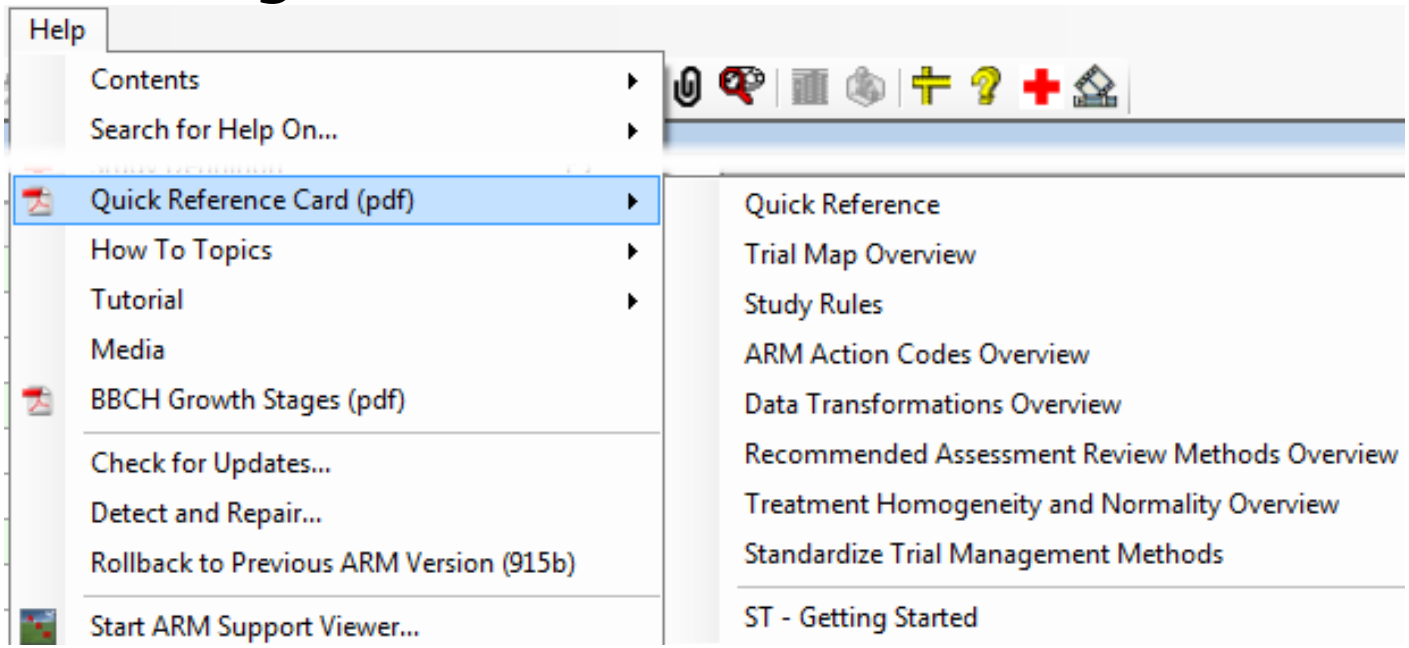
ARM 9 Changes ver. 9.1.0 to 9.1.5

Gylling Data Management, Inc.

Help Menu

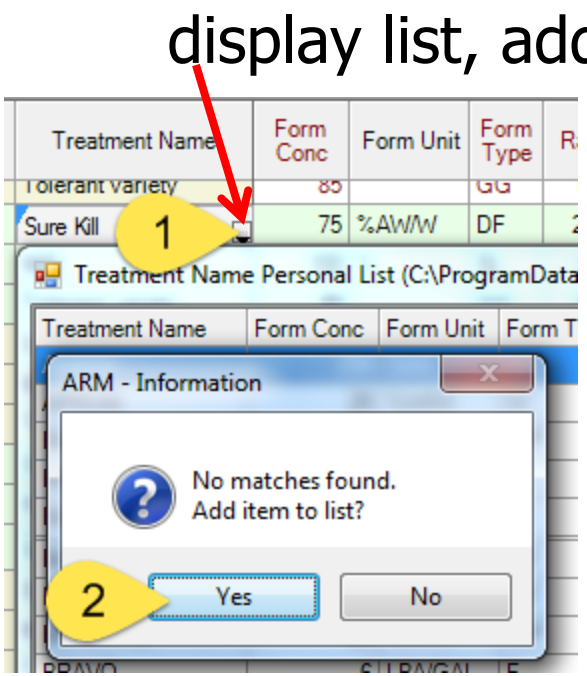
- Expanded "Quick Reference (pdf)"
  - Quick Reference has more information
  - Training handouts are included

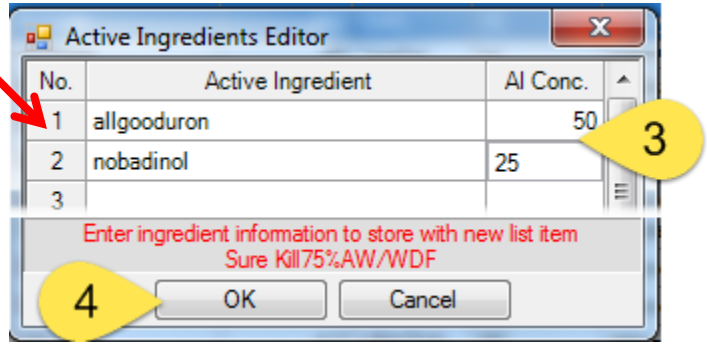


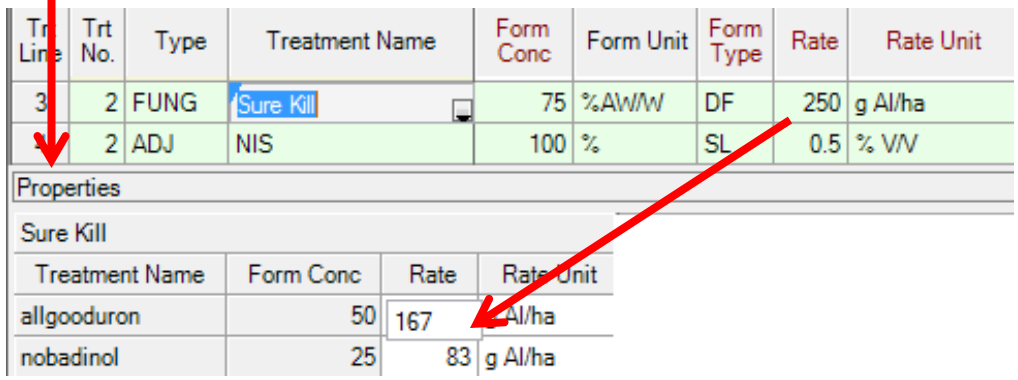
Treatments Editor

- New grid to enter active ingredients while adding to a product list:

display list, add ingredients, view on the properties panel

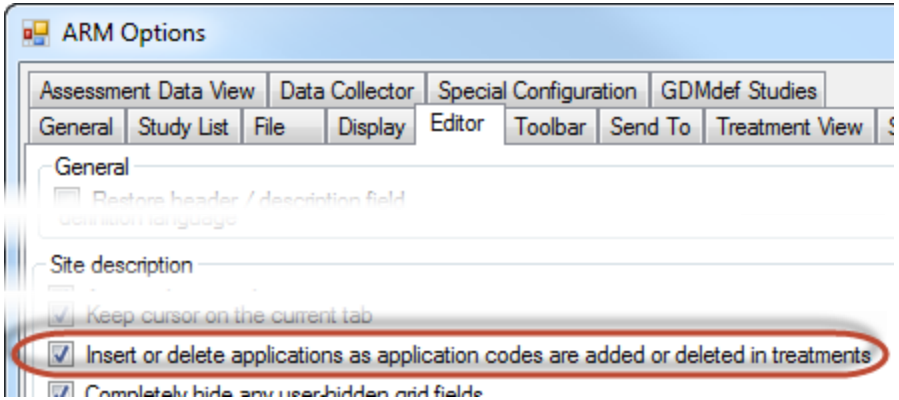






Auto-Add Application Columns

- Controlled by Editor option (Tools – Options)
- Add new application C



Treatments - Line 15

Trt Line	Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code
14	5	ADJ	NIS	100	%	SL	0.5	% V/V	B
15	5	HERB	Super Stomp	75	%AW/W	DF	375	g AI/ha	C
16	5	ADJ	NIS	100	%	SL	0.5	% V/V	

Site Description

Contacts | Crop Description | Pest Description | Site and Design | Maintenance

	A	B
Application Date:	Mar-29-2007	Apr-10-2007
Appl. Start Time:	8:00 AM	12:30 PM
Appl. Stop Time:		
Application Method:	SPRAY	SPRAY

auto-adds column C

Treatments - Line 16

Trt Line	Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code
14	5	ADJ	NIS	100	%	SL	0.5	% V/V	B
15	5	HERB	Super Stomp	75	%AW/W	DF	375	g AI/ha	C
16	5	ADJ	NIS	100	%	SL	0.5	% V/V	

