 Origin	ORIGIN	Seed source or origin	-	-									
3													
4													
5													

List

A	B	C	D
1 DESIGNATION	ORIGIN	RO	
2 BreedersPedgree1	Origin		
3 [CML144/SNSYNF2[N3/TUX-A-90]-102-1-2-2-BSR-B^4]B-2-6-BBE	HA05A-2154-1		
4 [(8703687923)x-800-3-1-Sn/GQL5]B-49-2-2-1-3-B^4	MZ05B-2257-1		
5 CML44/CML395/[89[G27/TEWTSRPoo]#-273-2-X-B][COMPE2/P43SR//COMPE2]F#-20-1-1]B-32-2-B-4-#-BB	HA07A-N2172-1/2		

A snapshot of a List Template.

CIMMYT MR

Extending the File Conversion Wizard

- The File Conversion Wizard was originally developed to help new users of ICIS in migrating their already existing experiment data (or studies) stored in Excel files into the ICIS database without retying.
- Until, it was recently reprogrammed to handle the conversion of an Excel file containing germplasm entries into a List Template.



Converting to a Study or List Template

Book5

	A	B	C	D	K	N	Q	R
1	SI Num	StockID	Name	BreedersPedigree	Origin	Memo1	Comments1	Comments2
20	INVENTORY VIVEK QPM							
21								
22	SI Num	Stock ID	Name	Pedigree	Origin			
23								
24								
25	85	V359-1	VL05466	[CML144 SNSYNF2[N3 TUX-A-90]-102-1-2-2-BSR-B*4]-B-2-6-BBB	HA05A-2154-1			
26	378	V392-1	VL05259	[(87036 87923)-x-800-3-1-8n GQL5]-B-49-2-2-1-3-B*4	MZ05B-2357-1			
27	1501	V490-1	VL051584	CNL444 CNL395/[89[G27 TEWTISRPool]=-278-2-X-	HA07A-N2172-1/2			
28	6174	V510-1		(WW01408-1-1-2-B*4-[CML205 CML182]-B-47-1-2//Comp4/1Q)-#	MZ07B-N2282-1			
29	6193	V511-1/1	VL06848	[INBRED-A INBRED-B]-BBB-1-BB	MZ07B-N2205A-1			
30	6193	V511-1/2	VL06848	[INBRED-A INBRED-B]-BBB-1-BB	MZ07B-N2205A-1			
31	9149	V530-1	VL071708	((CML202 CML144)F2-1-1-3-B-1-B*6 CML511)-B	MZ07B-N2265-1			
32	4776	V493-1	VL071707	QSyn071F1-B	HA07A-N2158A-1			
33	78	V356-2	VL0510635	[(87036 87923)-x-800-3-1-X-1-BB-1-1-1-B [MSRXG9]C1F2-205-1(OSU23))-3-3-X-X-1-	HA05A-2104-2			
34	6175	V510-2		(WW01408-1-1-2-B*4-[CML205 CML182]-B-47-1-2//Comp5/2Q)-#	MZ07B-N2282-2			
35	4777	V493-2	VL071708	[[CML202 CML144]F2-1-1-3-B-1-B*6 CML511]-B	HA07A-N2158A-2			
36	39	V327-3	VL05468	[CML144 SNSYNF2[N3 TUX-A-90]-102-1-2-2-BSR-B*4]-B-4-3-BB	MZ04B-2253-5			
37	119	V364-3	VL05356	[CML390 [CML390 GQL5]-B-2nx]-B-8-2-2-BBB	HA05A-2155-3			
38	255	V366-3	VL054907	[[[K64R G168R]-39-1 [K64R G168R]-20-2]-5-1-2-B*4 CML390]-B-39-2-B-4-#-1-B*4	HA05A-2107-3			
39	390	V402-3	VL051847	[Ent52:928EW1-2 [DMRESR-W]EarlySel-#L-2-1-B CML386]-B-22-1-B-4-#-1-	MZ05B-2274-5/6			
40	6178	V510-3		(CML144 [CML159 [CML159 [MSRXPOOL9]C1F2-205-1(OSU23))-5-3-X-X-1-BBJF2-	MZ07B-N2282-3			
41	6195	V511-3/1	VL06840	[[Ent320:928EW2-77 [DMRESR-W]EarlySel-#L-2-4-B CML390]-B-13-2-B-4-#-1-	MZ07B-N2205A-3			
42	6195	V511-3/2	VL06840	[[Ent320:928EW2-77 [DMRESR-W]EarlySel-#L-2-4-B CML390]-B-13-2-B-4-#-1-	MZ07B-N2205A-3			
43	9150	V530-3	VL075697	((CML202 CML144)F2-1-1-3-B-1-B*6 [CML390 [CML390 GQL5]-B-10nx]-B-6-1-	MZ07B-N2265-5			
44	4778	V493-3	VL071709	CompCML183SR-B	HA07A-N2158A-3			
45	258	V366-4	VL054612	[[[NAW5867 P30SR]-111-2 [NAW5867 P30SR]-25-1]-9-2-3-B-2-B CML388]-B-13-3-B-	HA05A-2107-4			

ICIS Workbook (IRIS) - Conversion Wizard

This tool converts a regular Excel file into the ICISWorkbook format.

Specify the row with the column headings and the first data row. Select also the index column w/c can identify all entries in the table.

Header Row: Row 22 -> SI, Stock, Name, ... Not on the list. Extend the list up to 50

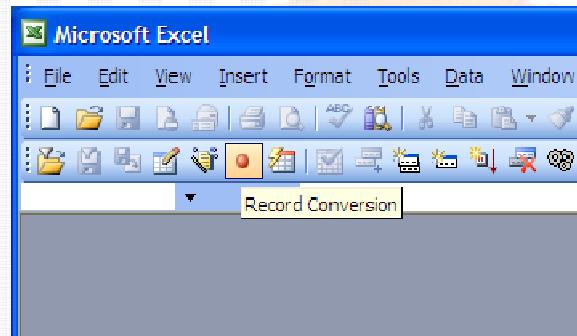
First Data Row: Row 25 -> 85, V359-1, VL05466, ...

Index Column: SI None. The total number of data rows is 383

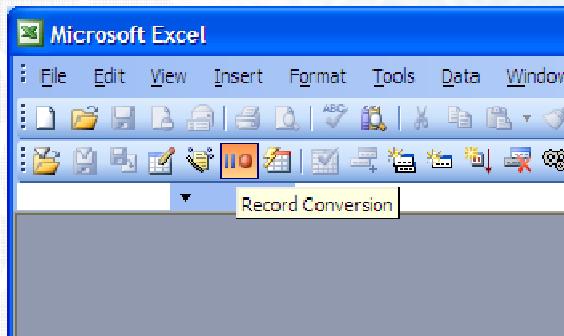
Convert data file to: Study List of Germplasm

Choose between a Study or a Germplasm List.

