

The IRRI logo consists of the letters "IRRI" in a green, serif font. To the right of the text is a horizontal bar divided into two sections: a yellow section on the left and a green section on the right.

IRRI

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:

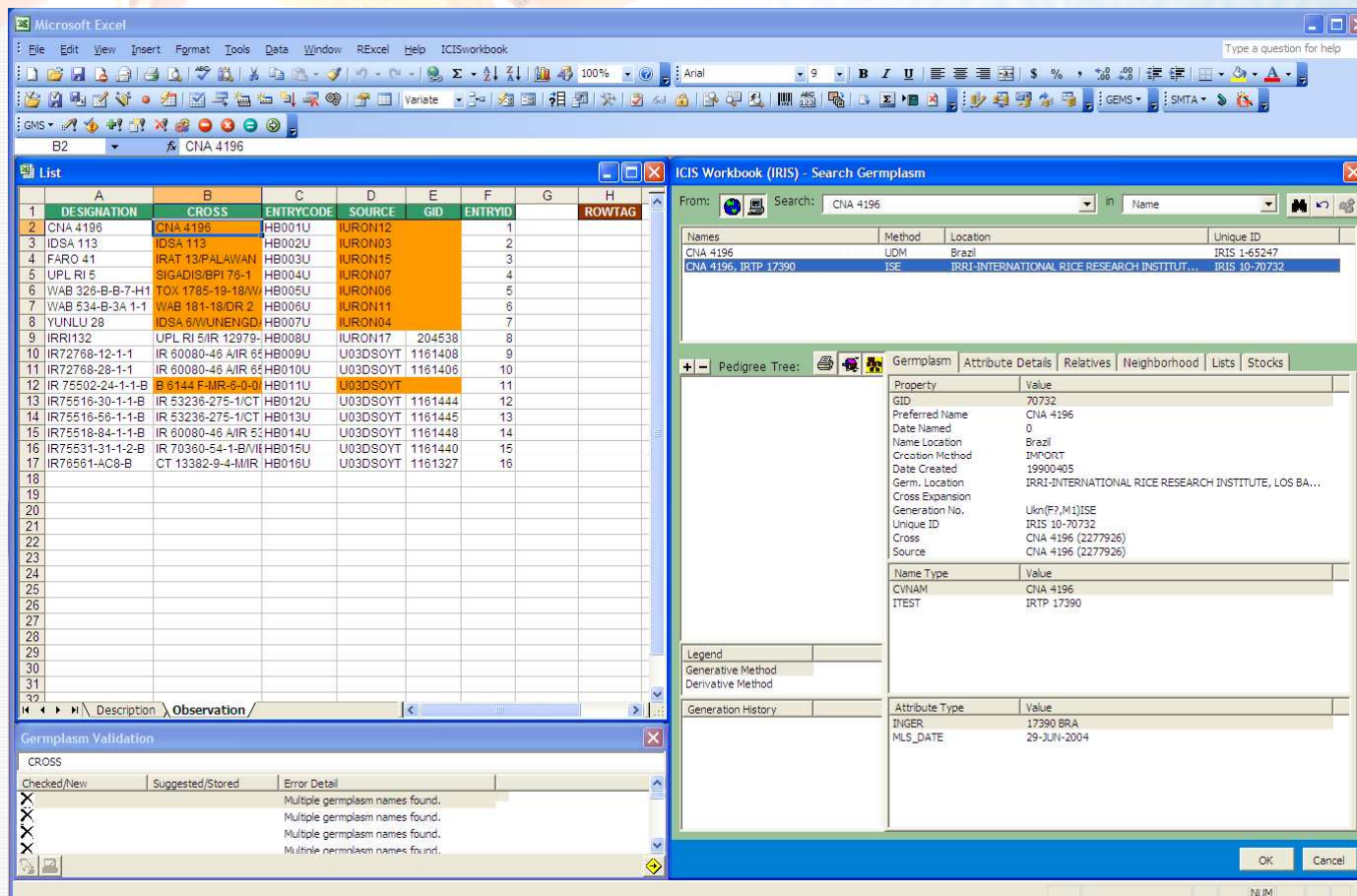
“It would be nice to have a function where you identify which column has the line designation and it will search the GMS and retrieve the GID for the lines in that column...”

...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)

1. Start with a list of germplasm.
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.



The screenshot shows a Microsoft Excel spreadsheet on the left and the ICIS Workbook (IRIS) Search Germplasm interface on the right. The Excel spreadsheet contains a list of germplasm entries with columns for Designation, Cross, Entry Code, Source, GID, Entry ID, and Row Tag. The ICIS interface shows a search for 'CNA 4196' and displays a table of results with columns for Names, Method, Location, and Unique ID. Below the search results, there is a detailed view of the selected germplasm entry, showing its properties and attribute details.

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

Property	Value
GID	70732
Preferred Name	CNA 4196
Date Named	0
Name Location	Brazil
Creation Method	IMPORT
Date Created	19900405
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

Attribute Type	Value
INGER	17390 BRA
MLS_DATE	29-JUN-2004

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

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.
5. Automated and manual tools are provided for defining the generation and parental tree.

Microsoft Excel

A	B	C	D	E	F	G	H
DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID		ROWTAG
1	CNA 4198	CNA 4198	HB001U	IURON12	70732		1
2	IDSA 113	IDSA 113	HB002U	IURON03	904702		2
3	FARO 41	IRAT 13/PALAWAN	HB003U	IURON15	569031		3
4	UPL RI 5	SIGADI/S/BI 75-1	HB004U	IURON07	406826		4
5	WAB 328-B-B-7-H1	TOX 1795-19-18/W	HB005U	IURON06	418229		5
6	WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB008U	IURON11	905029		6
7	YUNLU 28	IDSA 8/WUNENGD/HB007U	IURON04	790394			7
8	IRRI 132	UPL RI 6/IR 12979-HB008U	IURON17	204538			8
9	IR 72768-12-1-1	IR 60080-46 AJIR 65 HB009U	U03DSOYT	1181408			9
10	IR 72768-28-1-1	IR 60080-46 AJIR 65 HB010U	U03DSOYT	1181406			10
11	IR 75602-24-1-1-B	B 6144 F-MR 6-0-0/HB011U	U03DSOYT	1181458			11
12	IR 75616-30-1-1-B	IR 53236-275-1CT HB012U	U03DSOYT	1181444			12
13	IR 75616-56-1-1-B	IR 53236-275-1CT HB013U	U03DSOYT	1181445			13
14	IR 75618-84-1-1-B	IR 60080-46 AJIR 53 HB014U	U03DSOYT	1181448			14
15	IR 75631-31-1-2-B	IR 70360-54-1-B/IR HB015U	U03DSOYT	1181440			15
16	IR 75651-AC 8-B	CT 13382-9-4-MIR HB018U	U03DSOYT	1181327			16
17	X8971B-15						17
18	NewRice						18
19	Y1123-B-PK-3-4-6						19

ICIS Workbook (IRIS) - Input Germplasm

X8971B-15

Edit Pedigree

Female: X8971B

Male:

Pedigree Tree:

- X8971B-15
 - X8971B
 - Rough/3*IR72
 - Rough/2*IR72
 - Rough/IR72
 - Rough
 - IR 72
 - IR 72

Property Table:

Property	Value
Designation	X8971B-15
Name Type	DERIVATIVE NAME
Date Named	
Name Location	Unknown
Name Reference	
Creation Method	SINGLE PLANT SELECTIO...
Date Created	
Germ. Location	Unknown
Germ. Reference	

Germplasm Validation

CROSS	Checked/New	Suggested/Stored	Error Detail
X8971B-15	X		Germplasm name doesn't exist yet.
NewRice	X		Germplasm name doesn't exist yet.
Y1123-B-PK-3-4-6	X		Germplasm name doesn't exist yet.