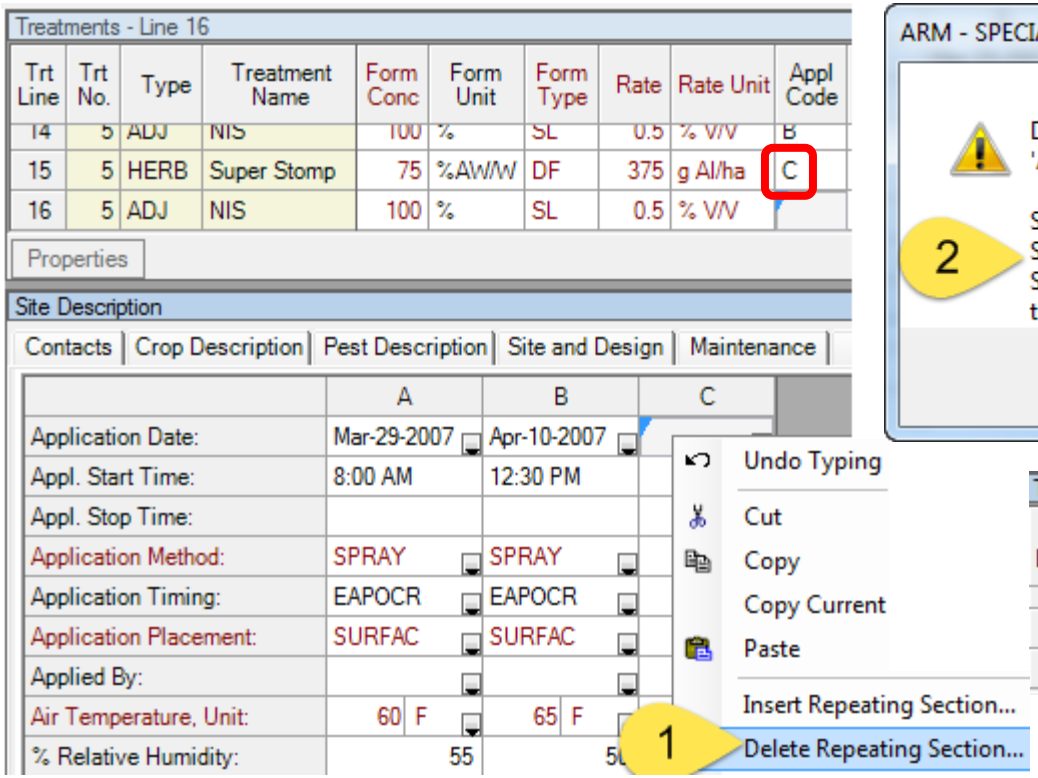
Site Description

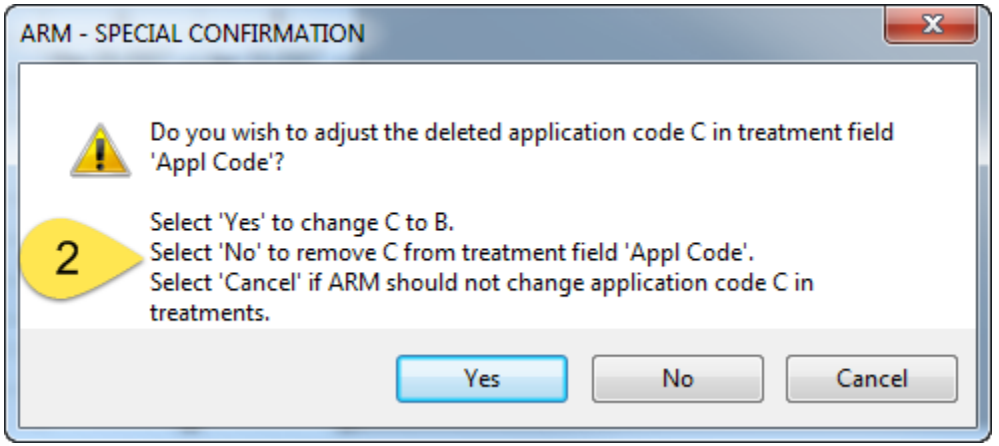
Contacts | Crop Description | Pest Description | Site and Design | Maintenance

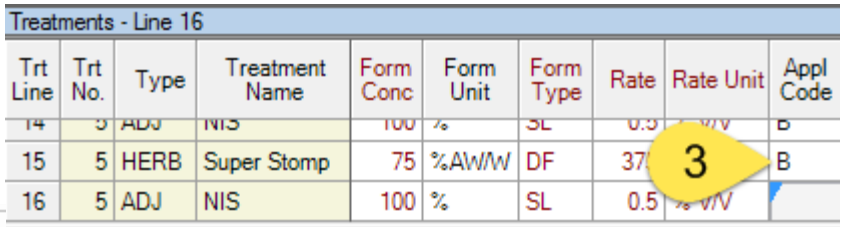
	A	B	C
Application Date:	Mar-29-2007	Apr-10-2007	
Appl. Start Time:	8:00 AM	12:30 PM	
Appl. Stop Time:			
Application Method:	SPRAY	SPRAY	