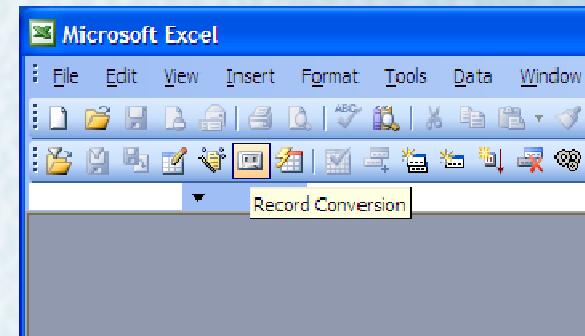
Extending the File Conversion Wizard: The Record Conversion Button



**Default icon,
no recorded parameters yet**



**Icon while the recording process
is taking place**



Icon when there's a recorded set of conversion parameters

	A	B	C	D	E	K	M	N	Q
SI	StockID	Name	BreedersPedigree			Origin	Memo1	Comments1	Comments2
20		INVENTORY VIVEK QPM							
21									
22	SI	Stock ID	Name	Pedigree		Origin	Memo	Comments	
23	Num								
24									
25	85	V5564-1	VL05466	{CML144-5N1NF2 [N3 TLX-A-90]:102-1-2-B,B*B*4}B-2-6-BBB		HA05A-2154-1			
26	378	V3924-1	VL05359	{[87304-8723-n-800-3-1-n]GQL-3}B-49-2-2-1-3-B4		MZ07B-2257-1			
27	1507	V651584-1		CML44-CML95-[89IGT]-TEWTWRred{P-20-1-2-1-2-3-2-4-BB}		HA07A-2312-1-2			
28	6714	V6714-1		B (CML44-P-2-1-2-1-2-3-2-4-BB) {CML182-1-B-4-1-2-1-2-3-2-4-BB}		MZ07B-2312-1			
29	6162	V6162-1		{BREED-A-BREED-3-BBB-BB}		MZ07B-2312-1			
30	5162	V5162-1		{BREED-A-BBB-BB}		MZ07B-2312-1			
31	9148	V9304-1	VL07178	{CML302 CML144[F2-1-1-3-B-6-CML511]-B}		MZ07B-2312-1			



File conversion in one click of a button.

Speaking of wizards...



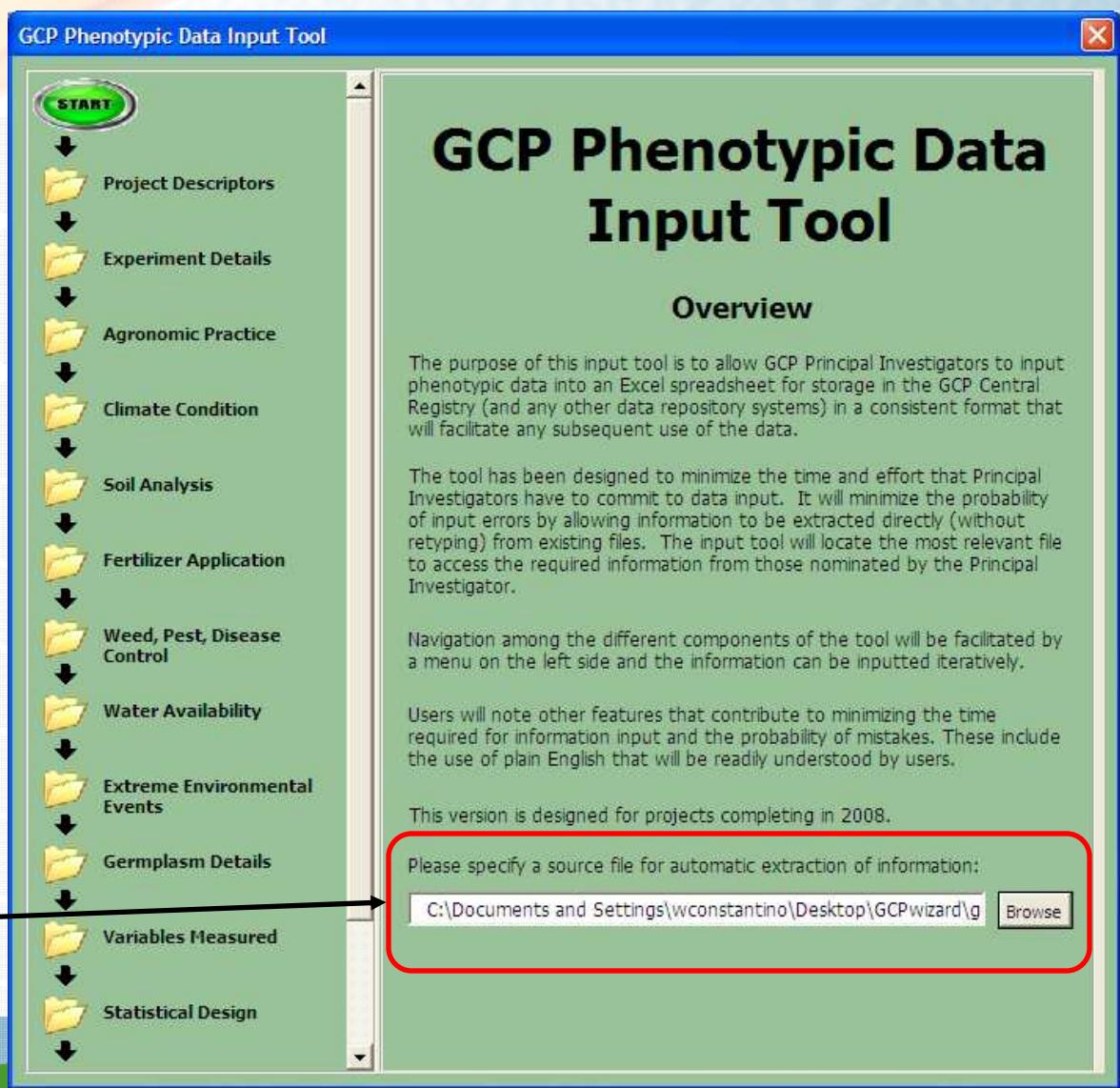
Another data capture wizard in ICIS Workbook which doesn't require any prior knowledge of ICIS:

Navigation Pane or “page-flipper”

- instant access to your desired information page

Automated data extraction

- by searching “**keywords**” within the nominated “**source data file**”, some entry fields would more likely be filled-up with possible data entries already



GCP Wizard Features...