Name Type: CRSNM Apply to: Selected All

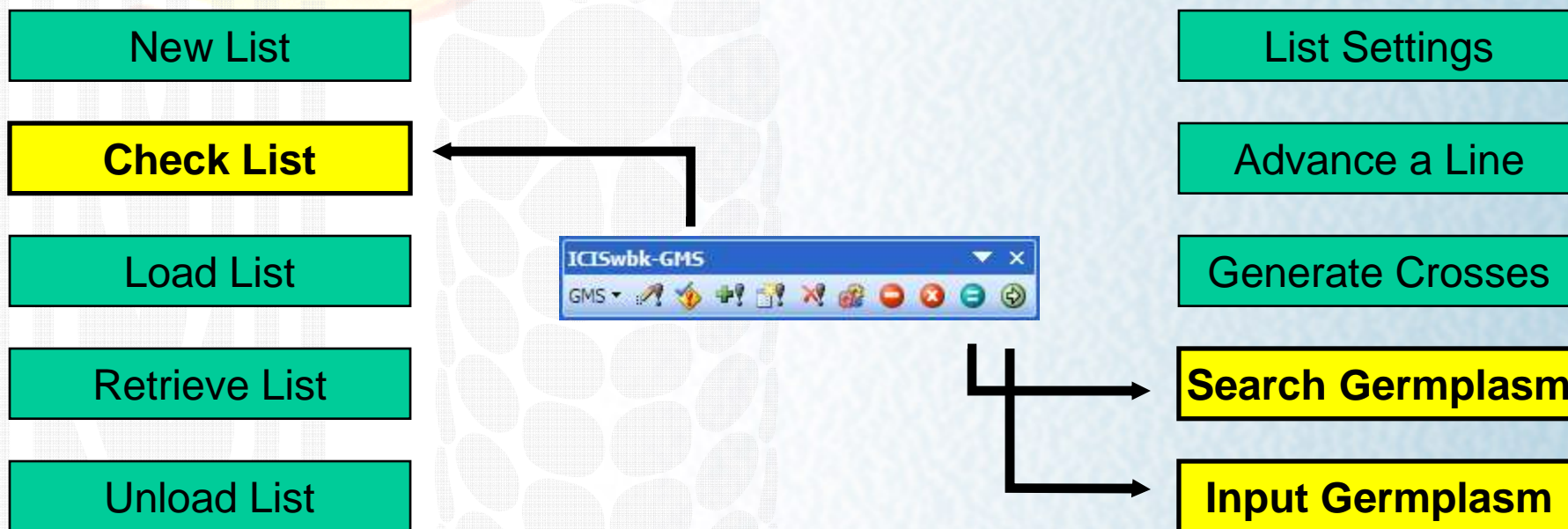
Buttons: Add each Germplasm, Add Germplasm Set, Upload Entire Batch, Edit each Germplasm, OK, Cancel

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.

ICIS Workbook - Search Germplasm

From: Search: IR 43 in Name

Names	Method	Location	Unique ID
IR 43, IRGC 32615, IR305-3-17/IR66...	ISE	IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...	IRIS 10-675460
IR 43, IRGC 117005, T0828/2005, CI...	ISE	IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...	IRIS 112-516262
IR 43	ISE	CIAT - CENTRO INT'L DE AGRI. TROPICAL, CALI	IRIS 109-4432
IR 43, TOS 9825	ACL	IITA-INTERNATIONAL INSTITUTE OF TROPICAL A...	IRIS 77-19828
IR 43, BCF 174, ACC 241	ACL	IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...	IRIS 1-32278
IR 43, ACC 312	ACL	IRRI-INTERNATIONAL RICE RESEARCH INSTITUT...	IRIS 1-31034
IR 43, SAAVEDRA 5	VCR	BOLIVIA	IRIS 3-5838

Pedigree Tree:

Germplasm Attributes Relatives Neighborhood Lists Stocks

Attribute Type	Value
ISOVG	IRGC 32615 ;1
COLL	IRGC 32615 ;O. SATIVA;;;;PHL
IPSTAT	FAO (9/14/1994)
ORI_COUN	PHILIPPINES
MLS_DATE	29-JUN-2004
SPP_CODE	5
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
TAXNO	2832

COLL - GERmplasm COLLECTION ATTRIBUTE

Attribute	Value
ACCNO	IRGC 32615
SPECIES	O. SATIVA
MISSCODE	
COLLECN	
DCCODE	
SOURCE	
DISO	PHL

OK Cancel

ICISwbk-GMS Features...



The screenshot shows the 'ICIS Workbook (IMIS) - Input Germplasm' window. At the top, the pedigree ID is 'CML444/CML395//[89[G27/TEWTSRPool]]#-278-2-X-B/[COMPE2/P43SR//COMPE2]F#-20-1-1]-B-32-2-B-4-#-B-B'. Below this, the 'Edit Pedigree' section has three rows: 'Ferrales' (CML444/CML395), 'Male' (checked), and a third row with a complex ID. The 'Pedigree Tree' on the left shows a hierarchical structure of individuals. The 'Standardization' tab is active, displaying a table of replacement rules:

Replace	With
<input checked="" type="checkbox"/> (space)	
<input checked="" type="checkbox"/> ,	
<input checked="" type="checkbox"/> ..	
<input checked="" type="checkbox"/> -b	-B
<input checked="" type="checkbox"/> -x	-X
<input checked="" type="checkbox"/> -BB	-B-B
<input checked="" type="checkbox"/> -B-B-B	-B*B
<input checked="" type="checkbox"/> -B*B	-B-B-B
<input checked="" type="checkbox"/> -B*B^3	-B-B-B
<input checked="" type="checkbox"/>)A)-A
<input checked="" type="checkbox"/> A*Z	A/Z
<input checked="" type="checkbox"/> A^Z	A/Z
<input checked="" type="checkbox"/> POPULATION	P
<input checked="" type="checkbox"/> POP-	P

An 'Edit Entry' dialog is open for 'POPULATION', showing 'Replace: POPULATION' and 'With: P'. At the bottom, there are buttons for 'Add each Germplasm', 'Add Germplasm Set', 'Upload Entire Batch', and 'Edit each Germplasm', along with 'OK' and 'Cancel' buttons.

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)/CML451	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)/CML144	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-B-1-1-1/CML491)	23218	0	0
452331	108341	5	1	4	((CL-02134*(CL-04351)-B-B-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	87487	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	((Puer5xCML413)/CL-G250/((22-1-1-1-2-B-B/	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	((200-3/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-E x P84c1 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)-5-3-2-1-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-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...