Auto-Delete Blank Applications

- Delete column in site description

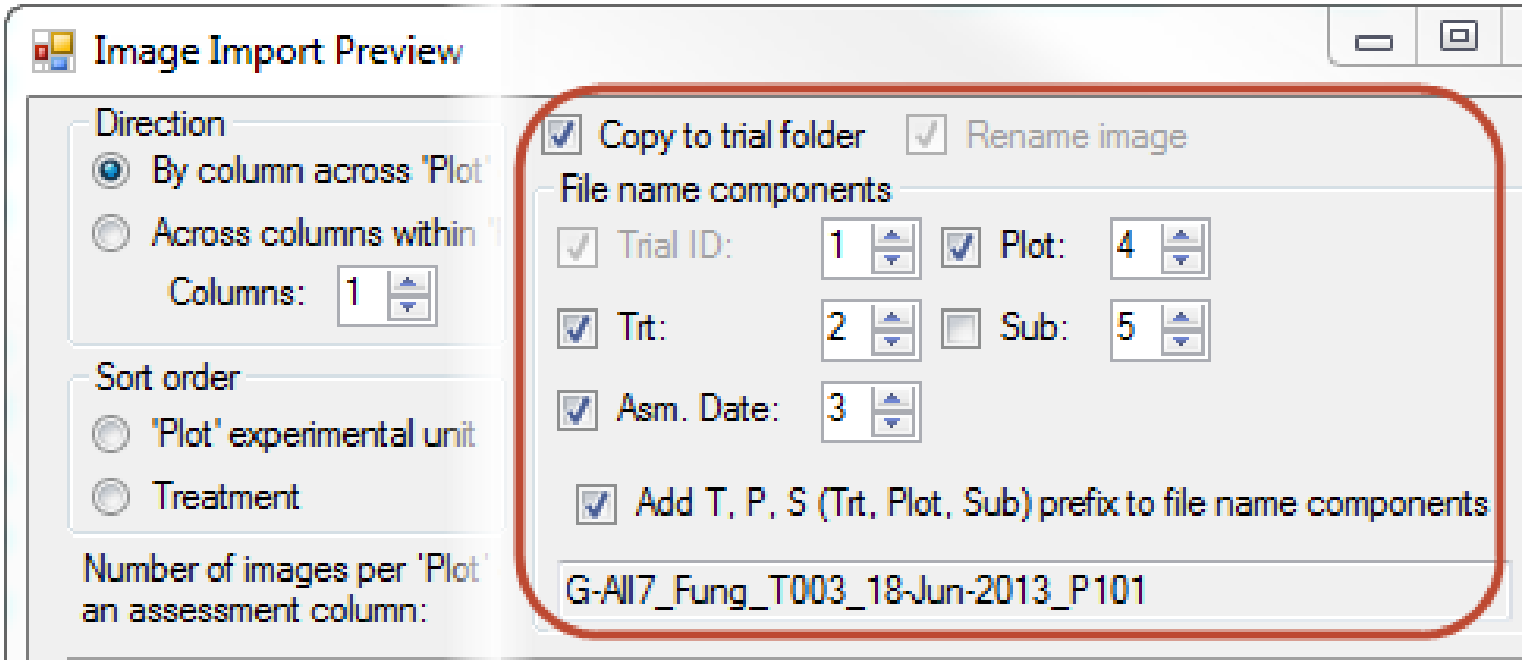






Assessment Data Images

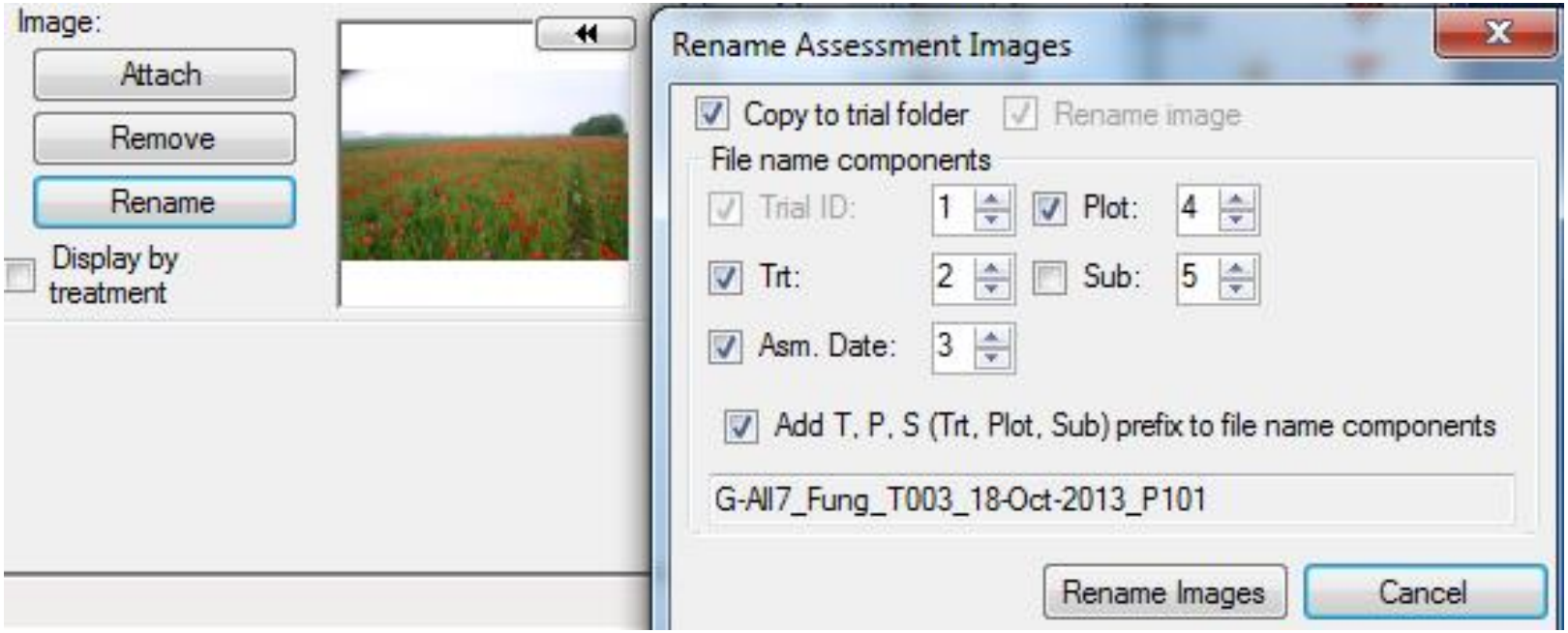
- More 'Rename images' choices



*Images are automatically renamed at save when any file name component changes

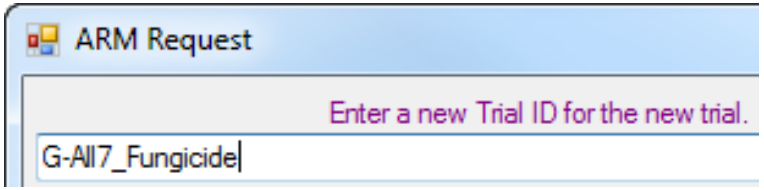
Assessment Data Images

- 'Rename' button to modify names of existing attached images

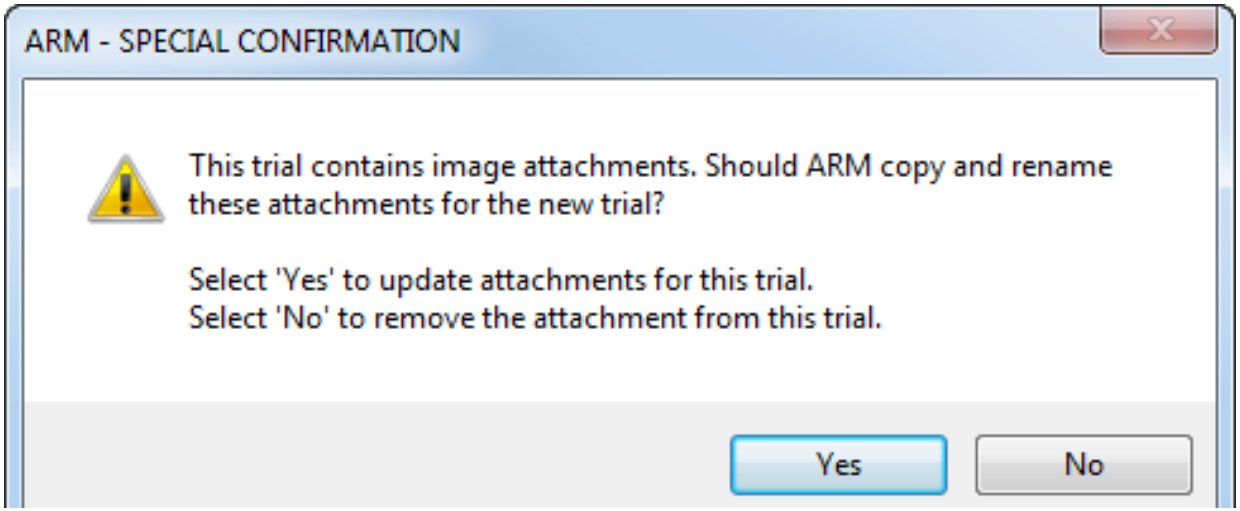


Assessment Data Images

- When 'Save As' to copy a trial:
  - Are asked to also change Trial ID

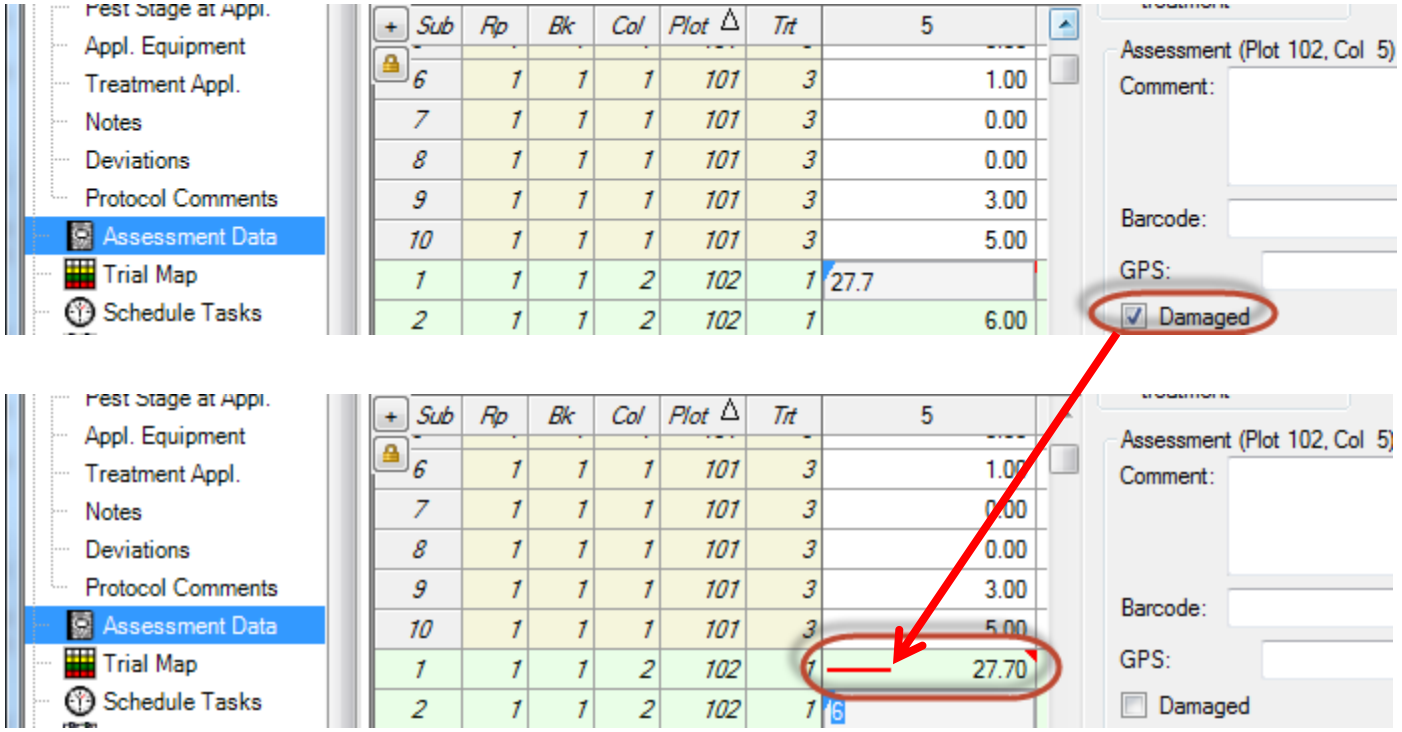


  - Also whether to copy and rename images



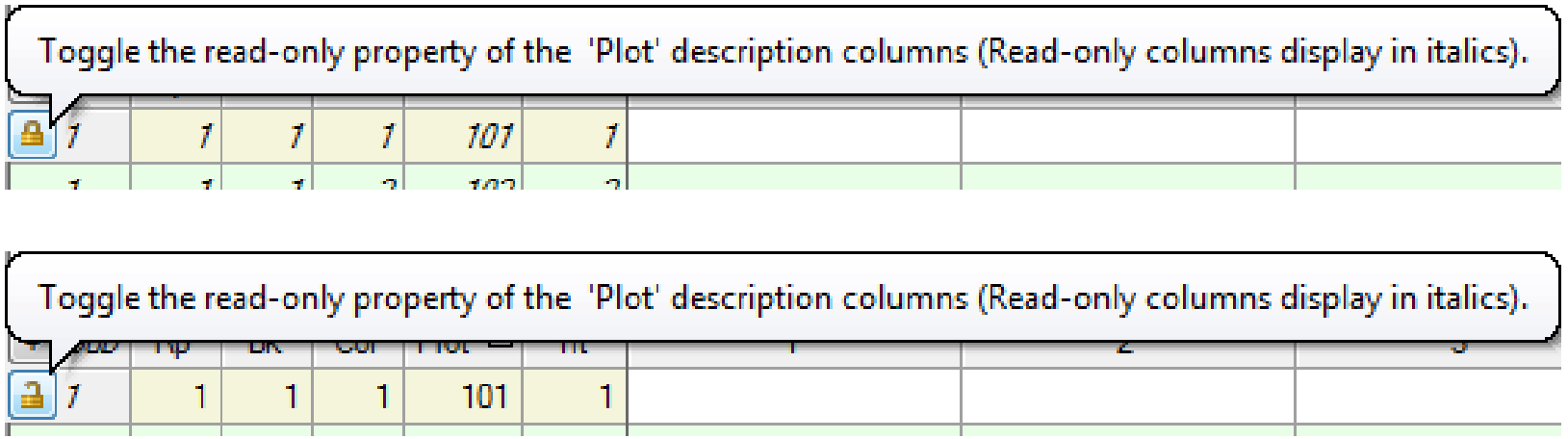
Assessment Data Editor

- Red line displays in damaged plots



‘Plot’ Experimental Unit Description