IRRI

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ENTNO	REP	BLOCK	PLOT												
2	6	1	1	1											
3	1	1	1	2											
4	10	1	1	3											
5	15	1	1	4											

Entry:

6



Plot	Block	Replication	Entry
Randomization!\$D\$2:\$D\$51	Randomization!\$C\$2:\$C\$51	Randomization!\$B\$2:\$B\$51	Randomization!\$A\$2:\$A\$51

Plot: Randomization!\$D\$2:\$D\$51
 Block: Randomization!\$C\$2:\$C\$51
 Replication: Randomization!\$B\$2:\$B\$51
 Entry: Randomization!\$A\$2:\$A\$51

Add

Data Picker

- no more retyping, just select the cell that contains the needed data
- has three “fetch options” to choose from:
 - get cell content
 - get columns
 - get rows



Plot	Block	Replication	Entry
Randomization!\$D\$2:\$D\$51	Randomization!\$C\$2:\$C\$51	Randomization!\$B\$2:\$B\$51	Randomization!\$A\$2:\$A\$51

Add

Plot	Block	Replication	Entry
Randomization!\$D\$2:\$D\$51	Randomization!\$C\$2:\$C\$51	Randomization!\$B\$2:\$B\$51	Randomization!\$A\$2:\$A\$51

Add



CIMMYT^{MR}

GCP Wizard Features...



The Output:

- Output button generates the Excel file to be stored in the GCP Central Registry

This file can then be sent via email or uploaded on the GCP website

The file is also structured in the ICISworkbook format which can then be loaded directly to the user's local ICIS database

STUDY						
1	STUDY	GCP4000_Exp1				
2	TITLE	First Experiment				
3	PMKEY	0				
4	OBJECTIVE	Genome scanning of F5 progenies of Vandana x Moroberekan				
5	START DATE	0				
6	END DATE	0				
7	STUDY TYPE	E				
8	CONDITION	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE
10	INVESTIGATOR	INVESTIGATOR	Name	Principal Investigator	C	STUDY
11	PI_EMAIL	INVESTIGATOR	Email Address	Pi's Email	C	STUDY
12	INSTITUTION	INSTITUTION	Name	Pi's Institution	C	International Rice Res
13	GCP_ID	PROJECT	Number	GCP Assigned	N	STUDY
14	GCP_TITLE	PROJECT	Name	GCP assigned	C	STUDY
15	ENVIRONMENT_TYPE	EXPERIMENT TYPE	Type	Not Specified	C	Field
16	YEAR	YEAR	Year (YYYY)	Not Specified	N	2006
17	SEASON	SEASON	Code	Not Specified	C	DS
18	COUNTRY	LOCATION	Country Name	Experiment Site	C	Philippines
19	COUNTRY_CODE	LOCATION	FAO Country Code	Experiment Site	C	PHL
20	STATE/PROVINCE	LOCATION	State/Province Name	Experiment Site	C	Nueva Ecija
21	TOWN	LOCATION	Town Name	Experiment Site	C	Munoz
22	SITE_NAME	LOCATION	Site Name	Experiment Site	C	PhilRice
23	LONGITUDE	LOCATION	Longitude	Experiment Site	C	STUDY
24	LATITUDE	LOCATION	Latitude	Experiment Site	C	-
25	ALTITUDE	LOCATION	Altitude	Experiment Site	C	STUDY
26	ECOSYSTEM	ECOSYSTEM	Type	Experiment Site	C	upland
27	PLANTING RATE	PLANTING RATE	Planting Rate	Not Specified	N	STUDY
28	PLT_GAP	PLANT GAP	Distance between plants	meters	N	STUDY
29	PLT_GAP	PLANT GAP	Distance between rows	meters	N	STUDY
30	PILOT_LENGTH	PILOT LENGTH	Plot length	meters	N	STUDY
31	PILOT_BREADTH	PILOT BREADTH	Plot breadth	meters	N	STUDY
32	PILOT_GAP	PILOT GAP	Distance between plots	meters	N	STUDY
33	STATISTICAL DESIGN	STATISTICAL DESIGN	Type	Not Specified	C	Alpha Lattice
34	FACTOR	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE
36	PILOT_BLOCK	Plot Number	Field No.	Field Layout	N	PILOT_BLOCK
37	BLOCK	Block Number	Block No.	Field Layout	N	BLOCK
38	REP	Replication	Replication No.	Field Layout	N	REP
39	ENTNO	Entry Number	CULTIVAR	Entry No.	N	ENTNO
40	GERMLPLASM	Germlasm Identifier	CULTIVAR	Germlasm ID	PI assigned	N
41	ACCCNO	Genebank Accession	CULTIVAR	Accession No.	Not Specified	N
43	CONSTANT	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE
44	VARIATE	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE
46	VIG-B-EG	Early vegetative stage	PLANT-1-IGOR	SES Score Vigor 5pt	12-DAT	
47	DAS-BEG-FLW	No. of days of first flower	DAYS TO FLOWER	No. of days	Not Specified	
48	DAS-50%-FLW	No. of days of 50% fl	DAYS TO FLOWER	No. of days	50% Flowering	
49	PLT-HT	Plant height at mature	PLANT HEIGHT	cm	At Maturity (Stages 7-9)	
50	PAN-1LM	Number of panicles	PANICLE NUMBER	No. of panicles per s	One Meter Length (RL-GIE)	
51	YLD-R	Visual yield rating (1=GRAN YIELD)	VISUAL RATING 9PT	Not Specified		

