

# Formulation by Residual Product Limits

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## Overview

There are fertilizer mixes where the Guaranteed Analysis request is known as well as the specific percentages of products to fulfill the request. In some cases, it may be important to formulate in this manner to achieve a specific salt out temperature for liquid mixes that may utilize standard Least Cost Formulation. When requesting an analysis, the K request is filled first based on the percentage of each product indicated. Any contributing nutrients for N or P from products fulfilling K are subtracted from the original request. Next, P is fulfilled using the same method, and then N. This functionality is shared for both Blend Tickets and Field Plans utilizing the same setup.

## Setup

To turn on this functionality for the Blend Ticket formulation process, go to *Blending / Setup / Location Preferences*. On the *Blend Setup* tab, select the *Allow Formulation By Residual Product Limits* option.

When adding a Blend Ticket or Field Plan, a **Product Limits** button will display. This functionality is only available when formulating by Guaranteed Analysis such as formulating by the Ton, Tonne, or Acre.

When selecting the **Product Limits** button, all *Active* products in the selected product set with a nutrient contributing value of N, P, and K display in the *Product Limits* grid.

If there are specific situations where this functionality will be used, it may be best practice to create a new product set containing only the products for this scenario.

## Process

After the setup is complete, Agvance Blending or Planning is ready for formulation using Residual Product Limits.

In this example, a 12-ton request for a 4-11-11 liquid blend will be fulfilled using the following parameters:

- 100 percent of the K request will be fulfilled by 0-0-62.
- 50 percent of the P request will be fulfilled by 11-37-0.
- 50 percent of the P request will be fulfilled by 8-24-0.

The contributing N from both 11-37-0 and 8-24-0 will be subtracted from the requested N, and the remaining N will be fulfilled 100% by 32-0-0.

Below is an example of how the *General* tab of the Blend Ticket would be filled out for this scenario.

Add Blend Ticket # 210

General | Products | Prices | Blend

Customer ID: fAndBa ? View Maps Zone: All Crop: \_\_\_\_\_  
 Field ID: BA-01 ? Plan: [Red] Placement: \_\_\_\_\_  
 Crop Chemistry: \_\_\_\_\_

Ordered Date: 11/16/2016  
 Loaded Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Time: 8:22:50 AM

<Billing Notes> \_\_\_\_\_  
 <Quantity>: 12 Tons Product Set: Liq Product Lmt  
 Apply New Tons Optimize By: Average Cost  
 Import Blend Price By: Products

Registration # \_\_\_\_\_  
 <N>: 4.00 <P>: 11.00 <K>: 11.00 HA: \_\_\_\_\_  
 <Ca>: \_\_\_\_\_ <Mg>: \_\_\_\_\_ <Zn>: \_\_\_\_\_ <Fe>: \_\_\_\_\_ <Mn>: \_\_\_\_\_ <Cu>: \_\_\_\_\_ B: \_\_\_\_\_

	Product Name	N	P	K
1	11-37-0	0.0000	50.0000	0.0000
2	8-24-0	0.0000	50.0000	0.0000
3	32-0-0	100.0000	0.0000	0.0000
4	0-0-62	0.0000	0.0000	100.0000

Formulate By:  
 Lbs of Plant Food  
 Guaranteed Analysis

Lbs of Analysis: 2000  
 Gal of Analysis: \_\_\_\_\_

Product Limits  
 Start With Products  
 Load Nut Recs ?

Formulate

View Analysis Show Splits Additional Info... Edit to Actual Capture Blender Save Cancel

Print on Save

Upon formulation, the results are as follows.

General Products Prices Blend

Tons  Set  Target lbs of Analysis

	<Product Name>	Rate/Ton	Unit	Total Product	Unit	Blended	Blended Unit	Scale	Order
1	Water	856.307	Lbs	10275.684	Lbs	10276.000	Lbs	3	1
2	11-37-0	297.291	Lbs	3567.492	Lbs	3567.000	Lbs	3	2
3	8-24-0	458.343	Lbs	5500.116	Lbs	5500.000	Lbs	3	3
4	32-0-0	33.220	Lbs	398.640	Lbs	399.000	Lbs	3	4
5	0-0-62	354.839	Lbs	4258.068	Lbs	4258.000	Lbs	3	5

View Analysis

	<N>	P	K	S	HA	Ca	Mg	Zn	Fe	Mn	Cu	B
Ordered	4.00	11.00	11.00									
Blended	80.00	220.00	220.00	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Analysis	4.00	11.00	11.00	0.000	0.0000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Density	<input type="text" value="9.851"/>	% Water	<input type="text" value="42.815"/>	% Clay	<input type="text" value="0"/>
Gal/Ton	<input type="text" value="203.02"/>	Total Gal	<input type="text" value="2436.24"/>	Est Salt Out Temp	<input type="text" value="N/A"/>
Lbs/Ton	<input type="text" value="2000"/>	Total Lbs	<input type="text" value="24000"/>	Est Temp Change	<input type="text" value="0"/>

Print on Save