The screenshot displays the ICISwbk-GMS software interface. On the left, a 'List Explorer' pane shows a hierarchical tree of folders for years (1998-2005) and various germplasm sets (e.g., INGER NURSERY, ACLOW, ACDSULF, ACDUPL, AERON, BRSPOT). The main window shows a 'List' table with columns: DESIGNATION, CROSS, ENTRYCODE, SOURCE, GID, ENTRYID, and ROWTAG. Row 18 is highlighted, showing 'LOCAL CHECK' with entry code 'LOCAL CHECK' and source 'ACDLOW 1991'. On the right, the 'Generate Crosses' dialog box is open, showing a list of 'Female Parent' entries: BOULOUF, BW 298-2, BW 309-4, CISANGGARUNG, DEEPAK, and IFMO RFSAR. Below this, there are fields for 'Designation', 'List Entry', 'Value', 'Entry Code', and 'Source'. At the bottom of the dialog, there are tabs for 'Germplasm', 'Names', and 'Attributes', with the 'Attributes' tab selected, showing properties like 'Name Type' (CROSS NAME) and 'Creation Method' (SINGLE CROSS).

	A	B	C	D	E	F	G	H
	DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID		ROWTAG
1								
2	BOULOUF	BOULOUF	ACDLOW 1991	IRTP 14216	309030	1		
3	BW 298-2	BG 400-1/BW 254-1	ACDLOW 1991	IRTP 15976	415961	2		
4	BW 309-4	BW 297-2/BW 400	ACDLOW 1991	IRTP 15979	412599	3		
5	CISANGGARUNG	PELITA 1-1/WB 3063	ACDLOW 1991	IRTP 15166	309357	4		
6	DEEPAK	IR 661/LALKA MOTH	ACDLOW 1991	IRTP 16802	402942	5		
7	IR 24637-38-2-2-1	IR 5785-162-1-1-2	ACDLOW 1991	IRTP 12142	76856	6		
8	IR 26760-27-1-3-2	JAGANATH/IR 2797	ACDLOW 1991	IRTP 14322	59968	7		
9	IR 29137-16-1-6	T 100/BR 4/IR 42	ACDLOW 1991	IRTP 16193	75208	8		
10	IR 43522-37-3-3-3	KHAO DAWK MALI 1	ACDLOW 1991	IRTP 16815	77768	9		
11	IR 46292-24-2-2-1	JANAK/IR 60/IR 13	ACDLOW 1991	IRTP 15714	74991	10		
12	IR 46319-PMI 36-2	IR 19660-73-4-2-2/1	ACDLOW 1991	IRTP 16826	130402	11		
13	IR 46330-PMI 4-1-1	LEUANG YAI 148/IR	ACDLOW 1991	IRTP 16829	130515	12		
14	IR 48120-49-5-3-2	IR 5-114-3-1-2/IR 51	ACDLOW 1991	IRTP 15722	74938	13		
15	LEMO BESAR	LEMO BESAR	ACDLOW 1991	IRTP 12478	308152	14		
16	TETEP	TETEP	ACDLOW 1991	IRTP 463	4035	15		
17	IR 26	IR 24/TKM 6	ACDLOW 1991	IRTP 199	7845	16		
18	LOCAL CHECK	LOCAL CHECK	ACDLOW 1991	IRTP 3430	1846439	17		
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

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



ICISwbk-GMS Features...



ICIS Workbook Load List

This tool allows you to load a germplasm list to the GMS local database.

From: Search: in Name

	Name	Title
2000		
2001		
2002		
INGER NOMINATION LIST		
INGER NURSERY		
SEED HEALTH UNIT		
	NewList	NewList Title
	MEDDEEP-1981	MEDDEEP-1981
	MEDDEEP-1982	MEDDEEP-1982
	PEATSOIL-1981	Peat Soils Screening Set-1981
	PEATSOIL-1982	Peat Soils Screening Set-1982
	RAGST-1981	Ragged Stunt Screening Set-1981
	RAGST-1982	Ragged Stunt Screening Set-1982
	RLROT-2002	Rainfed Lowland Rice Observational Trial-2002
	RLROT-2003	Rainfed Lowland Rice Observational Trial-2003
	RLRVYT-2001	Rainfed Lowland Rice Variety Yield Trial-2001
	RLRVYT-2002	Rainfed Lowland Rice Variety Yield Trial-2002
	RLRVYT-2003	Rainfed Lowland Rice Variety Yield Trial-2003
	RLRVYT-2004	Rainfed Lowland Rice Variety Yield Trial-2004
	SHROT-1981	Sheath Rot Screening Set-1981
	THR-1982	Rice Thrips Screening Set-1982
	THR-1983	Rice Thrips Screening Set-1983
	THR-1984	Rice Thrips Screening Set-1984
	URVYT-2001	Upland Rice Variety Yield Trial-2001
	URVYT-2002	Upland Rice Variety Yield Trial-2002
	URVYT-2003	Upland Rice Variety Yield Trial-2003
	URVYT-2004	Upland Rice Variety Yield Trial-2004
	URVYT-2005	Upland Rice Variety Yield Trial-2005
	YSB-1981	Yellow Stemborer Screening Set-1981
	YSB-1982	Yellow Stemborer Screening Set-1982

Name:

Title:

OK Cancel

ICIS Workbook Load Study

This tool allows you to load a study to the DMS local database.

From: Search: in Name

	Name	Title
INGER NURSERY		
	IRBPHN-1977	
	IRBPHN-1978	
	IRBPHN-1979	
	IRBPHN-1980	
	IRBPHN-1981	
	IRBPHN-1982	
	IRBPHN-1983	
	IRBPHN-1984	
	IRBPHN-1985	
	IRBPHN-1986	
	IRBPHN-1987	
	IRBPHN-1988	
	IRBPHN-1989	
	IRBPHN-1990	
	IRBPHN-1991	
	IRBPHN-1992	
	IRBPHN-1993	
	IRBPHN-1995	
	IRBPHN-1997	
	IRBPHN-1999	
	IRBPHN-2001	
	IRBPHN-2003	
	IRBPHN-2005	
	IRSHBN-1977	
	IRTN-2000	
	OYT NURSERY	
	NewStudy	NewStudy Title
	IURON-1998	International Upland Rice Observational Nursery-1998
	IURON-1999	International Upland Rice Observational Nursery-1999
	IURON-2000	International Upland Rice Observational Nursery 2000
	IURON-2001	International Upland Rice Observational Nursery 2001
	IURON-2003	International Upland Rice Observational Nursery 2003
	IURON-2004	International Upland Rice Observational Nursery 2004
	IURON-2005	International Upland Rice Observational Nursery 2005
	IURYN-1977	International Upland Rice Yield Nursery-1977
	IURYN-1978	International Upland Rice Yield Nursery-1978
	IURYN-1979	International Upland Rice Yield Nursery-1979
	IURYN-1980	International Upland Rice Yield Nursery-1980
	IURYN-1981	International Upland Rice Yield Nursery-1981
	IURYN-1983	International Upland Rice Yield Nursery-1983
	IURYN-1992	International Upland Rice Yield Nursery 1992
	IURYN-1994	International Upland Rice Yield Nursery-1994
	IURYN-E-1984	International Upland Rice Yield Nursery - Early-1984
	IURYN-E-1985	International Upland Rice Yield Nursery - Early-1985
	IURYN-E-1986	International Upland Rice Yield Nursery - Early-1986
	IURYN-E-1987	International Upland Rice Yield Nursery - Early-1987
	IURYN-E-1988	International Upland Rice Yield Nursery - Early-1988
	IURYN-E-1989	International Upland Rice Yield Nursery - Early-1989
	IURYN-E-1990	International Upland Rice Yield Nursery - Early-1990
	IURYN-E-1991	International Upland Rice Yield Nursery - Early-1991

Name: Dataset:

Title:

OK Cancel

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

Map

Search:

Map Germplasm Names

Workbook Column	Name Type
NCODE	NAME CODE
SCODE	STOCK CODE

Map

Map Germplasm Attributes

Workbook Column	Attribute Type
ORIGIN	Seed source or origin

Map

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	Inv/Veek									
2	TITLE	Inventory/W1W2									
6	DATE	20081212									
7	TYPE	LST									

List

	A	B	C	D	E	F	G	H	I	J
1	DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID		ROWTAG		
2	BreedersPed gree1							*		
3	[CML144/SNSYNF2(N3/TUX-A-90)-102-1-2-2-ESR-B*4]-B-2-6-BBB									
4	[(87036/87923)-x-800-3-1-Sm/GQL5]-B-49-2-2-1-3-B*4									
5	CML444/CML395/[(89[G27/TEWTSRPool])#-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	-	-									

List

	A	B	C	D
1	DESIGNATION	SCODE	NCODE	RO
2	BreedersPed gree1	StockID	Name	
3	[CML144/SNSYNF2(N3/TUX-A-90)-102-1-2-2-BSR-B*4]-B-2-6-BBE	V369-1	VL05166	
4	[(87036/87923)-x-800-3-1-Sm/GQL5]-B-49-2-2-1-3-B*4	V392-1	VL05269	
5	CML444/CML395/[(89[G27/TEWTSRPool])#-273-2-X-B](COMPE2/P43SR//COMPE2)F#-20-1-1]-B-32-2-B-4-#-BB	V493-1	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	-	-									

List

	A	B	C
1	DESIGNATION	ORIGIN	RO
2	BreedersPed gree1	Origin	
3	[CML144/SNSYNF2(N3/TUX-A-90)-102-1-2-2-BSR-B*4]-B-2-6-BBE	HA05A-2154-1	
4	[(87036/87923)-x-800-3-1-Sm/GQL5]-B-49-2-2-1-3-B*4	MZ05B-2257-1	
5	CML444/CML395/[(89[G27/TEWTSRPool])#-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.

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 retyping.
- 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

The screenshot shows an Excel spreadsheet with the following data structure:

Sl Num	StockID	Name	BreedersPedigree1	Origin	Memor1	Comments1	Comments2
20	INVENTORY VIVEK QPM						
22	Sl Num	Stock ID	Name	Pedigree	Origin		
25	85	V359-1	VL05466	[CML144 \$NSYNF2[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-800-3-1-3n GQL5]-B-49-2-2-1-3-B*4	MZ05B-2257-1		
27	1501	V490-1	VH051584	CML444 CML395 [89[G27 TEWTSRPool]=278-2-X-	HA07A-N2172-1-2		
28	6174	V510-1		(WW01408-1-1-2-B*4=#[CML205/CML182]-B-47-1-2/Comp41Q)=#	MZ07B-N2282-1		
29	6193	V511-1/1	VL06848	[NBRED-A/NBRED-B]-BBB-1-BB	MZ07B-N2205A-1		
30	6193	V511-1/2	VL06848	[NBRED-A/NBRED-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(O8U23i)-5-3-X-X-1	HA05A-2104-2		
34	6175	V510-2		(WW01408-1-1-2-B*4=#[CML205/CML182]-B-47-1-2/Comp52Q)=#	MZ07B-N2282-2		
35	4777	V493-2	VL071708	[CML202/CML144]F2]-1-1-3-B-1-B*6[CML511]-B	HA07A-N2158A-2		
36	38	V327-3	VL05468	[CML144 \$NSYNF2[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-2sx]-B-8-2-2-BBB	HA05A-2155-3		
38	255	V366-3	VL054807	[[K64R.G16SR]-39-1[K64R.G16SR]-20-2]-5-1-2-B*4 CML390]-B-39-2-B-4=#-1-B*4	HA05A-2107-3		
39	390	V402-3	VH051847	[Ent52-92SEW1-2 [DMRESR-W]EarlySel=#L-2-1-B CML386]-B-22-1-B-4=#-1-	MZ05B-2274-5/6		
40	6176	V510-3		[CML144 [CML159 [CML159 [MSRYPPOOL9]C1F2-205-1(OSU23i)-5-3-X-X-1-BB]F2-	MZ07B-N2282-3		
41	6195	V511-3/1	VL06840	[[Ent320-92SEW2-77 [DMRESR-W]EarlySel=#L-2-4-B CML390]-B-13-2-B-4=#-1-	MZ07B-N2205A-3		
42	6165	V511-3/2	VL06840	[[Ent320-92SEW2-77 [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-10sx]-B-6-1-	MZ07B-N2265-5		
44	4778	V493-3	VL071709	CompCML182SR-B	HA07A-N2158A-3		
45	256	V366-4	VL054612	[[[NAWS867 P30SR]-111-2 [NAWS867 P30SR]-25-1]-9-2-3-B-2-B CML386]-B-13-3-B-	HA05A-2107-4		

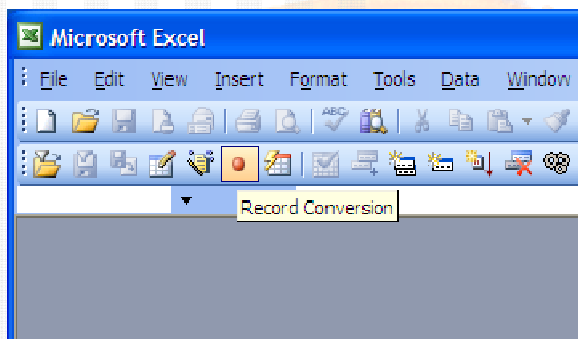
The 'Conversion Wizard' dialog box is titled 'ICIS Workbook (IRIS) - Conversion Wizard'. It contains the following fields and options:

- Header Row:** Row 22 -> Sl, Stock, Name, ...
- Not on the list. Extend the list up to 50
- First Data Row:** Row 25 -> 85, V359-1, VL05466, ...
- Index Column:** Sl (no blank cells)
- None. The total number of data row is 363
- Convert data file to:**
 - Study
 - List of Germplasm

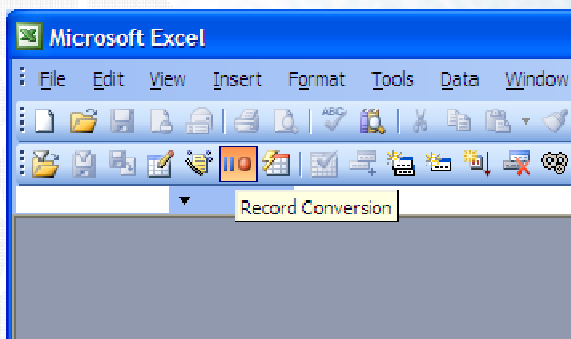
Choose between a Study or a Germplasm List.