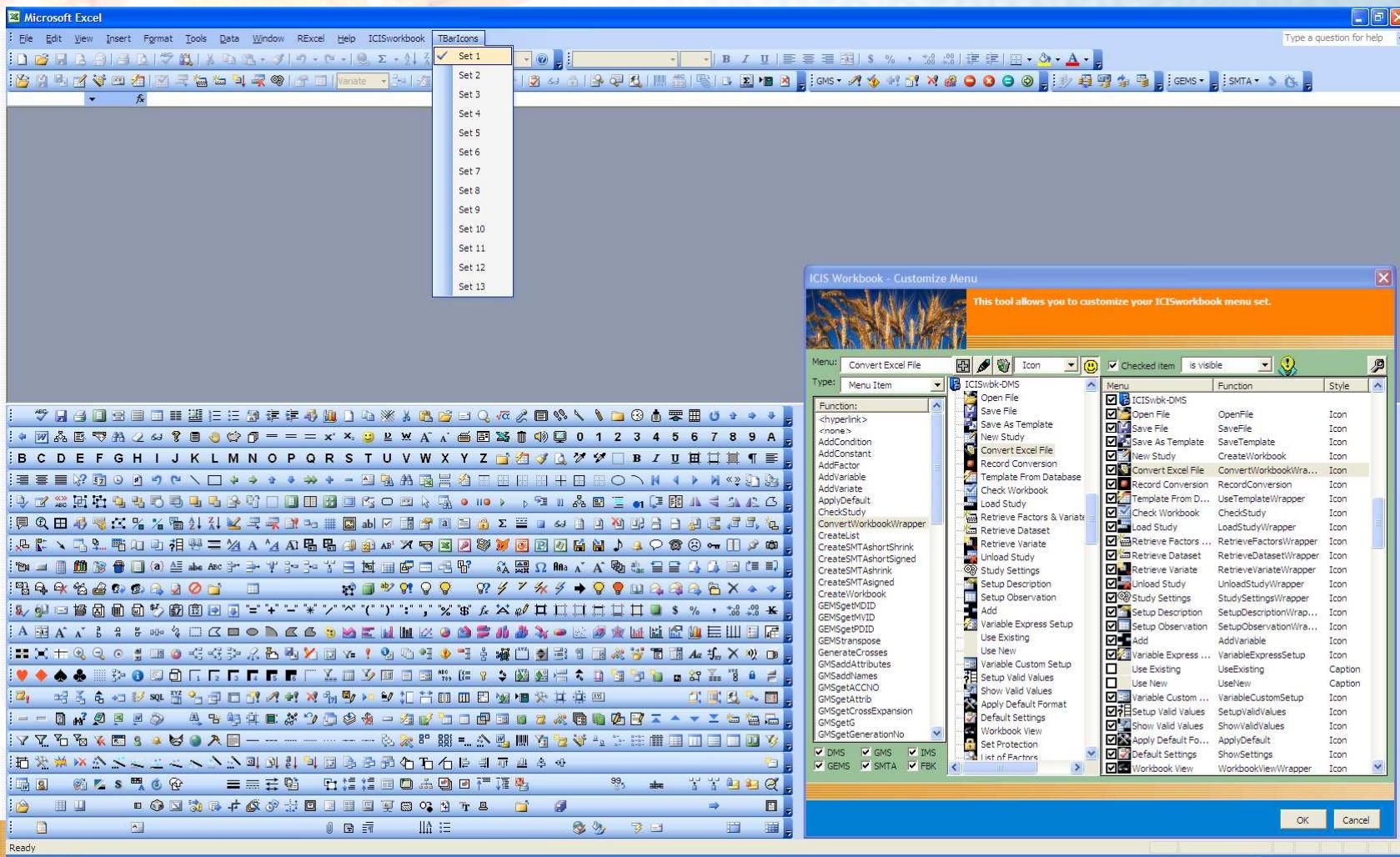
EVALUATION-Des / EVALUATION-Obs / CLIMATE-Des / CLIMATE-Obs / RAINFALL-Des / RAINFALL-Obs / IRRIGATION-Des / IRRIGATION-Obs / FERTILIZER-Des / FERTILIZER-Obs / PEST-Des / PEST-Obs / EVENTS-Des / EVENTS-Obs / METHOD-Des / METHOD-Obs

IRRIGATION-Obs / FERTILIZER-Des / FERTILIZER-Obs / PEST-Des / PEST-Obs / EVENTS-Des / EVENTS-Obs / METHOD-Des / METHOD-Obs

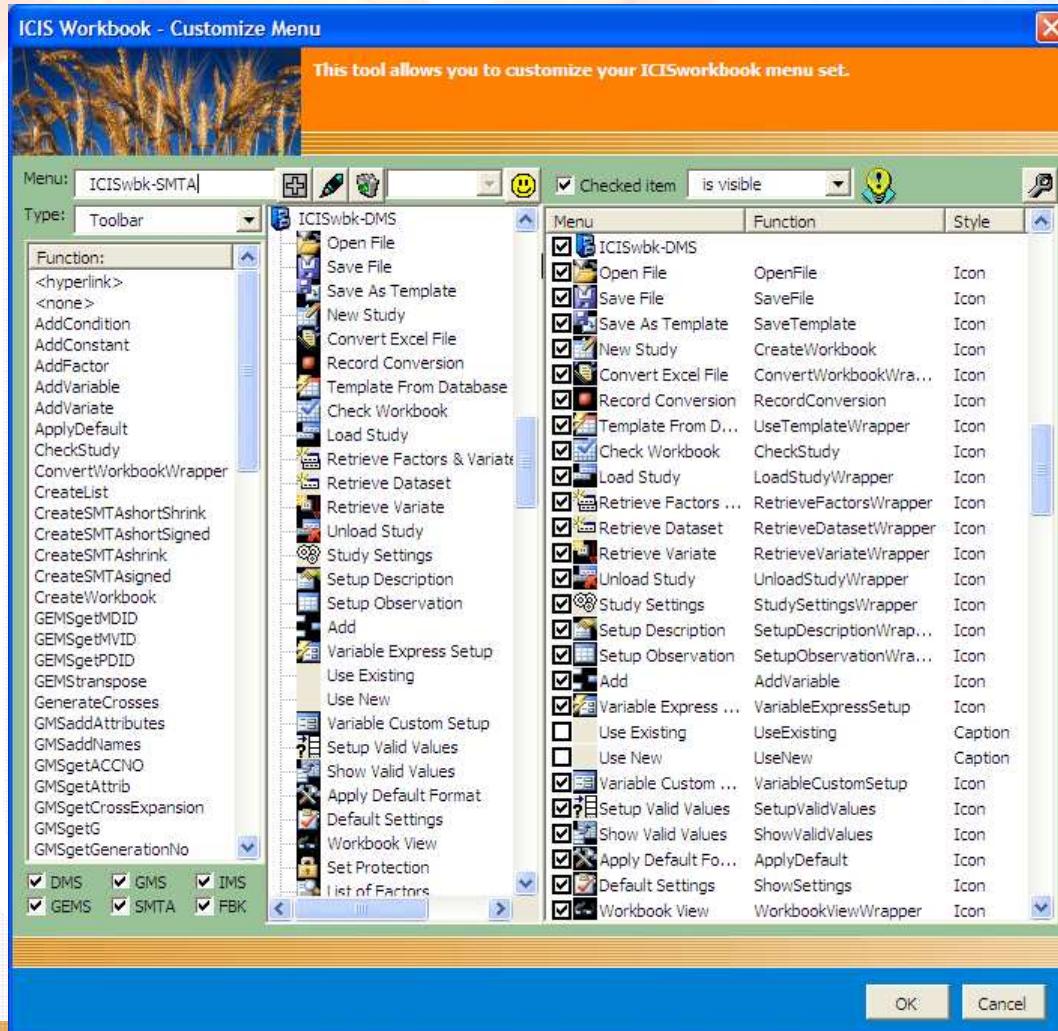
From Bug Report to Feature Request

- Shawn once again altered the course of history by posting a bug report in CropForge. ☺ He complained about an error occurring in generating the Workbook toolbar icons during startup.
- The temporary fix was to change the hardcoded icon FaceID and save the code. Until Arillet and Weng encountered the same error in India and it became apparent that there's a need for a configurable set of toolbar menus. Dr. Thomas Metz also brought the idea by showing a similar feature in R.

The Result: Menu Customization Interface



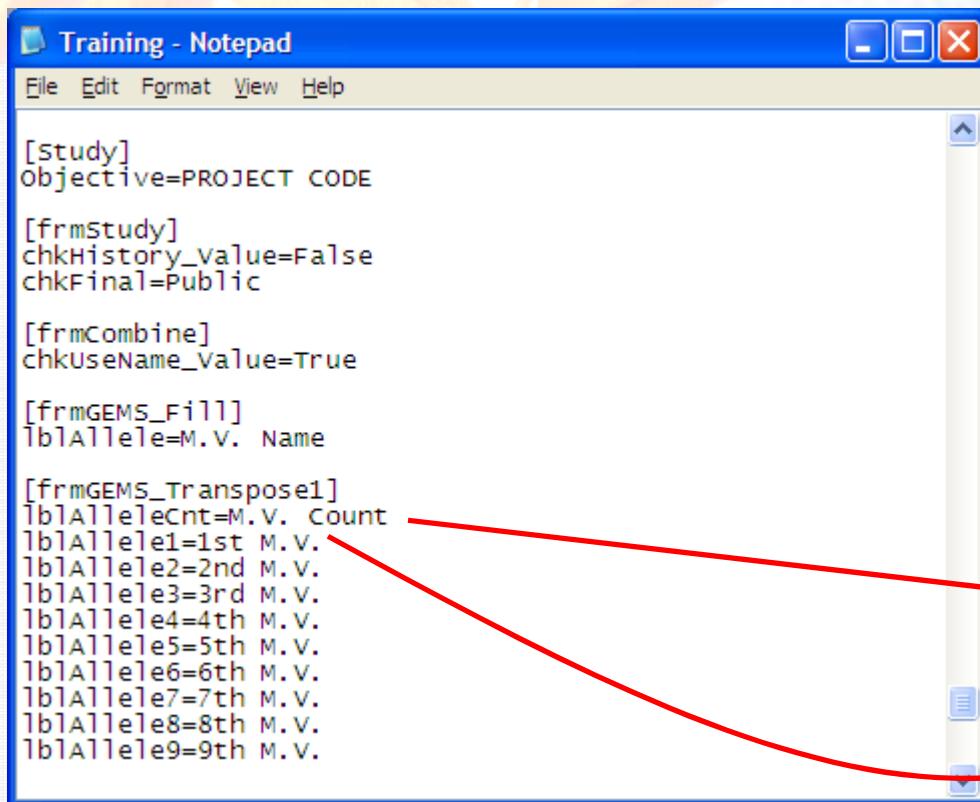
What is the benefit of the Menu Customization Interface?



Because ICIS Workbook is being developed in a general usage – oriented manner, there is an upsurge of functionalities that are not being used all the time and thus, as Dr. Ed Roumen says a while ago, complicates the user interface. ☺

But with the menu customization, you can show only the functions you need and more over, you can rewrite your own set of menus!

User Interface Customization



The screenshot shows a Windows Notepad window titled "Training - Notepad". The content is an INI-style configuration file:

```
[study]
Objective=PROJECT_CODE

[frmstudy]
chkHistory_Value=False
chkFinal=Public

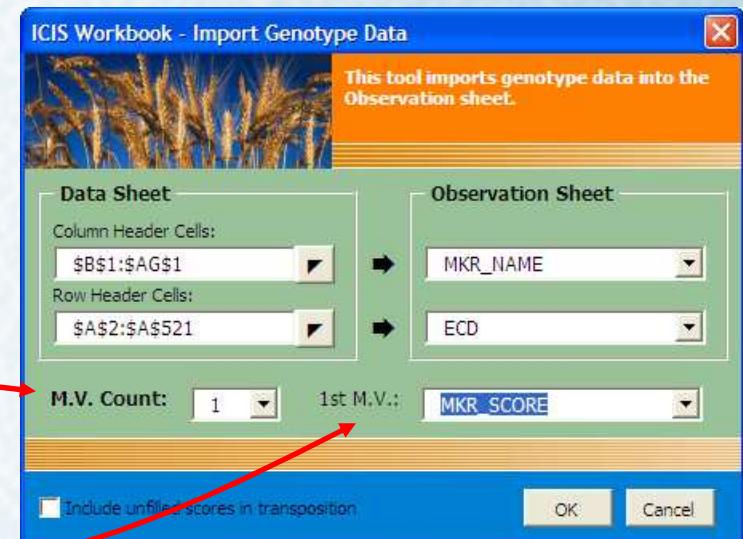
[frmCombine]
chkUserName_Value=True

[frmGEMS_Fill]
TblAllele=M.V. Name

[frmGEMS_Transpose1]
TblAlleleCnt=M.V. Count
TblAllele1=1st M.V.
TblAllele2=2nd M.V.
TblAllele3=3rd M.V.
TblAllele4=4th M.V.
TblAllele5=5th M.V.
TblAllele6=6th M.V.
TblAllele7=7th M.V.
TblAllele8=8th M.V.
TblAllele9=9th M.V.
```

A red arrow points from the "M.V. Count" entry in the INI file to the "M.V. Count" dropdown in the "Import Genotype Data" dialog box.

Portions of the forms in ICIS Workbook are also modified based on values in the INI file.



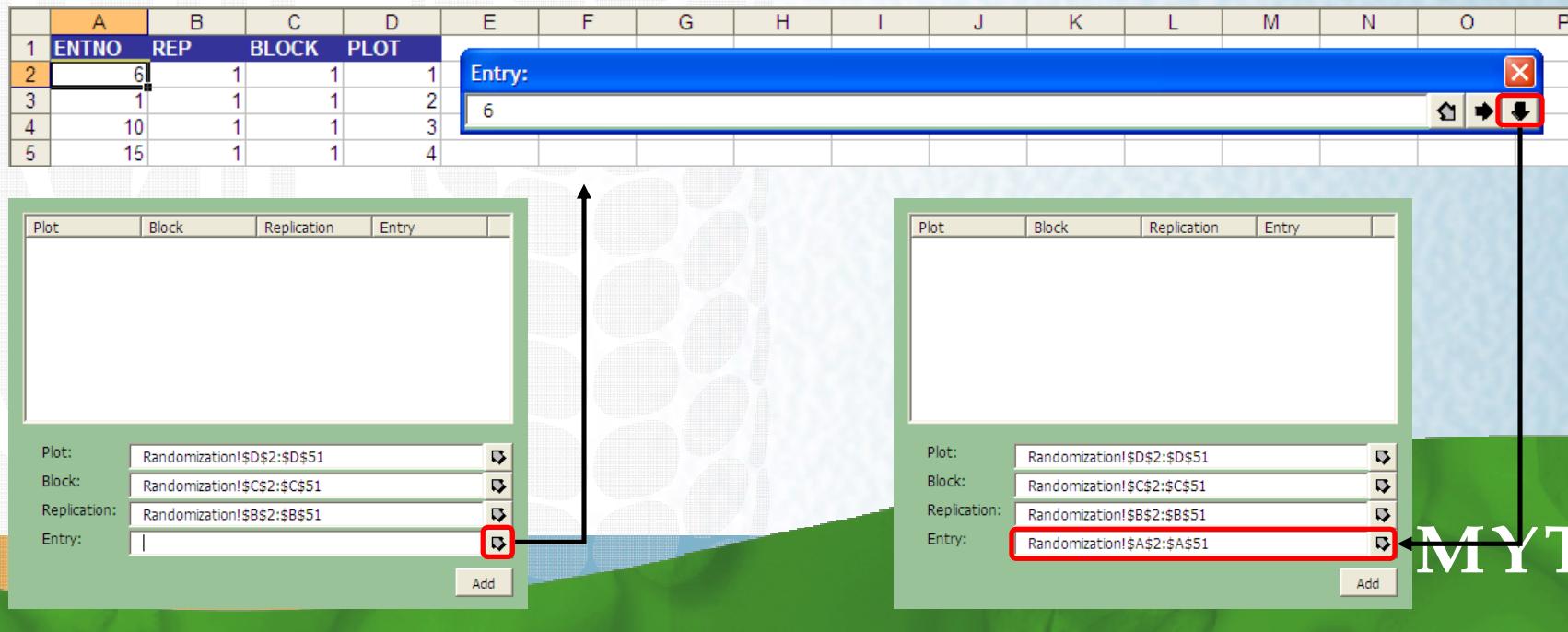
Sorry, but there is not yet an interface for doing this yourself. :-P

