Perspectives from a Commercial Nutritionist: Considerations to implement an alternative ingredient or raw material

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Perdue Animal Nutrition

Technical Manager – Poultry

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Where are we going?

- Background – What I do as a technical manager/nutritionist
- Scope of the Poultry Industry – “Lay of the Land”
- Considerations to implement an alternative ingredient or raw material
- Final Thoughts/Questions

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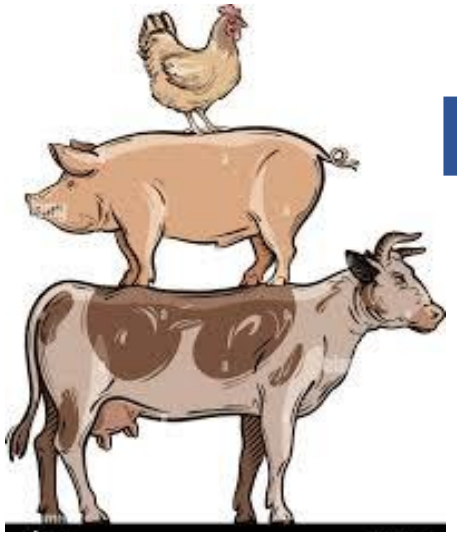

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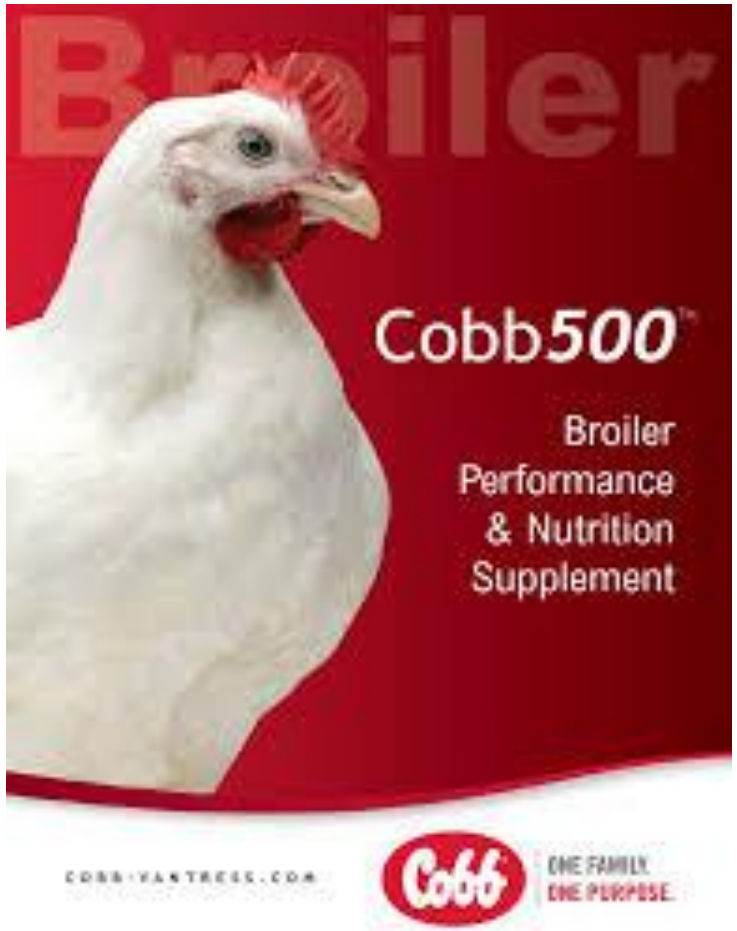
BASF

Considerations to implement an alternative ingredient or raw material

Evaluating Feed Ingredients

Provide a recommendation to nutritionists considering its use as an alternative feedstuff in commercial production

What are you feeding?
What are their nutrient requirements?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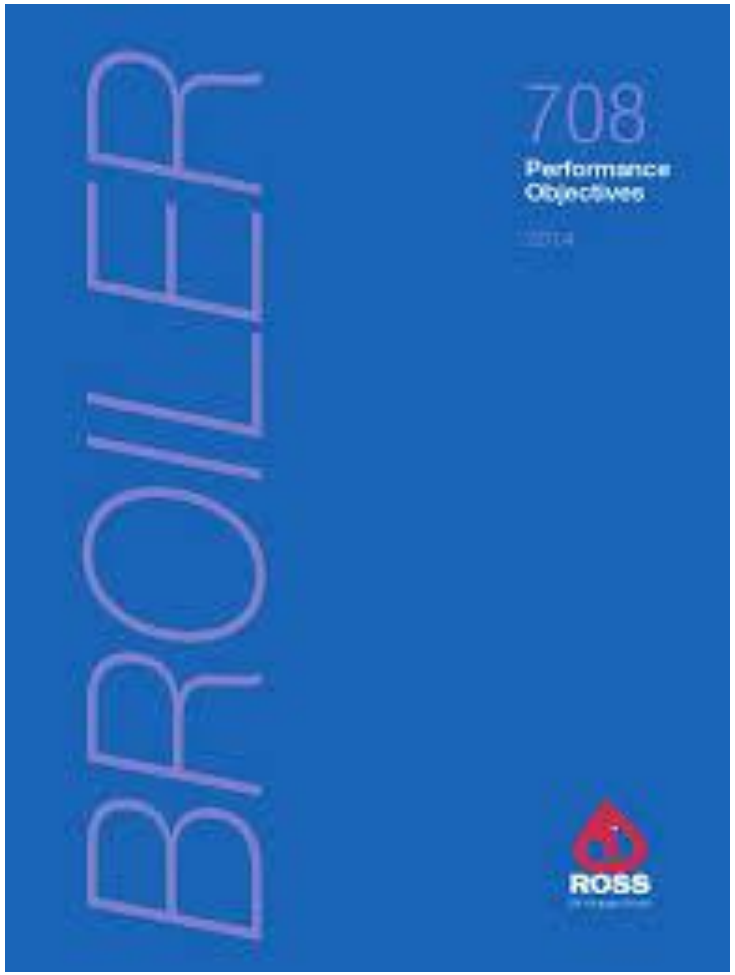
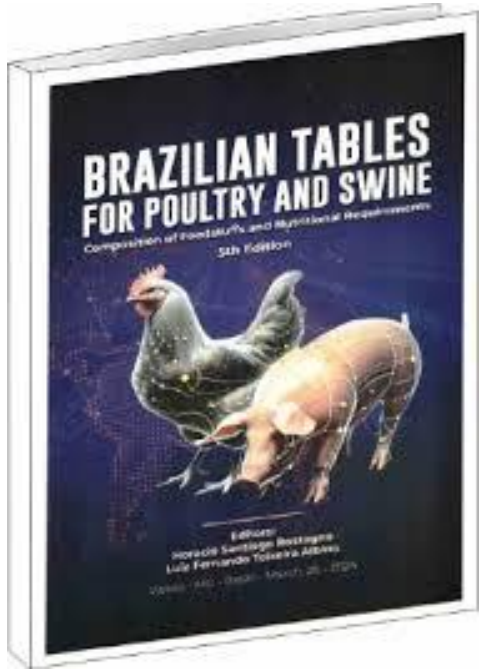
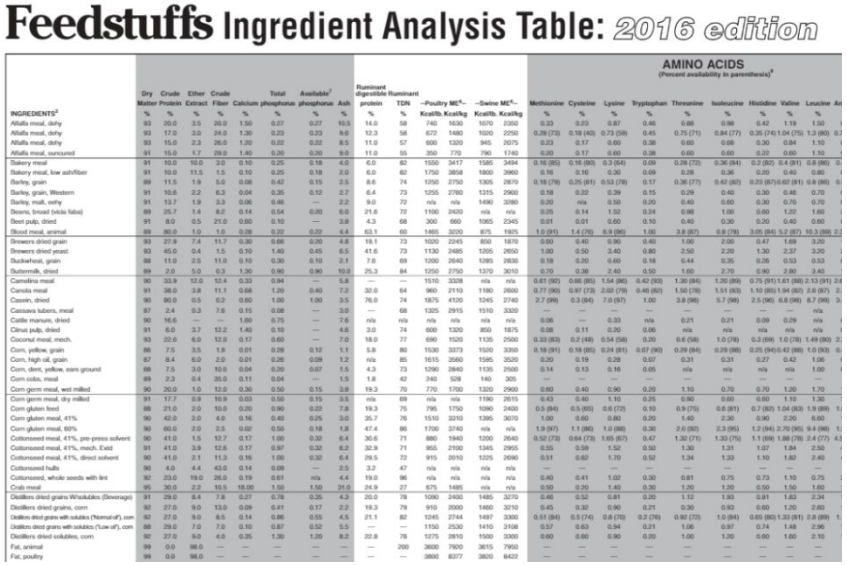
Summary of Performance Standards


BROILER
708
Performance
Objectives
ROSS

Nutrient Composition

- Proximate analysis (Crude protein, fat, moisture, ash, fiber)
- Mineral analysis (Ca, Phos., Na)
- Amino acid analysis (Methionine, Lysine, Threonine, Valine, Arginine, Isoleucine)
- Book Values: Feedstuffs Table, Brazilian Tables



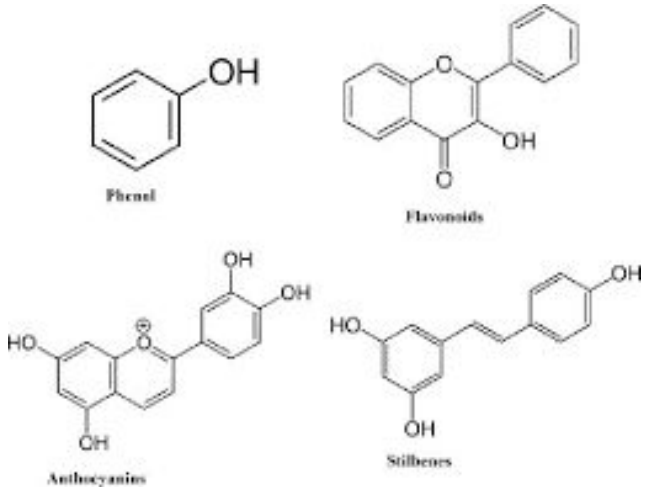


Characterizing the Nutritional Profile: Energy & Protein

- "Principle currency of nutrition"
- Most expensive nutritional parameter
  - Energy available to the bird from its diet for maintenance, growth, and production (e.g. muscle, eggs)
  - Cereal grains = primary energy ingredients
- Apparent metabolizable energy (AME_n) studies
- Apparent ileal amino acid digestibility (AIAAD) studies

Antinutritional Factors

- Negative impacts on performance & feed intake
- Tannins – palatability
- Maximum inclusion levels –
  - Digestibility (feather meal)
  - Residue/flavor in meat (e.g. fishmeal)
  - Coloration of meat/skin (e.g. canola meal; corn oil)



At the Feed Mill

In the Field

Southern Poultry
Feed & Research, Inc.

