Use of Enzymes in BroilerOpt[™] Feed Program

One must add enzymes as ingredients. Then give them nutrient values and a cost.

Now you can use them in two ways.

First, we can put an ingredient restriction of the dosage, for example, 0.05 % in BOTH the minimum and maximum values. If you put it in the minimum only, the program will use more, if possible, generating more benefits than possible. If we put the value only in the maximum level, there is the chance that the least cost program would solve to less than the expected dose, expecting a linear response from the treatment, which may not happen.

Also, any unused enzyme should be eliminated from use with a -1 in the max column for each diet.

Second, the enzyme can be added after formulation. That is to say that one can solve to an existing dietary specification and then the enzyme added "On Top" of the existing specifications. This can be done but the outcomes have been hard to predict.

To do this with BroilerOpt, here is the procedure. Have the enzyme in the matrix as an ingredient, then click on the button on the "Current Flock" tab below "View Report". A window opens, enter the matrix number of the ingredient (it can be seen by opening the "Show Ingredient Info" window and hovering the mouse over the ingredient, or count the rows to the ingredient. When you enter the number, the name will appear. If needed, you can use the ingredient name

to	search for the ri	ight ingredie	ent number.	on	Current Flock				
ocation		Current Flock		Current Calculation	Open Diets Amino Acids Or When Ly:	Treatment			
Ι	Current Calculation	Open Diets Cr When Ly Amino Acids		Save Diets	ADD an Enzyme onto the Existing Formualti				
-	Save Diets	Diet Type Diet Change Feed Cost	Starter Grow 1/8/2014 1/8/2 1014.3	Save All Current Use Calibration Diets	Ingredient No.		Zero or No Nu Ingredient Nu Click Cancel t		
دو	Save All Current	Energy Protein Arginine	2950 23.00 1.411	PCOST - Run LP	Diets to receive Treatment Click Current Will continue t Beturn and er	Dose Diet #1 F Diet #3	treatment		
	Use Calibration Diets	Histidine Lysine Tryptophan Phe + Tyros	0.564 1.209 0.271 1.059	Report Enzyme Top Off		Diet #2 Diet #4 Calc for Impact of Enzyme on Current Diets. o be used for optimization until turned off. ter ZEBO to turn off Enzyme Top Off			
lay	/s Run LP View Report	Met_Cys Methionine Threonine Leucine	0.780 0.480 0.776 1.828 0.876]				
•	Enzyme Top Off	Valine Ether Extrac Dry matter %	0.992 5.355 86.77						

Feed2Gain LLC





Open Die	ts Cr W	o Ac hen o A	cids Lysine Chano V Feed2Ga	es. ratio	Show Pink	((
Diet Type	Starter	G				
Diet Change	1/8/2014	1/		Copy to Clipboard		
Feed Cost	1015.7					
Feed Weiał	0.550		Comparison	Current	Previous	E
Energy	3019		Flock Sex	Mixed	Mixed	
Protoin	23.94		Live Weight	2.840	2.840	
Australia	1,500	-	Feed/Gain	1.788	1.864	
Arginine	1.569		Age	47.35	48.68	
Histidine	0.564		Cost / Bird	4.5909	4.7708	
Lysine	1.303		Cost/WT	1.6165	1.6799	
Trvptophan	0.297		Feed Cost	4.5909	4.7708	
Phe + Tyros	1 059		Cost milling	0	0	
Phenylalani	1 805		energy per	5717.6	5831.6	-
Mat Qua	0.017	-	ByFlock	0.407	0.500	-
Met_Cys	0.917		Breast Meat	0.497	0.523	-
Methionine	0.549		Leg I high	0.499	0.497	-
Threonine	0.881		Male Wt	3.054	3.051	-
Leucine	1.828		Female Wt	2.626	2.629	_
leoloucino	0.988		F2G M	1.726	1.798	_
ISOleucine	0.300	-	F2G F	1.860	1.940	
Valine	1.142		T Cost M	4.7581	4.9394	
Ether Extrac	5.355		T Cost F	4.4236	4.6023	
Dry matter %	86.77		M Cost/WT	1.5582	1.6188	
Crude Fiher	2 995		F Cost/WT	1.6843	1.7508	
			D. Flash			

An input box will be there for the dose, again, like 0.05 %. There will be check boxes for each diet so that the diets receiving application can be identified. Close the window and the "Top

Off" button will say "Enzyme Turn off" so you can turn off the addition later. The use of the enzyme in formulation will be turned off while the Top Off application is used.

When you run the "Current Calc", you have an option to use the enzyme or not. A yes or no on the window that opens determines if the enzyme is used or not. Here is says "Rovabio Excel 0.05%" on top. The "Rovabio Excel 0.05%" is the name I gave the enzyme.

If the "Top Addition" is used, the growth is determined and placed in the Current Flock window. Also, it is put in the current column of the "Keep Track" Window.

You can see that the picture on the left you can see the feed conversion and weight before use of the enzyme and on the right, the results with the enzyme "on top" of the same formulas. The Nutrient table on the left has the total nutrition from that diet, the formulated values and the "top" application of the enzyme, plus the cost of the enzyme added to the feed formulation. I have the "Keep Track" window as well, where the last treatment is in the left most column. You can see the enzyme improved the cost (growth was stopped at the target weight) and feed conversion was lower.

With the "Top Addition" on, the optimization tab operates with the enzyme addition to the diets chosen. The enzyme cost is part of the determination.

Frank