Extending the File Conversion Wizard:

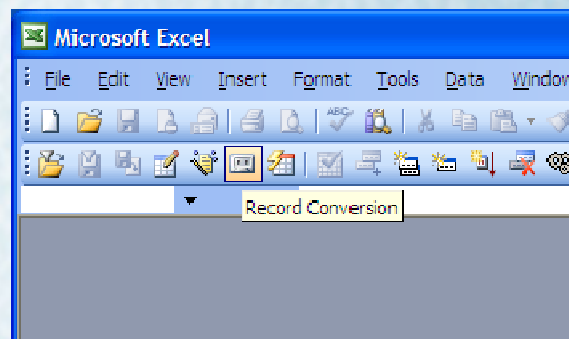
The Record Conversion Button



Default icon, no recorded parameters yet



Icon while the recording process is taking place



Icon when there's a recorded set of conversion parameters

A6	B	C	D	K	N	Q
SI	Stock ID	Name	Pedigree	Origin	Name1	Comment1
20	INVENTORY VIVEK QPM					
21						
22	SI	Stock ID	Name	Pedigree	Origin	Memo
23	Num	ID				Comments
24						
25	85	V02681	VLO9488	(CML144(SNSYNF2)N3 TLUX-A-90)102-1-2-2-BSR-B*4)B-2-6-BBB	HA67A-2154-1	
26	378	V02621	VLO5259	([8703687923]x-800-3-1-SnGQL)B-49-2-1-3-B*4	MZ07B-2257-1	Bid
27	1501	V460-1	V4601584	CML444(CML391) [8]G27 TENTRPoc*-278-2-3C	HA67A-202172-1-0	Dialled To Identify Testers/Self of site lines
28	8774	V010-1		(VVV)408-1-1-2-B*4-(CML205(CML182)B-47-1-2)Comp41Q)B	MZ07B-302282-1	
29	8193	V011-11	VLO8848	(DNBRED-A.DNBRED-B)BBB-1-BB	MZ07B-302205A-1	
30	8193	V011-12	VLO8848	(DNBRED-A.DNBRED-B)BBB-1-BB	MZ07B-302205A-1	
31	8148	V030-1	VLO7100	(CML202(CML144)F2-1-1-3-B-1-B*6(CML511)-B	MZ07B-302265-1	



A	B	C
DE SIGNATION	CROSS	ENTRY
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		

File conversion in one click of a button.

Speaking of wizards...

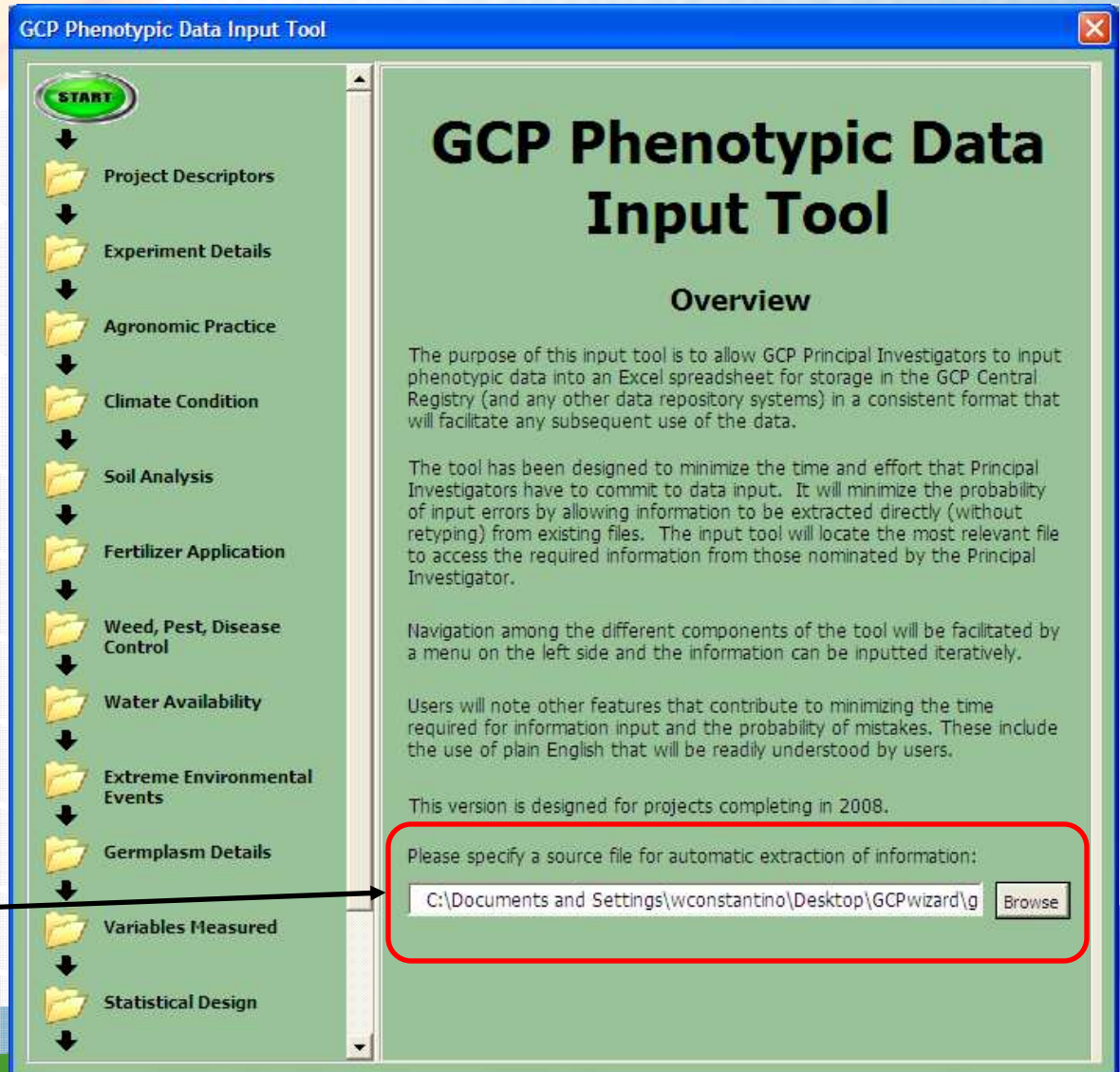
Another data capture wizard in ICIS Workbook which doesn't require any prior knowledge of ICIS:

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...



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	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:

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

Add

Plot	Block	Replication	Entry
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




Plot	Block	Replication	Entry
1	1	1	6
2	1	1	1
3	1	1	10
4	1	1	15
5	1	1	22
6	2	1	2
7	2	1	17
8	2	1	14
9	2	1	4
10	2	1	9

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 

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

CONDITION	DESCRIPTION	PROPERTY	SCALE	METHOD	DATA TYPE	VALUE	LABEL
INVESTIGATOR	INVESTIGATOR	Name	Principal Investigator	C	Dr. Casilana M. Vera	STUDY	
PI_EMAIL	INVESTIGATOR	Email Address	PI's Email	C	cveracruz@cgiar.org	STUDY	
INSTITUTION	INSTITUTION	Name	PI's Institution	C	International Rice Res	STUDY	
GCP_NO	PROJECT	Number	GCP Assigned	N	4000	STUDY	
GCP_TITLE	PROJECT	Name	GCP Assigned	C		STUDY	
ENVIRONMENT_TYPE	EXPERIMENT TYPE	Type	Not Specified	C	Field	STUDY	
YEAR	YEAR	Year (YYYY)	Not Specified	N	2008	STUDY	
SEASON	SEASON	Code	Not Specified	C	DS	STUDY	
COUNTRY	LOCATION	Country Name	Experiment Site	C	Philippines	STUDY	
COUNTRY_CODE	LOCATION	FAO Country Code	Experiment Site	C	PHL	STUDY	
STATE(PROVINCE)	LOCATION	State/Province Name	Experiment Site	C	Nueva Ecija	STUDY	
TOWN	LOCATION	Town Name	Experiment Site	C	Munoz	STUDY	
SITE	LOCATION	Site Name	Experiment Site	C	PhiRice	STUDY	
LONGITUDE	LOCATION	Longitude	Experiment Site	C	-	STUDY	
LATITUDE	LOCATION	Latitude	Experiment Site	C	-	STUDY	
ALTITUDE	LOCATION	Altitude	Experiment Site	C	-	STUDY	
ECOSYSTEM	ECOSYSTEM	Type	Experiment Site	C	upland	STUDY	
PLANTING_RATE	PLANTING RATE		Not Specified	N		STUDY	
PLANT_GAP	Distance between pl	PLANT GAP	meters	Not Specified	N	STUDY	
ROW_GAP	Distance between ro	ROW GAP	meters	Not Specified	N	STUDY	
PLOT_LENGTH	PLOT length	PLOT LENGTH	meters	Not Specified	N	STUDY	
PLOT_BRE-ADTH	PLOT breadth	PLOT BRE-ADTH	meters	Not Specified	N	STUDY	
PLOT_GAP	Distance between pl	PLOT GAP	meters	Not Specified	N	STUDY	
STATISTICAL_DESIGN	STATISTICAL DESIGN	Type	Not Specified	C	Alpha Lattice	STUDY	

Navigation Bar: 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

From Bug Report to Feature Request

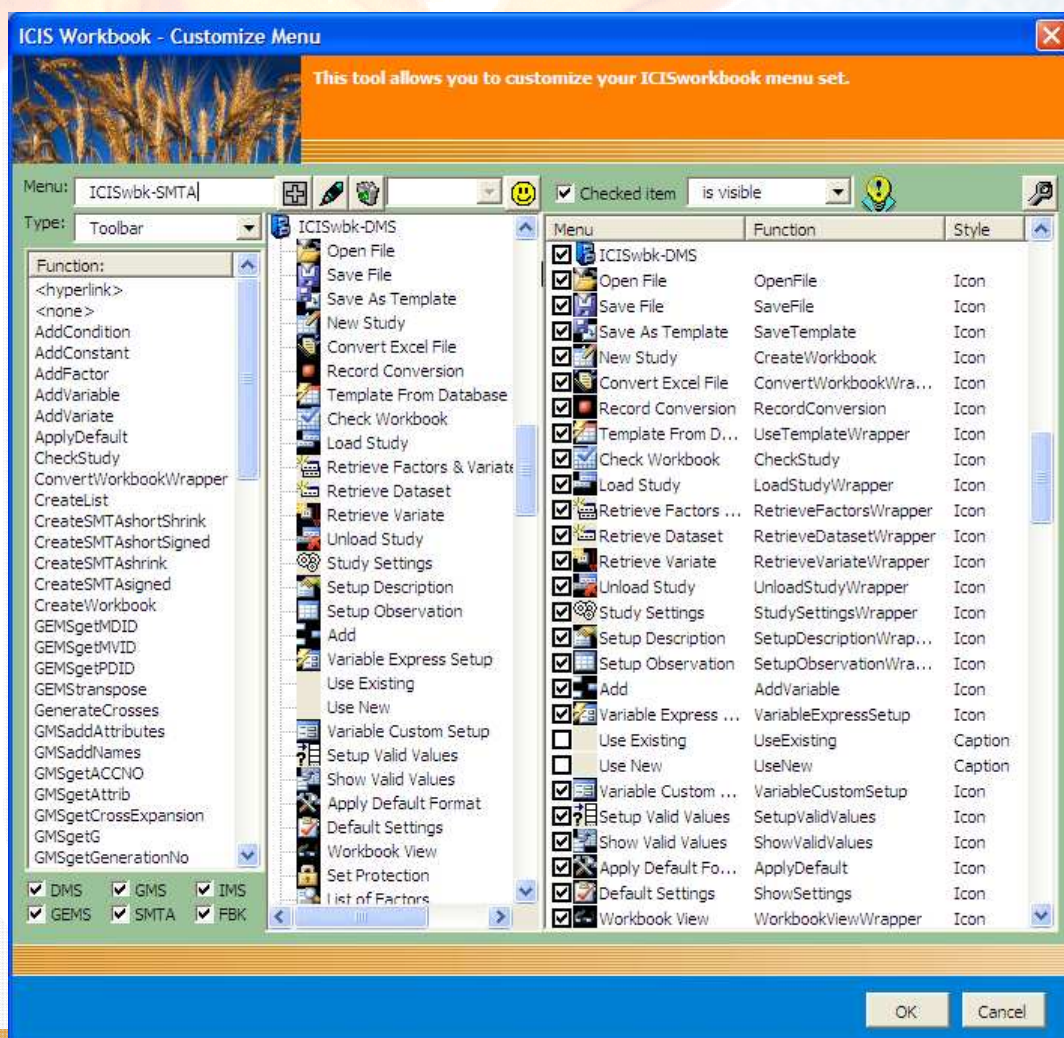
- Shawn once again altered the course of history by posting a bug report in CropForge. 😊 He complained about an error occurring in generating the Workbook toolbar icons during startup.
- The temporary fix was to change the hardcoded icon FaceID and save the code. Until Arlet and Weng encountered the 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

The screenshot displays the Microsoft Excel interface with the 'TBarIcons' menu open, showing a list of sets from Set 1 to Set 13. A 'Customize Menu' dialog box is overlaid on the right, titled 'ICIS Workbook - Customize Menu'. This dialog allows users to customize their ICISworkbook menu set. It features a 'Menu:' dropdown set to 'Convert Excel File' and a 'Type:' dropdown set to 'Menu Item'. The main area of the dialog is a tree view showing the 'ICISwbk-DMS' menu structure. A table on the right lists the items and their functions and styles.

Menu	Function	Style	
ICISwbk-DMS			
Open File	OpenFile	Icon	
Save File	SaveFile	Icon	
Save As Template	SaveTemplate	Icon	
New Study	CreateWorkbook	Icon	
Convert Excel File	ConvertWorkbookWra...	Icon	
Record Conversion	RecordConversion	Icon	
Template From Database	UseTemplateWrapper	Icon	
Load Study	CheckStudy	Icon	
Retrieve Factors & Variat...	LoadStudyWrapper	Icon	
Retrieve Dataset	RetrieveFactorsWrapper	Icon	
Unload Study	RetrieveDatasetWrapper	Icon	
Study Settings	RetrieveVariateWrapper	Icon	
Setup Description	UnloadStudyWrapper	Icon	
Setup Observation	StudySettingsWrapper	Icon	
Add	SetupDescriptionWrap...	Icon	
Variable Express Setup	SetupObservationWra...	Icon	
Use Existing	AddVariable	Icon	
Use New	Variable Express ...	Icon	
Variable Custom Setup	UseExisting	Caption	
Setup Valid Values	UseNew	Caption	
Show Valid Values	Variable Custom ...	Icon	
Apply Default Format	SetupValidValues	Icon	
Default Settings	ShowValidValues	Icon	
Workbook View	ApplyDefaultFo...	Icon	
Set Protection	SetProtection	Icon	
List of Factors	Default Settings	Icon	
	Workbook View	WorkbookViewWrapper	Icon

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

```

Training - Notepad
File Edit Format View Help

[study]
Objective=PROJECT CODE

[frmstudy]
chkHistory_value=False
chkFinal=Public

[frmCombine]
chkUserName_value=True

[frmGEMS_Fill]
lblAllele=M.V. Name

[frmGEMS_Transpose1]
lblAlleleCnt=M.V. Count
lblAllele1=1st M.V.
lblAllele2=2nd M.V.
lblAllele3=3rd M.V.
lblAllele4=4th M.V.
lblAllele5=5th M.V.
lblAllele6=6th M.V.
lblAllele7=7th M.V.
lblAllele8=8th M.V.
lblAllele9=9th M.V.
    
```

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.

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

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

Plot	Block	Replication	Entry
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			

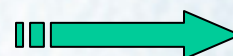
The Maize Fieldbook – ICIS Workbook Integration Project

- 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

List

	A	B	C	D	E	F	G	H	I
1	DESIGNATION	CROSS	ENTRYCODE	SOURCE	GID	ENTRYID	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/WA	HB005U	IURON06					
7	WAB 534-B-3A 1-1	WAB 181-18/DR 2	HB006U	IURON11					
8	YUNLU 28	IDSA 6/WUNENGE	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/IE	HB015U	U03DSOYT					
17	IR 76561-AC 8-B	CT 13382-9-4-M/IR	HB016U	U03DSOYT					
18									



ICISwbk-GMS

GMS

Germplasm Management

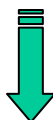


Seed Inventory Management

ICISwbk-IMS



Data Management



List

	A	B	C	D	E	F	G	H	I	J
1	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	406626	4				
6	WAB 326-B-B-7-H1	TOX 1785-19-18/WA	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/WUNENGD	HB007U	IURON04	790394	7				
9	IRRI 132	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	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/IE	HB015U	U03DSOYT	1161440	15				
17	IR76561-AC8-B	CT 13382-9-4-M/IR	HB016U	U03DSOYT	1161327	16				
18										

ICISwbk-DMS

Variate

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

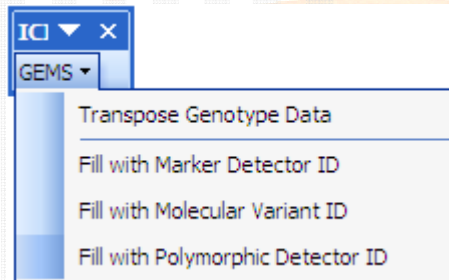


Statistical Analysis and Reports

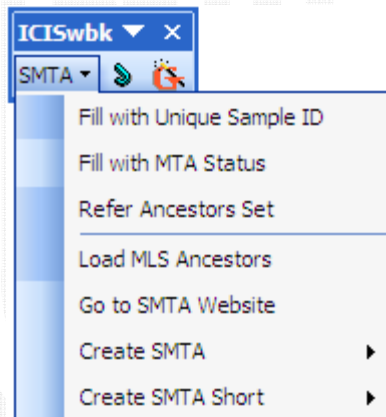
- Shopping Cart Query Builder
- Statistical Analysis
- Chart Generation