Fieldbook Customization

Every group has their own Fieldbook format. They can easily create one by formatting an Excel worksheet, prints it, then takes it out into the field for data collection.

I once created a macro that reads an Excel sheet and read its format properties such as cell sizes, borders, colors, cells contents, and addresses.

The idea therefore is to let the user design his Fieldbook format, then a function would read this formatted worksheet and a Data Picker –like functionality (as in the GCP Wizard) would record the cell addresses of those that needs to be filled up with information from the ICIS database.



The Maize Fieldbook – ICIS Workbook Integration Project

- The Maize Fieldbook is a fairly complete breeding software developed by a maize breeder (Dr. Vivek) for Maize Breeders (who are used to MS Excel).
- It has its own set of GMS, IMS, and of course Fieldbook functionalities, as well as Statistical Analysis functions.
- Because it is an Excel Add-in application similar to ICIS Workbook, it was thought that the fusion of these two applications is going to be a powerful product.

The Result: Complete ICIS Workbook

Seed Inventory Management

A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	AMOUNT	ROWTAG
2 CNA 4196	CNA 4196	HB001U	IURON12				
3 IDSA 113	IDSA 113	HB002U	IURON03				
4 FARO 41	IRAT 13/PALAWAN	HB003U	IURON15				
5 UPL RI 5	SIGADIS/BPI 76-1	HB004U	IURON07				
6 WAB 326-B-B-7-H1	TOX 1785-19-18/W	HB005U	IURON06				
7 WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11				
8 YUNLU 28	IDSA 6/WUNENG/H	HB007U	IURON04				
9 IRRI 132	UPL RI 5/IR 12979-	HB008U	IURON17				
10 IR 72768-12-1-1	IR 60080-46 A/IR 65	HB009U	U03DSOYT				
11 IR 72768-28-1-1	IR 60080-46 A/IR 65	HB010U	U03DSOYT				
12 IR 75502-24-1-1-B	B 6144 F-MR-6-0-0/	HB011U	U03DSOYT				
13 IR 75516-30-1-1-B	IR 53236-275-1/CT	HB012U	U03DSOYT				
14 IR 75516-56-1-1-B	IR 53236-275-1/CT	HB013U	U03DSOYT				
15 IR 75518-84-1-1-B	IR 60080-46 A/IR 53	HB014U	U03DSOYT				
16 IR 75531-31-1-2-B	IR 70360-54-1-B/W	HB015U	U03DSOYT				
17 IR 76561-AC 8-B	CT 13382-9-4-M/R	HB016U	U03DSOYT				
18							

A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	AMOUNT	ROWTAG
2 CNA 4196	CNA 4196	HB001U	IURON12	70732	1		
3 IDSA 113	IDSA 113	HB002U	IURON03	904702	2		
4 FARO 41	IRAT 13/PALAWAN	HB003U	IURON15	569031	3		
5 UPL RI 5	SIGADIS/BPI 76-1	HB004U	IURON07	406628	4		
6 WAB 326-B-B-7-H1	TOX 1785-19-18/W	HB005U	IURON06	418229	5		
7 WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11	905029	6		
8 YUNLU 28	IDSA 6/WUNENG/H	HB007U	IURON04	790394	7		
9 IRRI132	UPL RI 5/IR 12979-	HB008U	IURON17	204538	8		
10 IR72768-12-1-1	IR 60080-46 A/IR 65	HB009U	U03DSOYT	1161408	9		
11 IR72768-28-1-1	IR 60080-46 A/IR 65	HB010U	U03DSOYT	1161406	10		
12 IR 75502-24-1-1-B	B 6144 F-MR-6-0-0/	HB011U	U03DSOYT	1161458	11		
13 IR 75516-30-1-1-B	IR 53236-275-1/CT	HB012U	U03DSOYT	1161444	12		
14 IR 75516-56-1-1-B	IR 53236-275-1/CT	HB013U	U03DSOYT	1161445	13		
15 IR 75518-84-1-1-B	IR 60080-46 A/IR 53	HB014U	U03DSOYT	1161448	14		
16 IR75531-31-1-2-B	IR 70360-54-1-B/W	HB015U	U03DSOYT	1161440	15		
17 IR 76561-AC8-B	CT 13382-9-4-M/R	HB016U	U03DSOYT	1161327	16		
18							

Germplasm Management

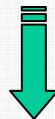
A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	AMOUNT	ROWTAG
2 CNA 4196	CNA 4196	HB001U	IURON12	70732	1		
3 IDSA 113	IDSA 113	HB002U	IURON03	904702	2		
4 FARO 41	IRAT 13/PALAWAN	HB003U	IURON15	569031	3		
5 UPL RI 5	SIGADIS/BPI 76-1	HB004U	IURON07	406628	4		
6 WAB 326-B-B-7-H1	TOX 1785-19-18/W	HB005U	IURON06	418229	5		
7 WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11	905029	6		
8 YUNLU 28	IDSA 6/WUNENG/H	HB007U	IURON04	790394	7		
9 IRRI132	UPL RI 5/IR 12979-	HB008U	IURON17	204538	8		
10 IR72768-12-1-1	IR 60080-46 A/IR 65	HB009U	U03DSOYT	1161408	9		
11 IR72768-28-1-1	IR 60080-46 A/IR 65	HB010U	U03DSOYT	1161406	10		
12 IR 75502-24-1-1-B	B 6144 F-MR-6-0-0/	HB011U	U03DSOYT	1161458	11		
13 IR 75516-30-1-1-B	IR 53236-275-1/CT	HB012U	U03DSOYT	1161444	12		
14 IR 75516-56-1-1-B	IR 53236-275-1/CT	HB013U	U03DSOYT	1161445	13		
15 IR 75518-84-1-1-B	IR 60080-46 A/IR 53	HB014U	U03DSOYT	1161448	14		
16 IR75531-31-1-2-B	IR 70360-54-1-B/W	HB015U	U03DSOYT	1161440	15		
17 IR 76561-AC8-B	CT 13382-9-4-M/R	HB016U	U03DSOYT	1161327	16		
18							

