

Custom Restrictions in form-U-net

Last Modified on 01/19/2022 3:43 pm CST

Example: An additive needs to be added as a percentage of the finished blend (such as 2 Qts per ton of the blend) or as a quantity per a given quantity of a product (such as 2 Qts per ton of Urea).

The *Insert Custom Column* feature in form-U-net can be used to add the additive as a percentage of the finished blend. This is found at *Material Groups / Edit Selected Material Group / Edit Data*. For this example, a product called GroMore will be used which has been added to the *MyBlend1* Material Group. GroMore is used at 2 Qts per ton of the finished blend.

Material Group MyBlend1: Edit Full Data

Mix Name:	Restriction Info:						Data Value:			
Mix Name	N	P	K	S	Mg	Zn	B	Ca	DEN	
Urea (46-0-0)	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.6700	
DAP (18-46-0)	18.00	49.00	0.00	0.00	0.00	0.00	0.00	0.00	30.7702	
MESZ (12-40-0-10S)	12.00	40.00	0.00	10.00	0.00	0.00	0.00	0.00	30.7692	
Muriate of Potash (0-0-60)	0.00	0.00	60.00	0.00	0.00	0.00	0.00	0.00	31.7899	
Ammonium Sulfate (21-0-0)	21.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	36.3597	
90% Sulfur (0-0-0-90S)	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	30.7692	
Zinc Sulfate (36% Zn)	0.00	0.00	0.00	20.00	0.00	36.00	0.00	0.00	26.7301	
Borate (14%B)	0.00	0.00	0.00	0.00	0.00	0.00	14.30	0.00	44.4395	
GroMore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.8000	
Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	

Save Changes Reset Grid

To insert the custom column, select a cell to the right of where the new column needs to be inserted. Right-click in the cell, and select *Insert Custom Column*.

Material Group MyBlend1: Edit Full Data

Mix Name	N	P	K	S	Mg	Zn	B	Ca	DEN
Urea (46-0-0)	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.6700
DAP (18-46-0)	18.00	49.00	0.00	0.00	0.00	0.00	0.00	0.00	
MESZ (12-40-0-10S)	12.00	40.00	0.00	10.00	0.00	0.00	0.00	0.00	
Muriate of Potash (0-0-60)	0.00	0.00	60.00	0.00	0.00	0.00	0.00	0.00	
Ammonium Sulfate (21-0-0)	21.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	36.3597
90% Sulfur (0-0-0-90S)	0.00	0.00	0.00	90.00	0.00	0.00	0.00	0.00	30.7692
Zinc Sulfate (36% Zn)	0.00	0.00	0.00	20.00	0.00	36.00	0.00	0.00	26.7301
Borate (14%B)	0.00	0.00	0.00	0.00	0.00	0.00	14.30	0.00	44.4395
GroMore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.8000
Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0000

The *Insert Custom Column* window opens. Enter the *Name* for the new column, set the *InputScale* to 100, and select the *Prompt Lower* option. In this example, the *Type* is set to *OtherRes*. Then select the **Insert Column** button.

Insert Custom Column

Name

Type

Price

LowerBound

UpperBound

InputScale

Prompt Lower Prompt Upper

After the column has been inserted, values need to be added so the correct quantity of GroMore is added to the finished blend. The finished blend is 2,000 lbs, so type '2000' in the cell where the GroMore row and the O1_RES column meet. The quantity of GroMore to add to the blend is based upon the weight of the GroMore item. It weighs 8.8 lbs/gal. The two Qts of GroMore to be added to each item used in the blend would be 4.4 lbs. Due to the way the calculation is structured, this is expressed as a negative number when it is added to the *Edit Data* grid. Each item's cell in the O1_RES column needs to have '-4.4' added as shown below.