The Result: Complete ICIS Workbook

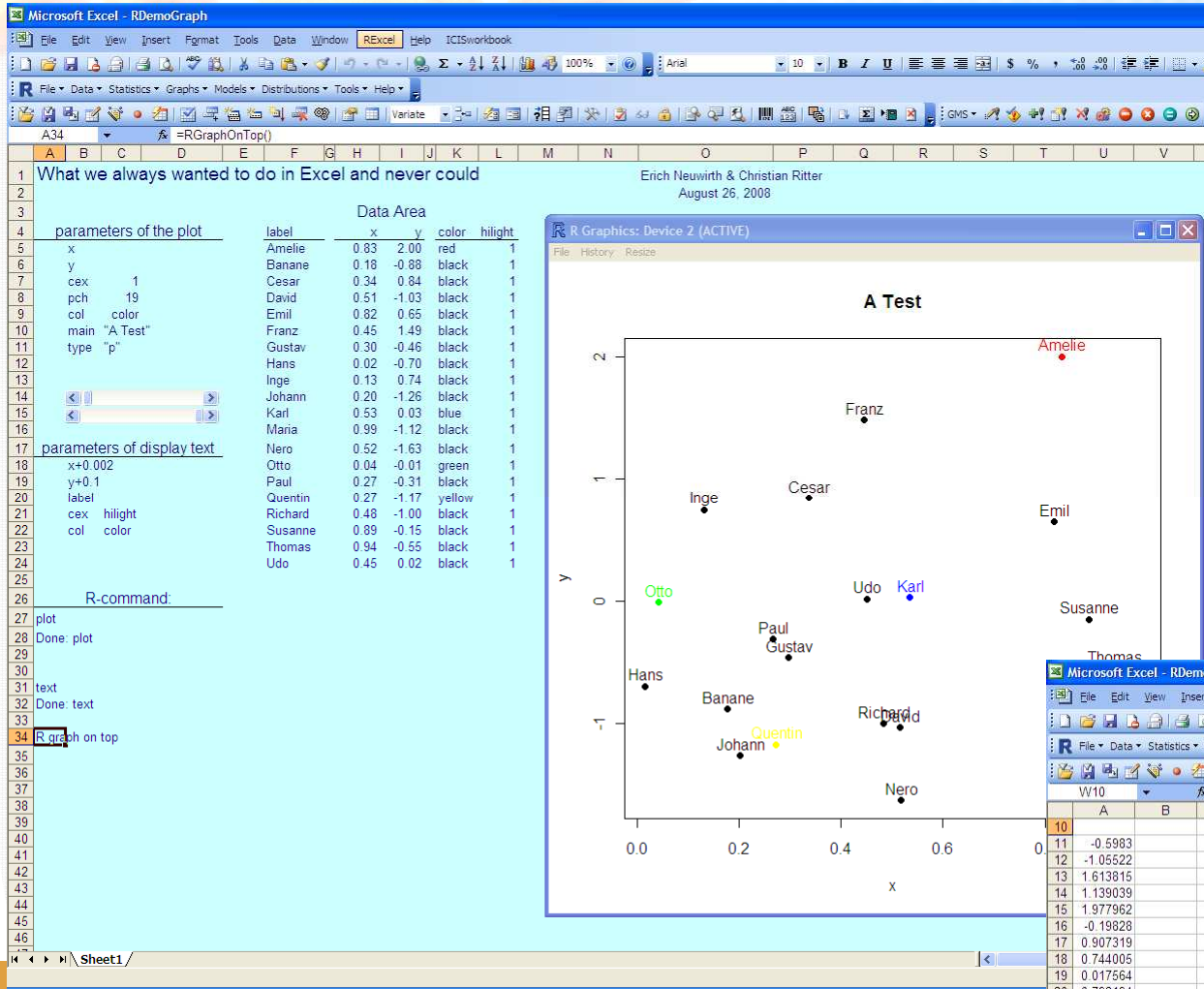
Genetic Management



Standard Material Transfer Agreement Management



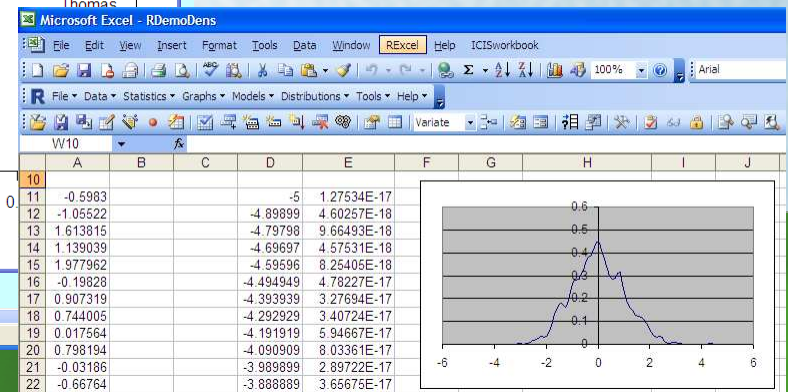
Integration of the R Statistical Package into the ICIS Workbook



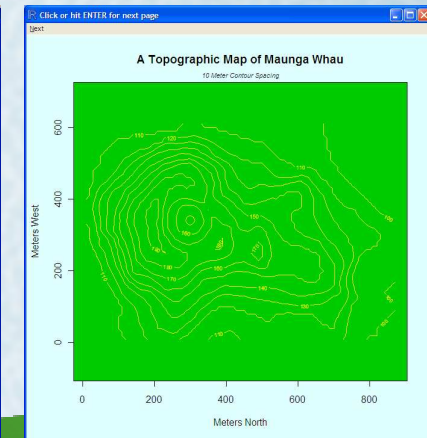
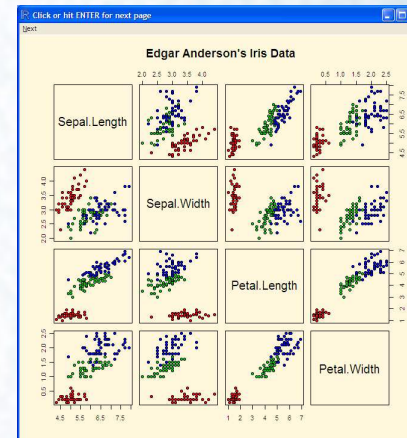
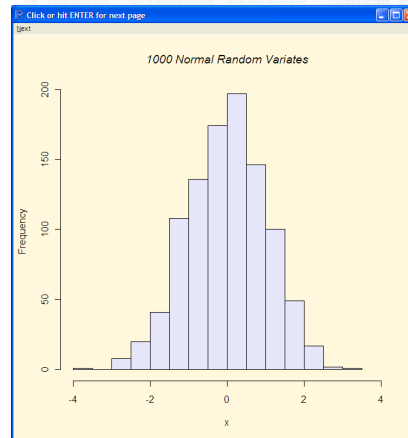
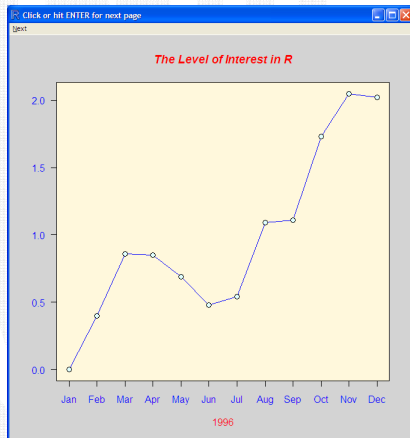
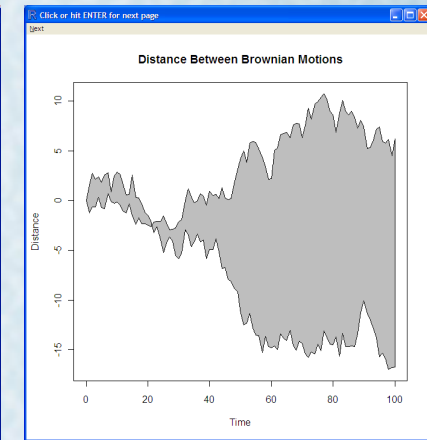
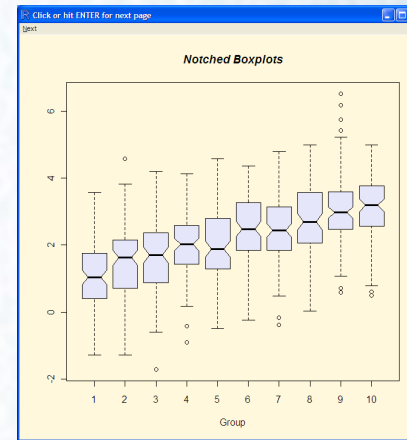
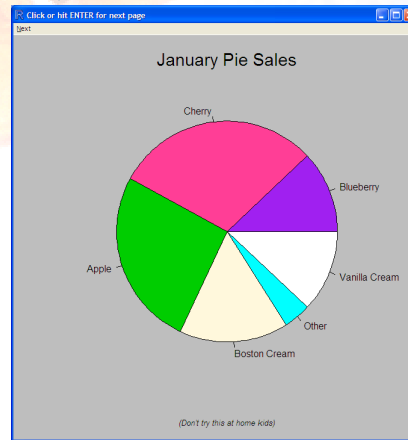
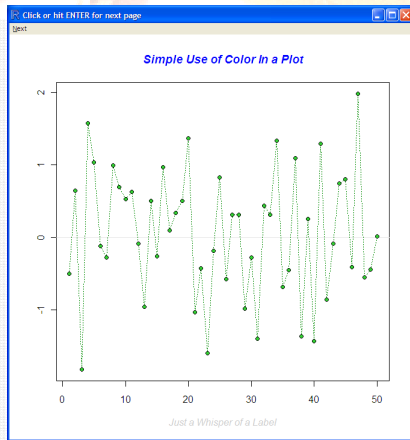
RExcel is an Excel Add-in written by Erich Neuwirth.

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!



Thank you.