- Is “locked” by default to prevent accidental changes (at lower left of Assessment Data editor)
  - ***Italic*** text indicates read-only state
  - Click padlock to allow  or end  edits



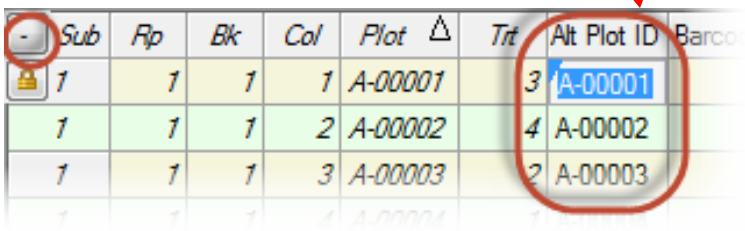
Data Transformations

- Henderson-Tilton: when multiple checks, all checks forced to 0% (like Abbott)
- User-defined transformations that make all calculations on treatment means are now non-analyzable "NM" on summaries: @TTABR/@TTAB, @TUPOCR/@TUPOC, @TTHT, @ITAB, @RA, @RA2, @REL, @RELR, @RELS, @THT, @TSO

Trial Map Enhancements

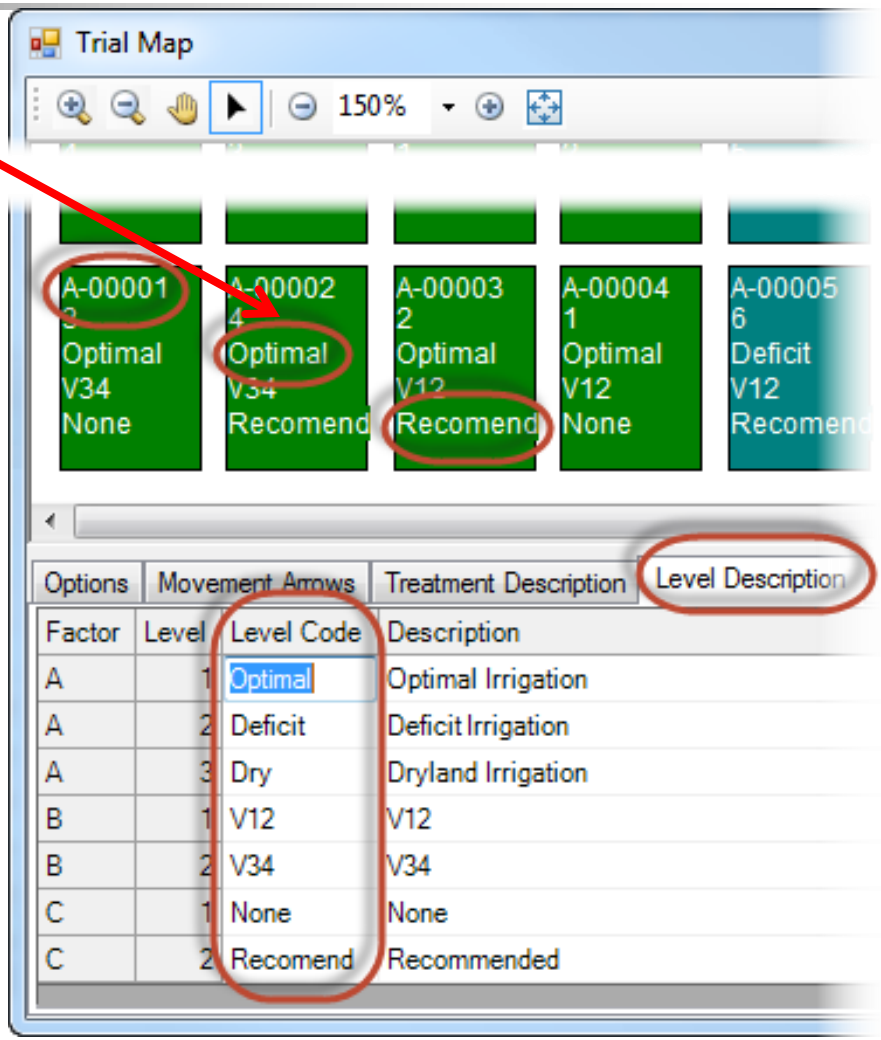
Displays wider factor level description codes and plot numbers

Assessment Data:



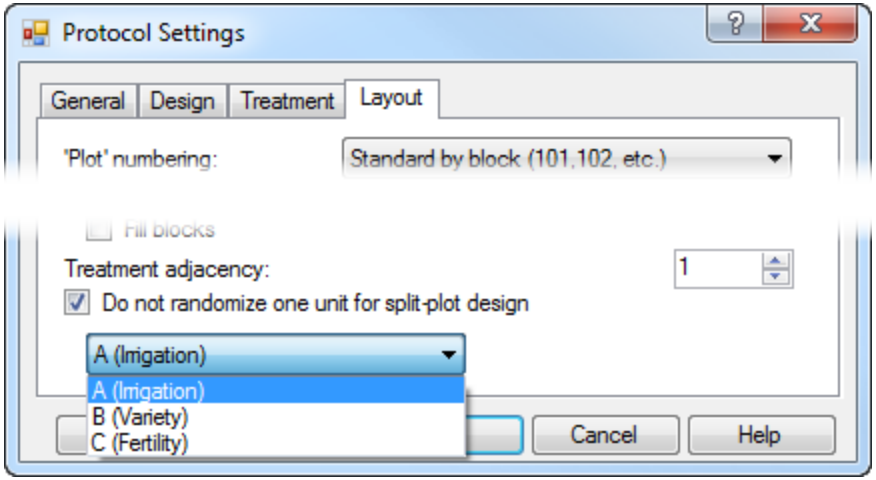
Sub	Rp	Bk	Col	Plot	Trt	Alt Plot ID
1	1	1	1	A-00001	3	A-00001
1	1	1	2	A-00002	4	A-00002
1	1	1	3	A-00003	2	A-00003