Material Group MyBlend1: Edit Full Data

Mix Name:	Restriction Info:						Data Value:			
Mix Name	N	P	K	S	Mg	Zn	B	01_RES	Ca	
Urea (46-0-0)	46.00	0.00	0.00	0.00	0.00	0.00	0.00	-4.40	0.00	
DAP (18-46-0)	18.00	49.00	0.00	0.00	0.00	0.00	0.00	-4.40	0.00	
MESZ (12-40-0-10S)	12.00	40.00	0.00	10.00	0.00	0.00	0.00	-4.40	0.00	
Muriate of Potash (0-0-60)	0.00	0.00	60.00	0.00	0.00	0.00	0.00	-4.40	0.00	
Ammonium Sulfate (21-0-0)	21.00	0.00	0.00	24.00	0.00	0.00	0.00	-4.40	0.00	
90% Sulfur (0-0-0-90S)	0.00	0.00	0.00	90.00	0.00	0.00	0.00	-4.40	0.00	
Zinc Sulfate (36% Zn)	0.00	0.00	0.00	20.00	0.00	36.00	0.00	-4.40	0.00	
Borate (14%B)	0.00	0.00	0.00	0.00	0.00	0.00	14.30	-4.40	0.00	
GroMore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2000.00	0.00	
Product	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Save Changes

Reset Grid

This same method can be used when adding an additive to a single item in the group. In this example, the -4.4 would only be added to that one item in the 01_RES custom column.

The final step is to edit the restriction name in *Edit Restrictions*. We'll change the restriction's name to *GroMore* (0=Yes).

Material Group MyBlend1: Edit Restrictions

Restriction Name:		Restriction Info:						
Restriction Name	Code	Min	Price	Lower Bound	Upper Bound	Input Scale	Unit	
Nitrogen	N	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Phosphate	P	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Potash	K	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Sulfur	S	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Magnesium	Mg	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Zinc	Zn	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Boron	B	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
GroMore (0=Yes)	01_RES	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
Calcium	Ca	0.0000	\$0.0000	-Inf	Inf	100.00	Pound	
CuFt or Gal/Ton	DEN	0.0000	\$0.0000	-Inf	Inf	2000.00	Pound	
Weight balance	Wt	0.0000	\$0.0000	0.000	0.000	1.00	Pound	

Save Changes Reset Grid

With this restriction, when adding 2 Qts per ton of GroMore to the blend, enter '0' for that item on the *Formulation* window. The new restriction is displayed on the *Formulation Request* grid. In the example below, a 6 ton blend will be used requesting GroMore (see the 0 entered in the GroMore field). The 0 signifies to use GroMore on this blend.

The results show that 3 Gal. (12 quarts) of GroMore is the correct result for this request. The *Mix Results* grid shows the products rounded to their nearest *Mixing Unit* when *Mix in Mixing Units* is selected for the Material Group. Smaller batch sizes may display a rounded result that will look incorrect. View the *Mixing Sheet* to verify the result is actually correct.

Formulation Request ▲

		Per Acre	Analysis
Nitrogen	>	80.00	Lb. 28.27
Phosphate	>	40.00	Lb. 14.13
Potash	>	30.00	Lb. 10.60
Sulfur	>	5.00	Lb. 1.77
Magnesium	>	--	Lb. 0.00
Zinc	>	--	Lb. 0.00
Boron	>	--	Lb. 0.00
GroMore (0=Yes)	>	0.00	Lb. 0.00
Calcium	>	--	Lb. 0.00

Acres: Rate Per Acre:

Batches: Max Lbs/Batch:

Formulation Information ▲

Description/Comments:

Enter comments here...

Formulation Results ▲

Mixed Fert	\$455.25 / Ton	\$2,731.49
Spreading		\$0.00
Mixing Charge		\$0.00
Applied	\$455.25 / Ton	\$2,731.49
Other		\$0.00
Total		\$2,731.49
42.4 Acres	\$64.42 / Acre	
6.000 Ton	1 Batch	
42.4 Acres/Batch		
283 Lbs/Acre		
5.16 CuFt / Acre		
54.8 Lbs/CuFt		218.9 CuFt

Mix Results ▲

Item Mix Name	Per Batch	Unit
UREA (46-0-0)	6081	Lb.
DAP (18-46-0)	2611	Lb.
MESZ 12-40-0-10S	1042	Lb.
0-0-60	2120	Lb.
90% Sulfur	120	Lb.
GroMore	3	Gal.
Product	12000	Lb.