PERDUE®

Performance – BWG, Feed Intake, AdjFCR, Uniformity

WEEK 1

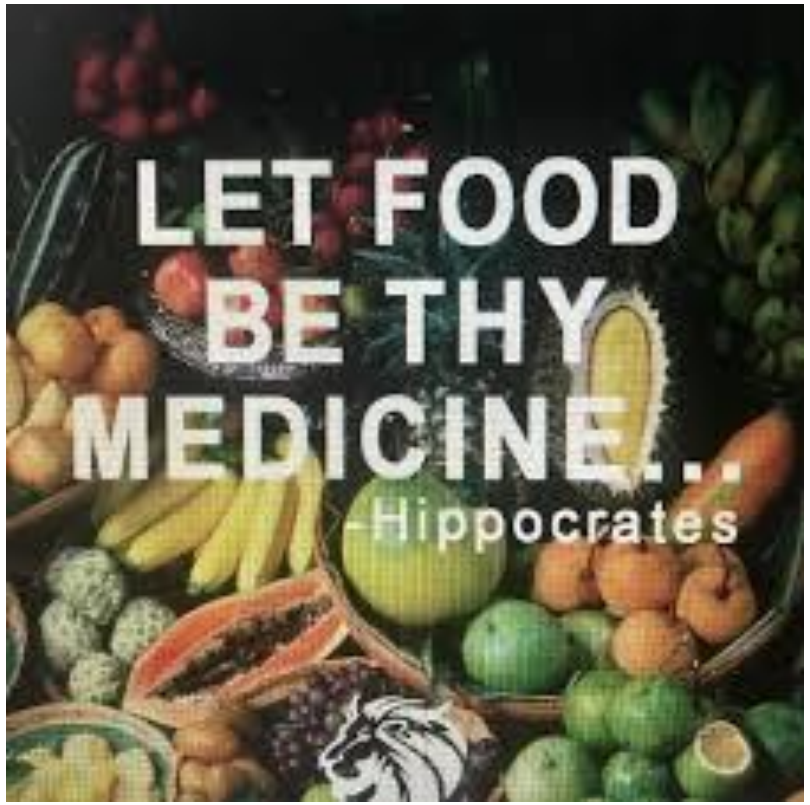
WEEK 2

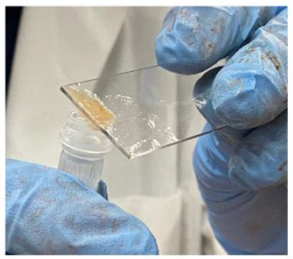
WEEK 3

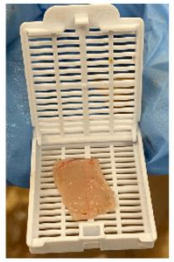
WEEK 4

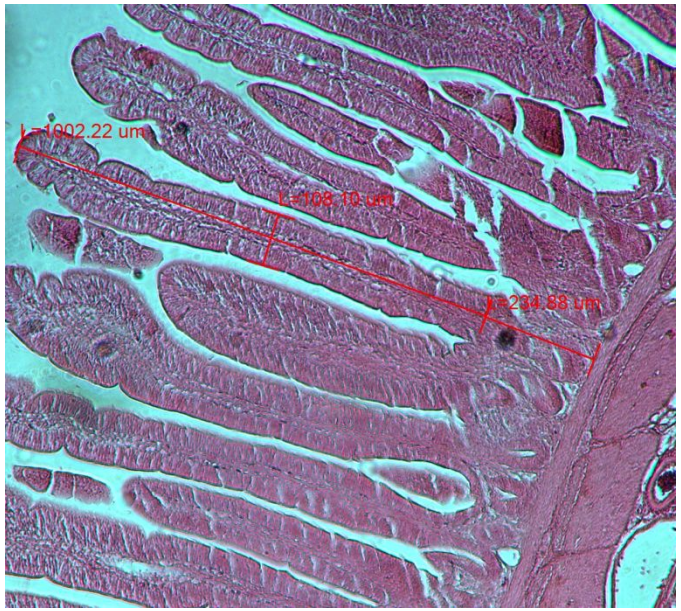
WEEK 5

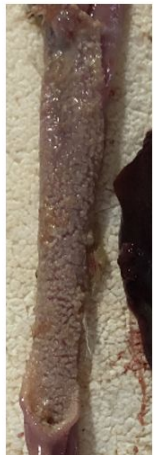
WEEK 6









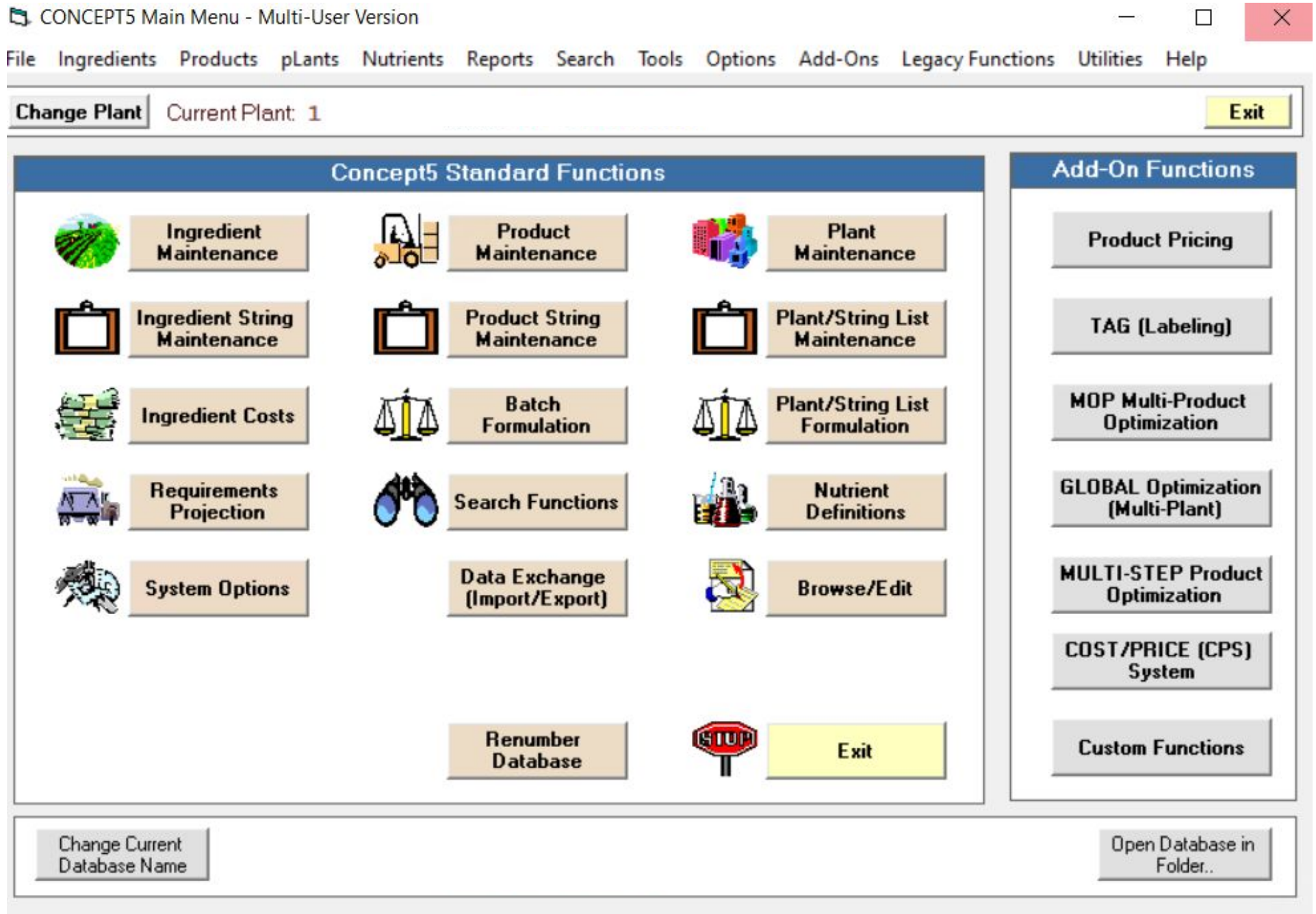


Intestinal Health Benefits/Nutraceuticals

Applying it to Production

- Purchasing/Procurement
  - Spec sheet
  - $/ton
  - Approved Supplier's List (novel or established ingredient?)
    - Samples
    - QCQA/nutrient analysis
- Nutritionist evaluates
  - Run parametrics in formulation – will it formulate in least cost formulation?
  - Quality and value ($/ton)
- Trial data & repeatability
- Bin availability at mill
- Return on Investment (ROI)
  - Cost per lb of meat

CONCEPT5


CONCEPT5 Main Menu - Multi-User Version
File
Ingredients
Products
pLants
Nutrients
Reports
Search
Tools
Options
Add-Ons
Legacy Functions
Utilities
Help
Change Plant
Current Plant: 1
Exit
Concept5 Standard Functions
Ingredient Maintenance
Product Maintenance
Plant Maintenance
Ingredient String Maintenance
Product String Maintenance
Plant/String List Maintenance
Ingredient Costs
Batch Formulation
Plant/String List Formulation
Requirements Projection
Search Functions
Nutrient Definitions
System Options
Data Exchange (Import/Export)
Browse/Edit
Renumber Database
STOP
Exit
Add-On Functions
Product Pricing
TAG (Labeling)
MOP Multi-Product Optimization
GLOBAL Optimization (Multi-Plant)
MULTI-STEP Product Optimization
COST/PRICE (CPS) System
Custom Functions
Change Current Database Name
Open Database in Folder..

Cost-benefit Analysis: Is the price of grain sorghum competitive?