Auto-sizes plot font for up 8 letters wide



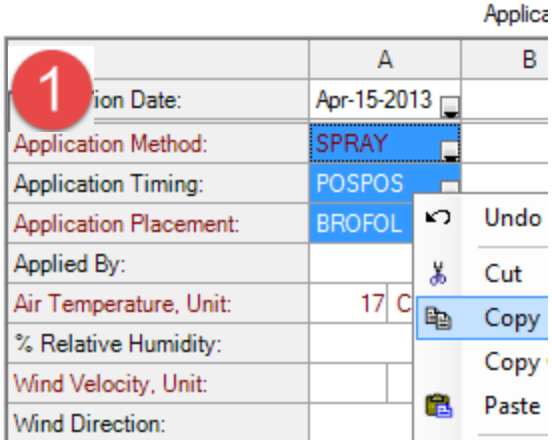
Settings - Design

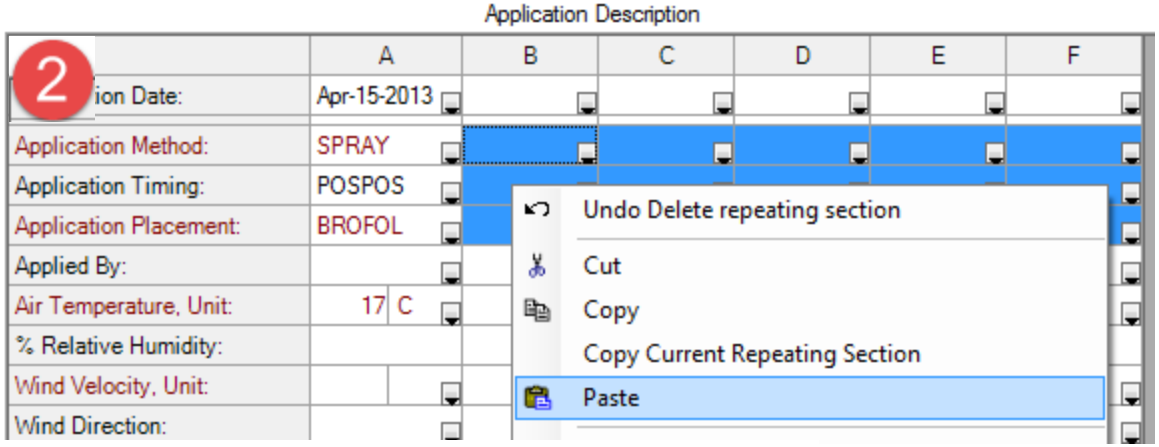
- Define any split-plot factor to not randomize
- Use when it is not feasible to "apply" factor when randomized: irrigation, wide cultivation or seeding equipment

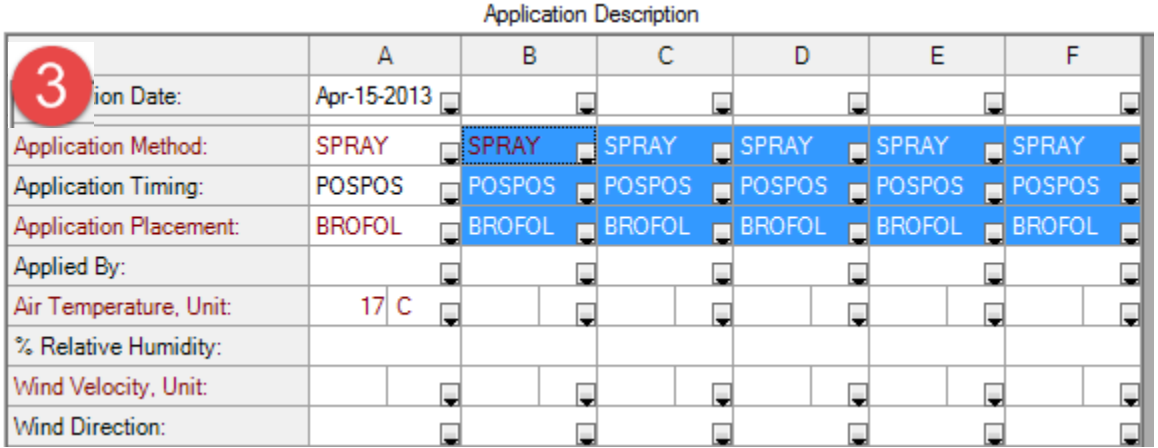


Site Description Editor

- Paste-fill in site description grids

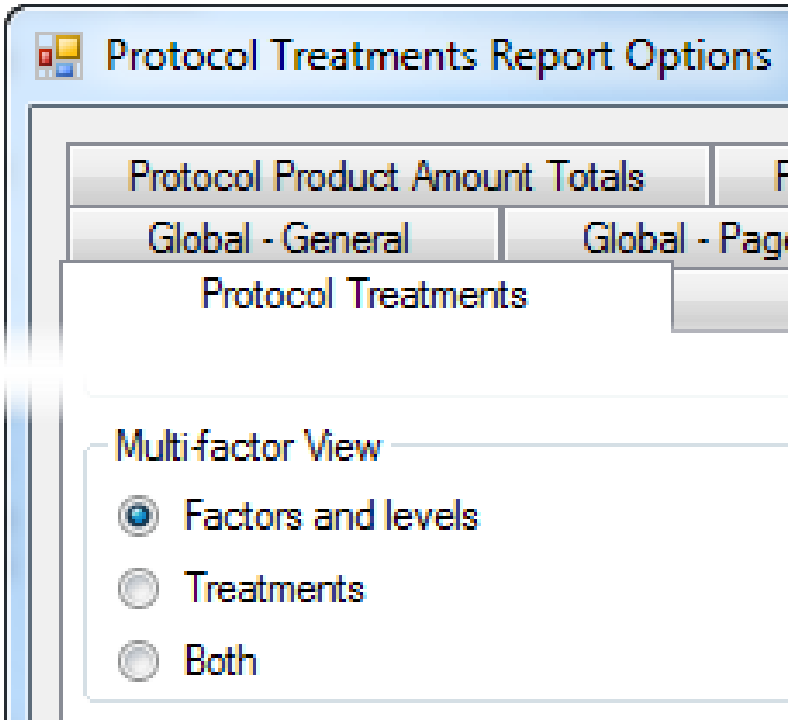






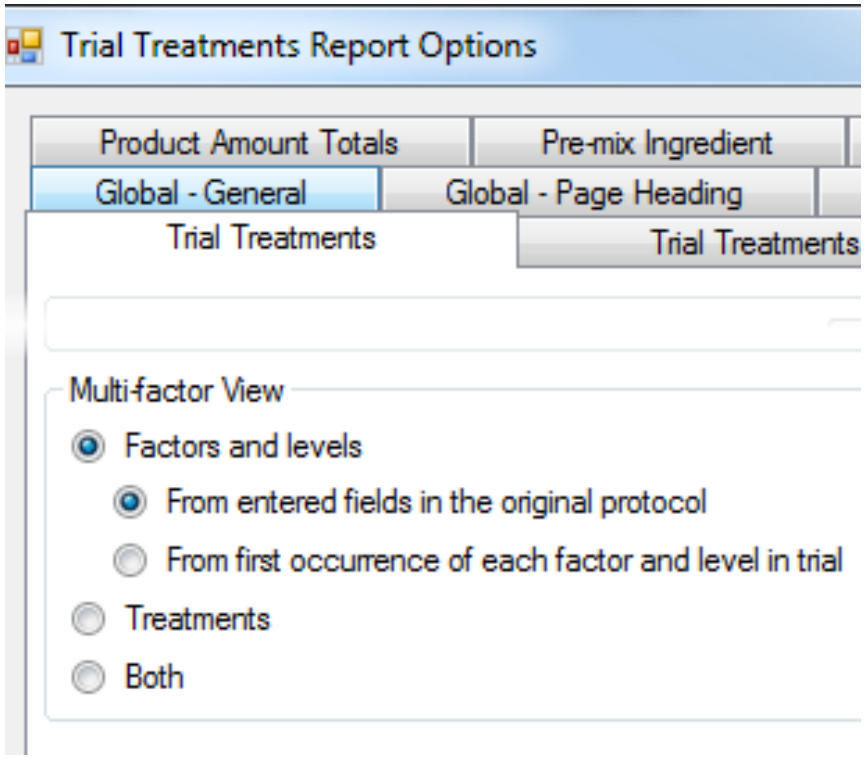
New Treatment Reports Option for Multi-Factor Studies

- Protocol Treatments



New Treatment Reports Option for Multi-Factor Studies

- Trial Treatments



New Treatment Reports Option for Multi-Factor Studies

- Define whether to list:
  - Levels of each factor (like protocol Treatments editor)

Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Growth Stage	Appl Code
Factor A (Herbicide)									
1	HERB	Tub	500	g/L	EC				
2	HERB	Tilt	600	g/L	EC				
Factor B (Rate)									
1		Lowrate				25	g ai/ha		
2		High rate				50	g ai/ha		
Factor C (Stage)									
1		Early						EAPOCR	A
2		Late						LAPOCR	B

New Treatment Reports Option for Multi-Factor Studies

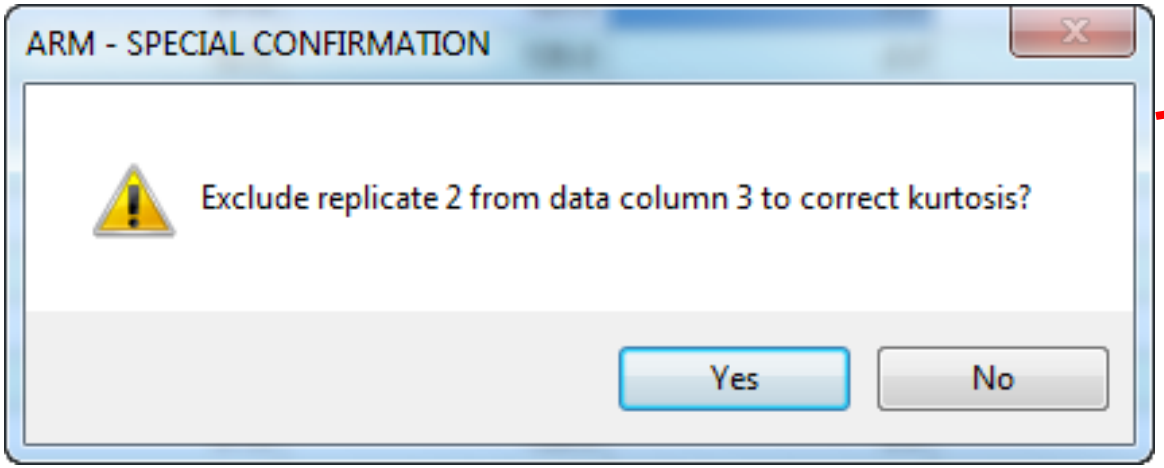
- "Multiplied-out" treatment list (the current ARM option)

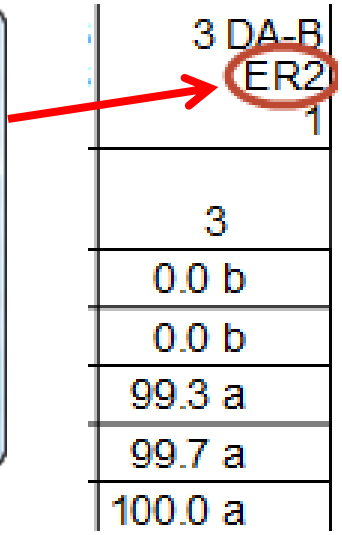
Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Growth Stage	Appl Code
1	HERB	Tub Lowrate Early	500	g/L	EC	25 25	g ai/ha g ai/ha	EAPOCR EAPOCR	A A
2	HERB	Tub Lowrate Late	500	g/L	EC	25 25	g ai/ha g ai/ha	LAPOCR LAPOCR	B B
3	HERB	Tub High rate Early	500	g/L	EC	50 50	g ai/ha g ai/ha	EAPOCR EAPOCR	A A
4	HERB	Tub High rate Late	500	g/L	EC	50 50	g ai/ha g ai/ha	LAPOCR LAPOCR	B B
5	HERB	Tilt Lowrate Early	600	g/L	EC	25 25	g ai/ha g ai/ha	EAPOCR EAPOCR	A A
6	HERB	Tilt Lowrate Late	600	g/L	EC	25 25	g ai/ha g ai/ha	LAPOCR LAPOCR	B B
7	HERB	Tilt High rate Early	600	g/L	EC	50 50	g ai/ha g ai/ha	EAPOCR EAPOCR	A A
8	HERB	Tilt High rate Late	600	g/L	EC	50 50	g ai/ha g ai/ha	LAPOCR LAPOCR	B B

- Both formats

Heterogeneity/Skewness/ Kurtosis on Summary Reports

- Exclude one replicate
  - ERn=Exclude Replicate 'n':
    ER2 to exclude replicate number 2

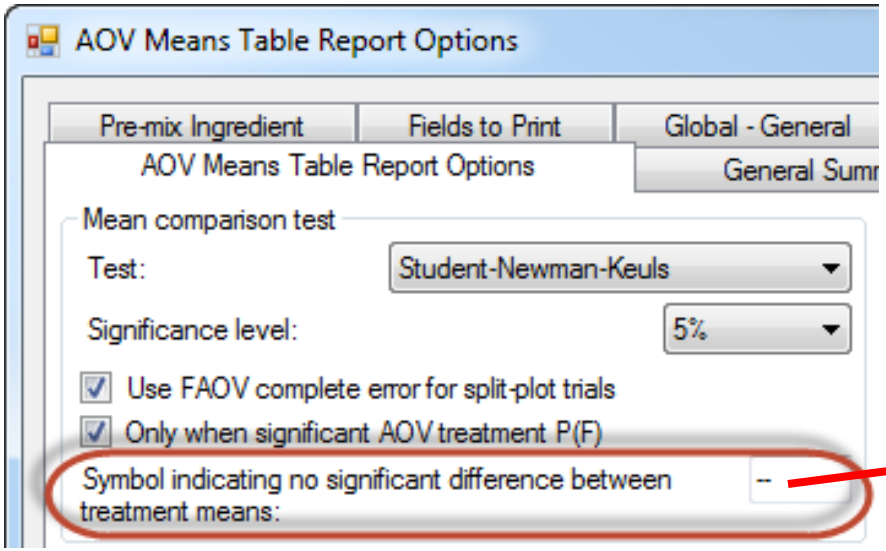




Excluded replicate 2 in column 3

AOV Means Table Report

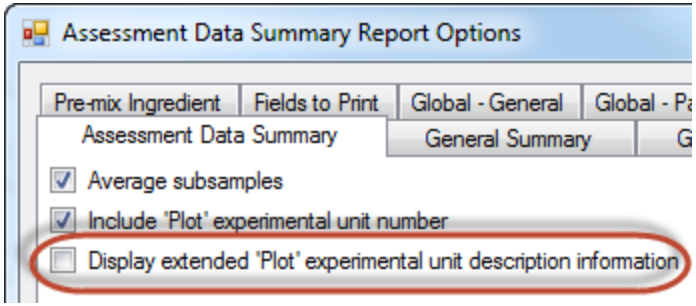
- Define mean symbol when AOV cannot detect significant differences between means (previously was always ‘a’)

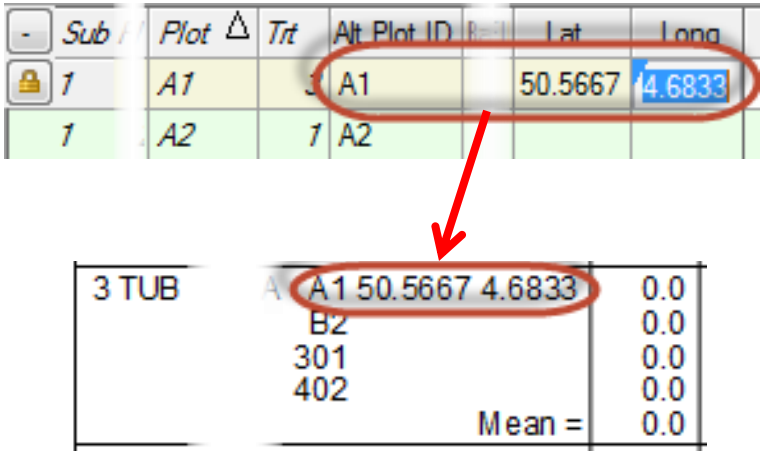


Rating Type Rating Unit			PHYGEN %
Trt Treatment No. Name	Rate Rate Unit	Appl Code	1
1 Untreated Check		ABC	0.0 --
2 TUB	0.5 l/ha	ABC	0.0 --
3 TUB	1 l/ha	ABC	0.0 --
4 TILT 250	0.5 l/ha	ABC	0.0 --
5 MICO 60 FUNGOL	1.5 l/ha 1.25 l/ha	AB C	0.0 --
Treatment F			0.000
Treatment Prob(F)			1.0000