Data Management

A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	AMOUNT	ROWTAG
2 CNA 4196	CNA 4196	HB001U	IURON12	70732	1		
3 IDSA 113	IDSA 113	HB002U	IURON03	904702	2		
4 FARO 41	IRAT 13/PALAWAN	HB003U	IURON15	569031	3		
5 UPL RI 5	SIGADIS/BPI 76-1	HB004U	IURON07	406628	4		
6 WAB 326-B-B-7-H1	TOX 1785-19-18/W	HB005U	IURON06	418229	5		
7 WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11	905029	6		
8 YUNLU 28	IDSA 6/WUNENG/H	HB007U	IURON04	790394	7		
9 IRRI132	UPL RI 5/IR 12979-	HB008U	IURON17	204538	8		
10 IR72768-12-1-1	IR 60080-46 A/IR 65	HB009U	U03DSOYT	1161408	9		
11 IR72768-28-1-1	IR 60080-46 A/IR 65	HB010U	U03DSOYT	1161406	10		
12 IR 75502-24-1-1-B	B 6144 F-MR-6-0-0/	HB011U	U03DSOYT	1161458	11		
13 IR 75516-30-1-1-B	IR 53236-275-1/CT	HB012U	U03DSOYT	1161444	12		
14 IR 75516-56-1-1-B	IR 53236-275-1/CT	HB013U	U03DSOYT	1161445	13		
15 IR 75518-84-1-1-B	IR 60080-46 A/IR 53	HB014U	U03DSOYT	1161448	14		
16 IR75531-31-1-2-B	IR 70360-54-1-B/W	HB015U	U03DSOYT	1161440	15		
17 IR 76561-AC8-B	CT 13382-9-4-M/R	HB016U	U03DSOYT	1161327	16		
18							

The Result: Complete ICIS Workbook

Data Management



Fieldbook Management

- Generate Statistical Design
- Create Field Map Layout
- Print Labels
- Prepare Handheld
- Prepare Fieldbook



Data Management

- Handheld Entry
- Barcode Entry
- Lookup List Entry
- File Conversion Wizard
- GCP Wizard
- Ontology Smart Search
- Valid Values Definition
- Data Validation

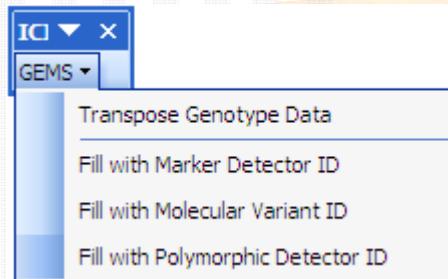


Statistical Analysis and Reports

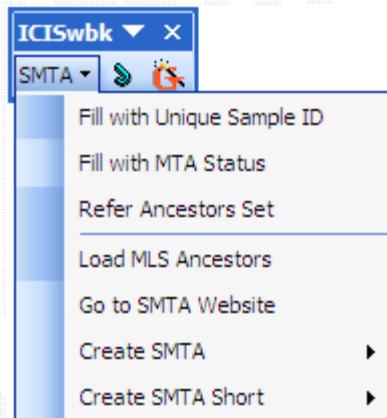
- Shopping Cart Query Builder
- Statistical Analysis
- Chart Generation