		Starter Broiler Diet					
		Corn-based			Grain Sorghum-based		
Ingredient	$/lb Ingredient	%	lb	$/ton	%	lb	$/ton
Corn	0.14	56.85	1137.34	159.23	0.00	0.00	0.00
Grain sorghum	0.12	0.00	0.00	0.00	56.32	1126.33	135.16
Soybean meal, 47.5% CP	0.15	38.25	764.96	114.74	36.51	730.11	109.52
Fat, vegetable	0.51	2.32	46.42	23.67	4.45	88.97	45.37
Defluorinated phosphate	0.43	0.90	17.92	7.62	0.85	16.91	7.19
Limestone	0.02	0.14	2.71	0.05	0.22	4.49	0.09
Sodium chloride	0.05	0.43	8.56	0.43	0.43	8.68	0.43
DL-methionine	1.35	0.33	6.52	8.81	0.34	6.85	9.24
L-threonine	1.75	0.05	1.08	1.88	0.06	1.29	2.26
L-lysine	1.08	0.13	2.68	2.90	0.22	4.40	4.75
Choline chloride, 60%	0.95	0.16	3.11	2.95	0.16	3.28	3.11
Vitamin premix	8.50	0.25	5.00	42.50	0.25	5.00	42.50
Trace minerals	1.35	0.08	1.50	2.03	0.08	1.50	2.03
Phytase	1.70	0.01	0.20	0.34	0.01	0.20	0.34
Sacox 60	3.40	0.05	1.00	3.40	0.05	1.00	3.40
BMD 50	-	0.05	1.00	-	0.05	1.00	-
		100	2000	**370.55**	100	2000	**365.39**

		Grower Broiler Diet					
		Corn-based			Grain Sorghum-based		
Ingredient	$/lb Ingredient	%	lb	$/ton	%	lb	$/ton
Corn	0.14	65.36	1307.32	183.02	0.00	0.00	0.00
Grain sorghum	0.12	0.00	0.00	0.00	63.30	1265.97	151.92
Soybean meal, 47.5% CP	0.15	30.18	603.56	90.53	29.59	591.88	88.78
Fat, vegetable	0.51	1.84	36.86	18.80	4.42	88.46	45.11
Defluorinated phosphate	0.43	0.81	16.21	6.89	0.74	14.84	6.30
Limestone	0.02	0.28	5.69	0.11	0.36	7.19	0.14
Sodium chloride	0.05	0.46	9.29	0.46	0.47	9.45	0.47
DL-methionine	1.35	0.27	5.42	7.31	0.28	5.55	7.50
L-threonine	1.75	0.05	0.98	1.71	0.04	0.82	1.43
L-lysine	1.08	0.14	2.85	3.08	0.20	3.93	4.25
Choline chloride, 60%	0.95	0.16	3.12	2.96	0.16	3.22	3.06
Vitamin premix	8.50	0.25	5.00	42.50	0.25	5.00	42.50
Trace minerals	1.35	0.08	1.50	2.03	0.08	1.50	2.03
Phytase	1.70	0.01	0.20	0.34	0.01	0.20	0.34
Sacox 60	3.40	0.05	1.00	3.40	0.05	1.00	3.40
BMD 50	-	0.05	1.00	-	0.05	1.00	-
		100	2000	**363.16**	100	2000	**357.23**

		Finisher Broiler Diet					
		Corn-based			Grain sorghum-based		
Ingredient	$/lb Ingredient	%	lb	$/ton	%	lb	$/ton
Corn	0.14	69.49	1389.72	194.56	0.00	0.00	0.00
Grain sorghum	0.12	0.00	0.00	0.00	66.76	1335.29	160.23
Soybean meal, 47.5% CP	0.15	25.75	514.90	77.23	25.64	512.83	76.92
Fat, vegetable	0.51	2.32	46.46	23.70	5.11	102.28	52.17
Defluorinated phosphate	0.43	0.70	13.92	5.91	0.62	12.28	5.22
Limestone	0.02	0.37	7.31	0.15	0.44	9.74	0.19
Sodium chloride	0.05	0.48	9.56	0.48	0.49	8.72	0.44
DL-methionine	1.35	0.23	4.67	6.31	0.24	5.00	6.75
L-threonine	1.75	0.05	1.00	1.75	0.03	4.73	8.27
L-lysine	1.08	0.14	2.84	3.06	0.18	3.66	3.95
Choline chloride, 60%	0.95	0.10	1.93	1.83	0.1	2.01	1.91
Vitamin premix	8.50	0.25	5.00	42.50	0.25	5.00	42.50
Trace minerals	1.35	0.08	1.50	2.03	0.08	1.50	2.03
Phytase	1.70	0.01	0.20	0.34	0.01	0.20	0.34
Sacox 60	3.40	-	-	-	-	-	-
BMD 50	-	0.05	1.00	-	0.05	1.00	-
		100	2000	**359.84**	100	2000	**360.92**

SORGHUM CHECKOFF

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Questions

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