Other Report Changes

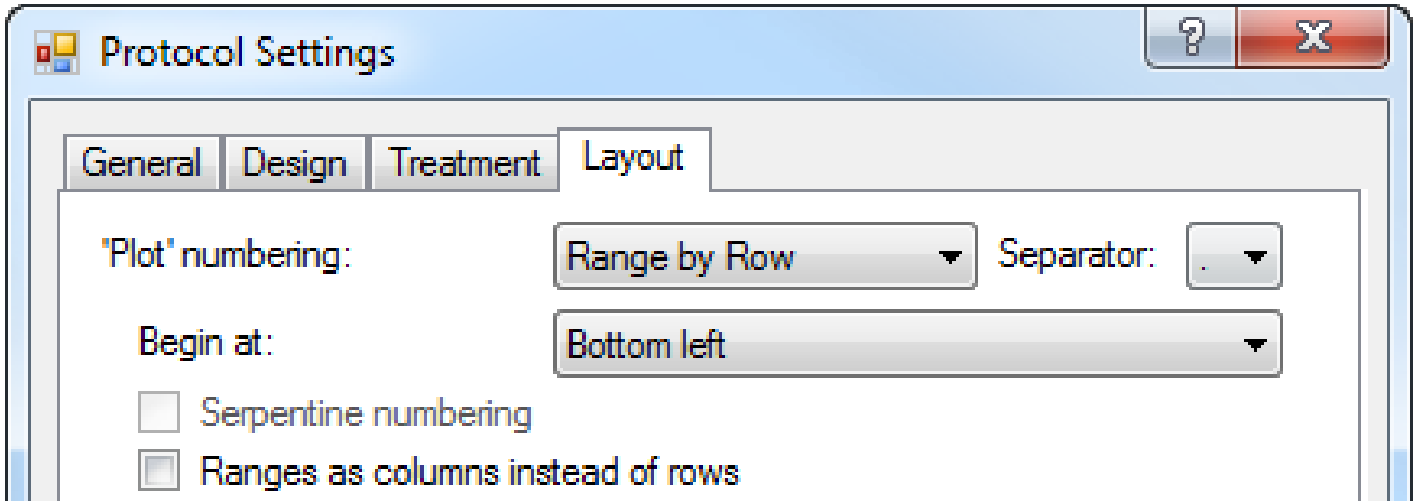
- Include images in reports printed to Excel (Trial Map, Assessment Map, etc.)
- Assessment Data Summary report option prints extended plot information columns





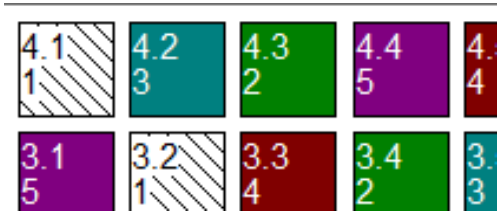
Create Protocol – Layout tab

- 'Range by Row' plot numbering uses trial map row & column as plot numbers (frequently used in variety trials)



Create Protocol – Layout tab

- Range by Row plot numbers display on:
  - Trial Map
  - Assessment Editor
  - Reports

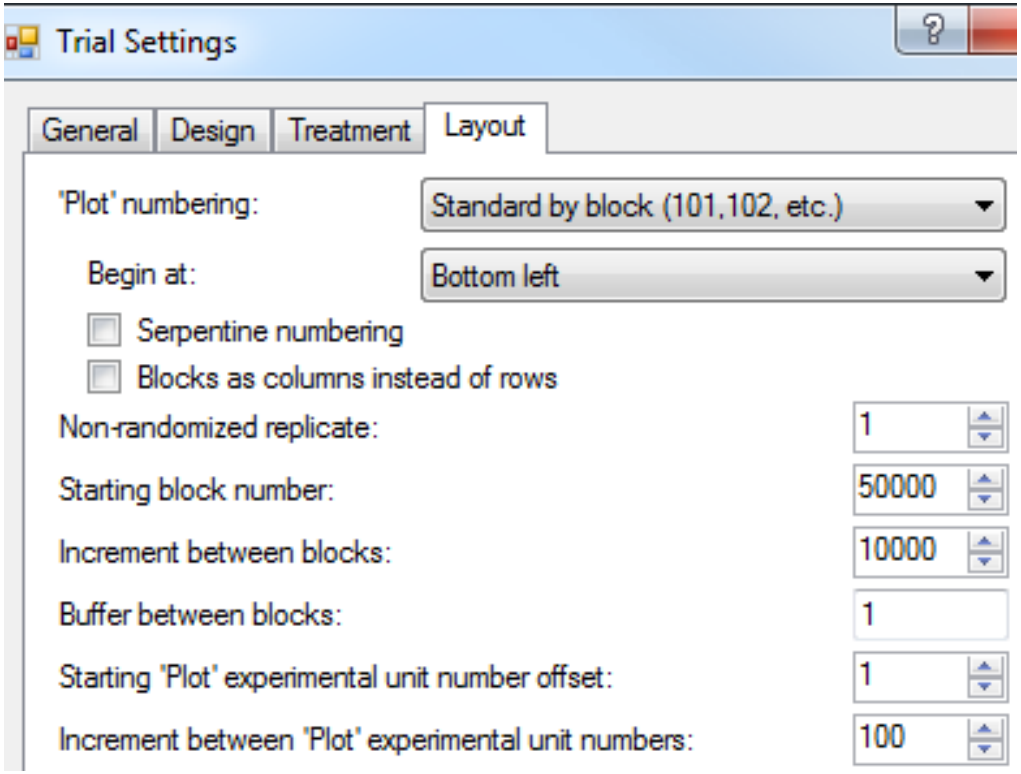


Trt No.	Rep 1	2	3	4	Notes
1	1.1	2.4	3.2	4.1	
2	1.2	2.3	3.4	4.3	
3	1.3	2.1	3.5	4.2	
4	1.4	2.5	3.3	4.5	
5	1.5	2.2	3.1	4.4	

+	Sub	Rp	Bk	Col	Plot △	Trt
🔒	1	1	1	1	1.1	1
	1	1	1	2	1.2	2
	1	1	1	3	1.3	3
	1	1	1	4	1.4	4
	1	1	1	5	1.5	5
	1	2	2	1	2.1	3

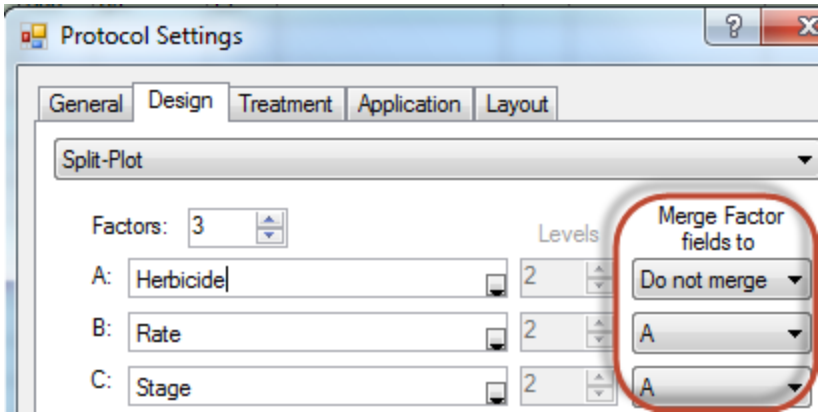
Create Protocol – Layout tab

- Define very large plot numbers



Create Trial - Merge Factor to

- New Settings option to define auto-merge actions for combining factors when creating a multi-factor trial (e.g. copying rates or growth stages to factor that defines tested products)



Create Trial - Merge Factor to

- These protocol treatments:

Trt Line	Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Growth Stage	Appl Code
1			Start of Factor A (Herbicide)							
2	1	HERB	Tub	500	g/L	EC				
3	2	HERB	Tilt	600	g/L	EC				
4			Start of Factor B (Rate)							
5	1		Low rate				25	g AI/ha		
6	2		High rate				50	g AI/ha		
7			Start of Factor C (Stage)							
8	1		Early						EAPOCR	A
9	2		Late						LAPOCR	B

Create Trial - Merge Factor to

- Result in these trial treatments

Trt Line	Trt No.	Type	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Factor ID	Level No.
1	1	HERB	Tub	500	g/L	EC	25	g AI/ha	EAPOCR	A	A	1
2	1		Low rate				25	g AI/ha			B	1
3	1		Early						EAPOCR	A	C	1
4	2	HERB	Tub	500	g/L	EC	25	g AI/ha	LAPOCR	B	A	1
5	2		Low rate				25	g AI/ha			B	1
6	2		Late						LAPOCR	B	C	2
7	3	HERB	Tub	500	g/L	EC	50	g AI/ha	EAPOCR	A	A	1
18	6		Late						LAPOCR	B	C	2
19	7	HERB	Tilt	600	g/L	EC	50	g AI/ha	EAPOCR	A	A	2
20	7		High rate				50	g AI/ha			B	2
21	7		Early						EAPOCR	A	C	1
22	8	HERB	Tilt	600	g/L	EC	50	g AI/ha	LAPOCR	B	A	2
23	8		High rate				50	g AI/ha			B	2
24	8		Late						LAPOCR	B	C	2

Tasks

- Outlook Appointment starting time used as the starting time for tasks ARM creates in Outlook.
- Saves 'Selected Studies' for current Master Calendar as default the next time ARM is opened.

Study Rules

- Now anyone can add rules to a study
  - Use 'Permissions' to set who can edit rules
  - Protocol author can change all rules

Allows contractors to add rules for in-house staff with contracted trials

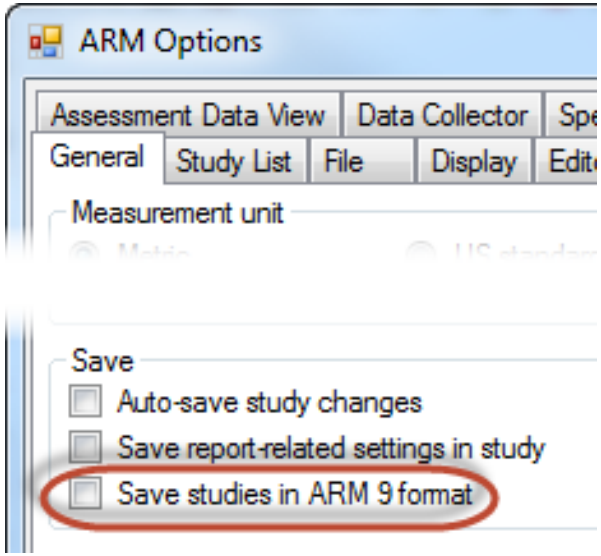
Study Rules

Rule	Rule ID	Editor	Field	Condition	Permissions	Rule Details
1	Required	Site Description	General Trial - Latitude of LL Corner °	one-year/interim	Me and my deputies	required for site visit
2	Required	Site Description	General Trial - Longitude of LL Corner °	one-year/interim	Me and my deputies	required for site visit
3	Recommended	Site Description	Soil - Fertility Level	one-year/final/m	Me and my deputies	used to group trials fo
4	Recommended	Site Description	Moisture - Overall Moisture Conditions	one-year/final/m	Me and my deputies	used to group trials fo

Tools – Options, General tab

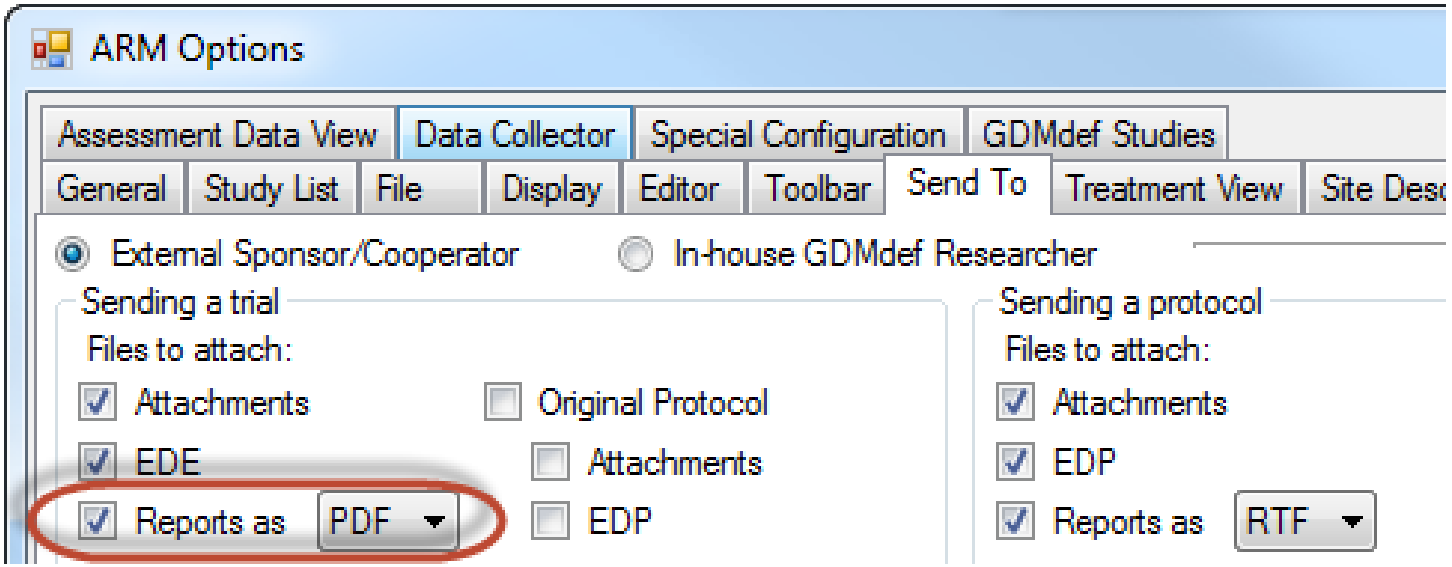
Automatically save studies in ARM 9 format

- Creates protocols and trials as .prt9/.dat9
- Avoids prompting to save in ARM 9 format to keep all information when is currently in .prt8/.dat8 format



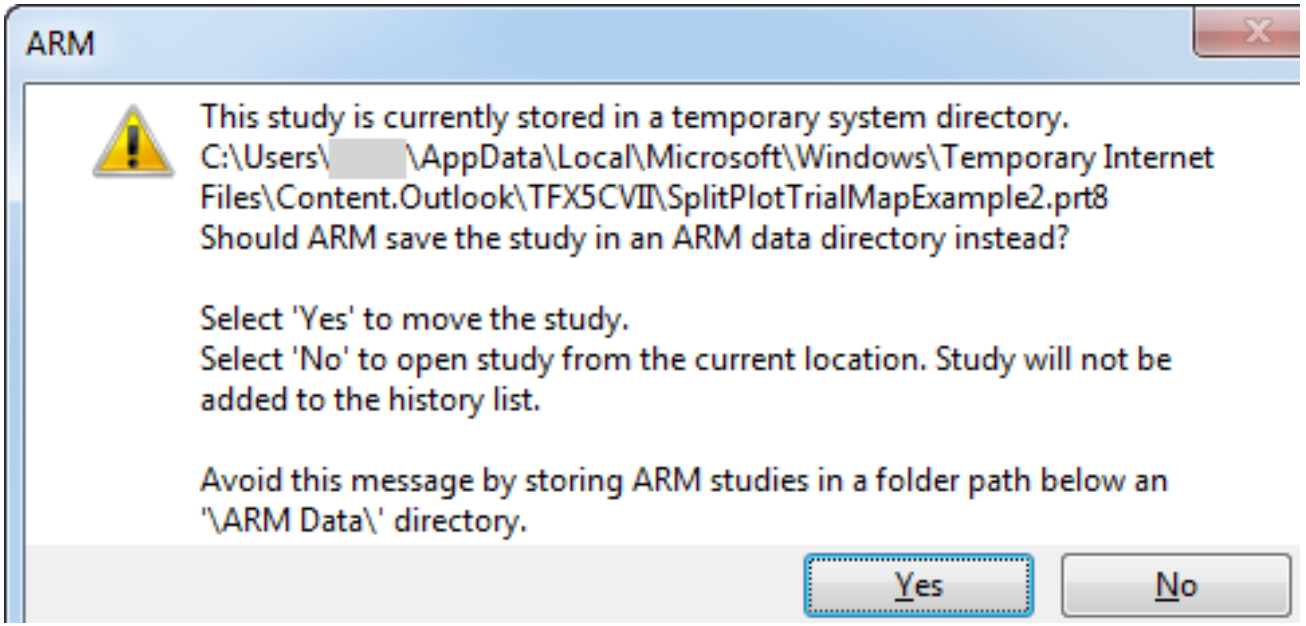
Tools – Options, Send To tab

- Option to attach reports in PDF format when sending trial results or a protocol by e-mail



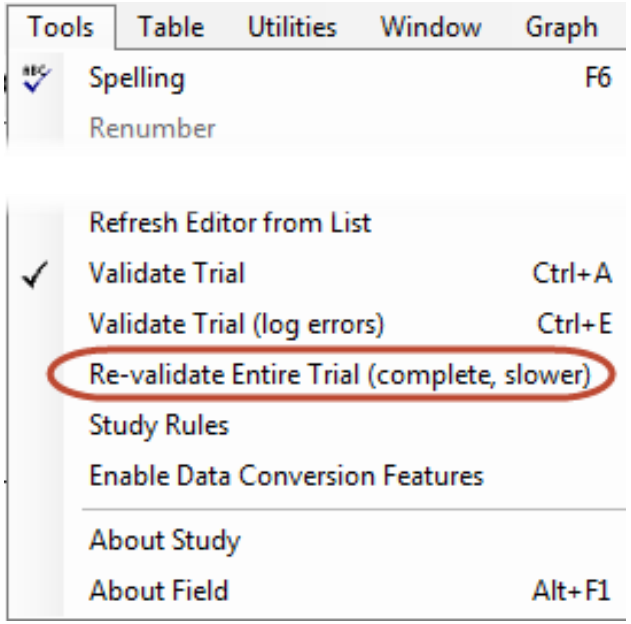
File – Open

- When ARM is copying a study from a temporary location to study directory, any read-only protection is removed



Re-validate Entire Trial

- Tools - Re-validate Entire Trial
  - Checks every field, including fields marked "already been checked"
  - May find errors that are preventing a trial from exporting



Summary Across Trials 8

- Summaries with large number of data columns, or of trials with many missing data points, are now ~10x faster
- "Display AOV Means Comparison letter" graph options are active
- Analyze one replicate strip/demo trials
- Summary Report option to include adjusted treatment means