The Result: Complete ICIS Workbook

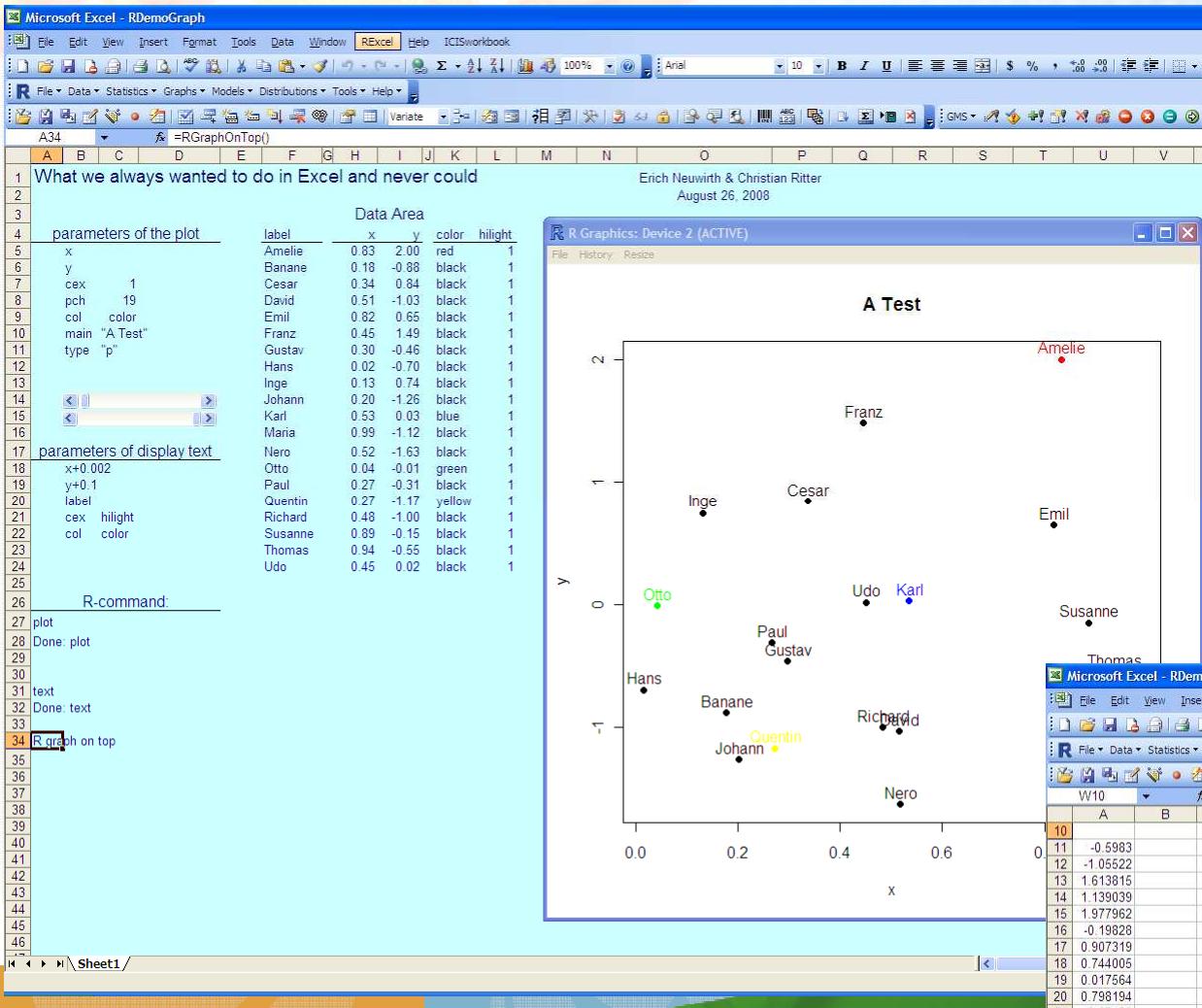
Genetic Management



Standard Material Transfer Agreement Management



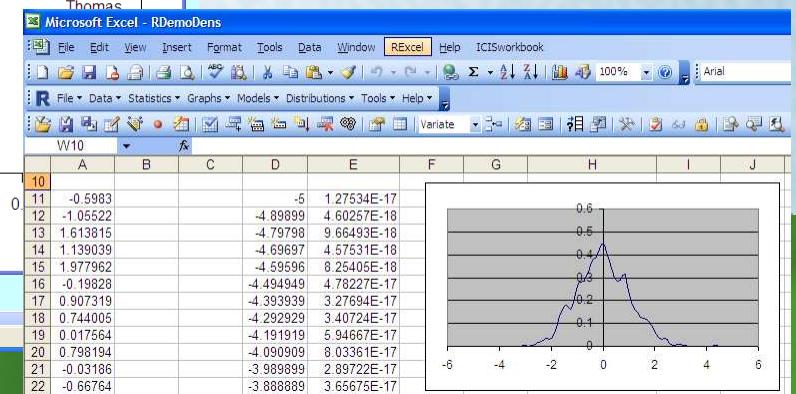
Integration of the R Statistical Package into the ICIS Workbook



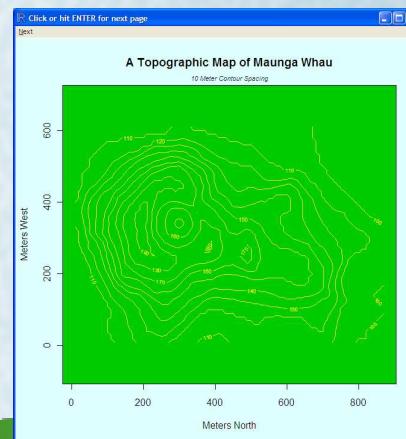
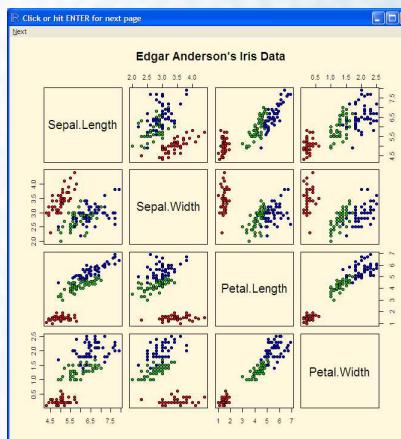
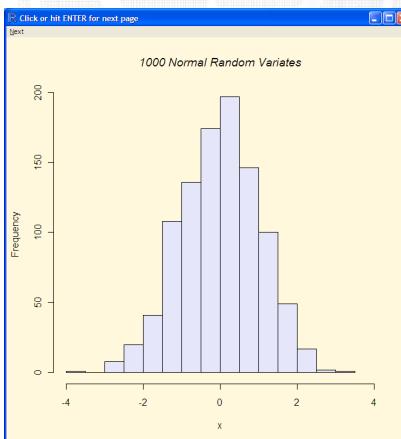
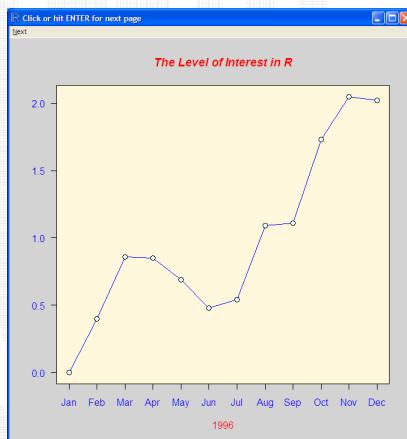
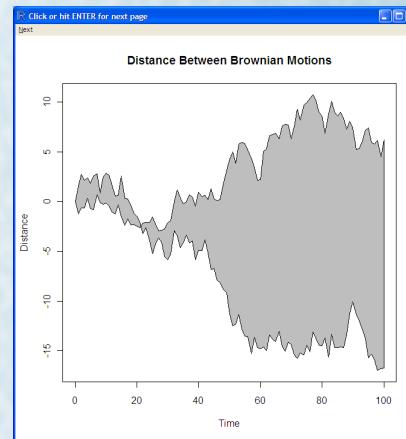
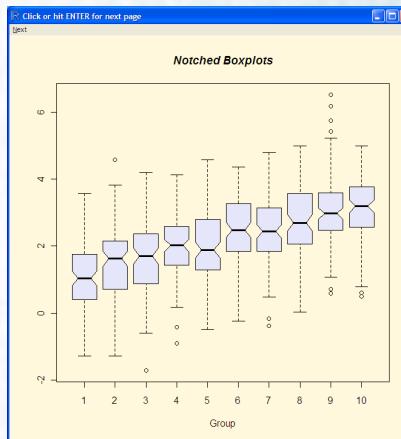
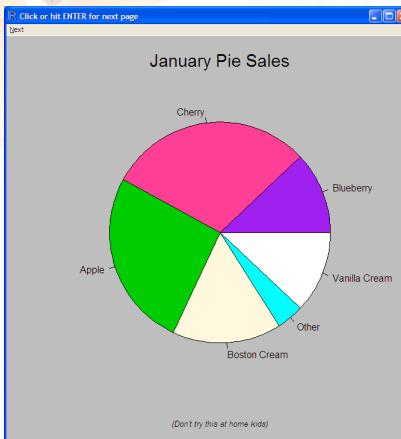
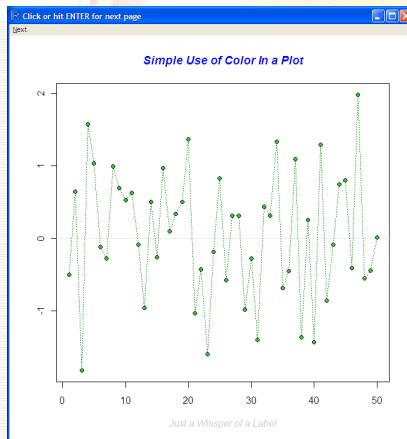
RExcel is an Excel Add-in written by Erich Neuwirth.

It makes the R Libraries accessible inside Excel which gives it all the statistical powers and more (because R is no longer just a statistics package) of R.

The ICIS Workbook will be borrowing the techniques used by RExcel to connect to R.



Rich Graphical Reporting in R that can be integrated into the ICIS Workbook



Closing: Acknowledgement

Cheers to a great collaboration between users, developers, donors (of course), and all stake holders in the ICIS Community! ☺

May we grow bigger and stronger!

