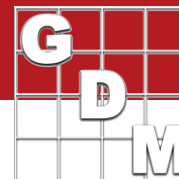# Arrange blocks according to known variation

Most trials use rectangular blocks, based on the assumption that the site variation is a known gradient. However, some trials have irregular known variation at the trial site. For example, nematode populations vary wildly, thus an initial assessment of the trial site variation is performed to understand the population. This measured variation is used to arrange homogenous blocks.

Although the ARM Trial Map feature does not directly support this type of blocking, use the following procedure to achieve this type of blocking in an ARM trial.

1. Create an ARM trial with the proper number of treatments and replicates for the experiment.
   Click **Accept Current** on the Trial Map during trial creation (we will update it in the next steps).

2. Copy the plot description information of the trial, using the **Copy** button on the Assessment Data editor:

3. Open an empty Excel spreadsheet and **Paste** this information <u>twice</u>, once in cell **A1** and again in cell **H1**.

4. Enter the initial assessment in Column **F**, matching on plot numbers:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Rep	Blk	Col	Plot	Trt	**Population**		Rep	Blk	Col	Plot	Trt	
2	1	1	1	101	3	45		1	1	1	101	3	
3	1	1	2	102	1	33		1	1	2	102	1	
4	1	1	3	103	4	54		1	1	3	103	4	

5. Sort columns **A-F** by column **F**, either ascending or descending. (We will sort low-to-high in this example.)

6. Replace Column **A** values (cell **A2**, **A3**, …) starting with 1 for the first n rows where n=number of treatments.

7. Continue the previous step for the remaining replicates of the study, to update the entire Column **A**.
   (Our example: n=5 treatments and 4 reps, so enter 1,1,1,1,1,2,2,2,2,2,3,…)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**Rep**	Blk	Col	Plot	Trt	Population		Rep	Blk	Col	Plot	Trt	
2	1	3	2	302	2	17		1	1	1	101	3	
3	1	4	4	404	4	18		1	1	2	102	1	
4	1	4	1	401	1	23		1	1	3	103	4	
5	1	4	3	403	2	27		1	1	4	104	2	
6	1	1	4	104	2	28		1	1	5	105	5	
7	2	2	3	203	5	31		2	2	1	201	2	
8	2	1	2	102	1	33		2	2	2	202	3	

8. Copy Column **L** and paste over Column **E**, to overlay the original treatment randomization onto the sorted plots.

9. Copy Columns **A** to **F** as a block and paste into an empty data column in ARM of the new trial from step 1.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Rep	Blk	Col	Plot	**Trt**	Population		Rep	Blk	Col	Plot	Trt	
2	1	3	2	302	**3**	17		1	1	1	101	3	
3	1	4	4	404	**1**	18		1	1	2	102	1	
4	1	4	1	401	**4**	23		1	1	3	103	4	

10. Select **Yes** on the prompt in ARM to change the randomization:
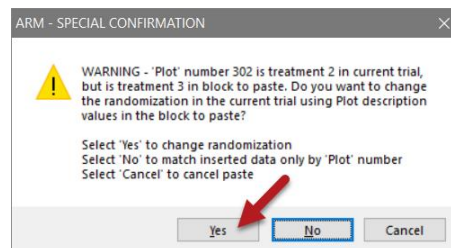
11. Verify new blocking with Color by > Replicate on Trial Map: