



HiFat CANOLA MEAL

High Energy and Amino Acids Availability Protein Meal



INNOVATORS IN ANIMAL NUTRITION



Product Introduction

Our Hi-E™ HiFat canola meal is produced from a high efficiency process using double zero canola seed with a low erucic acid & glucosinolates. This product containing at least 12% oil with moderate protein levels is an excellent source of amino acids and energy for animal feeding. Further more, it is rich in methionine and threonine which makes it complementary to soybean meal in feed formulations. Hi-E™ HiFat canola meal is also high in functional fiber which improves gastrointestinal tract integrity in animals and help reduce wet litter problems. It can also increase satiety which promotes flock uniformity in poultry farming. The product is produced without solvent extraction and hence it does not contain any chemical residues.

PRODUCT CODE: B060

Benefits:

- ✓ High in Methionine & Threonine, complements soybean meal which leads to cost saving in feed formulation
- ✓ Contains 12% minimum intrinsic oil which provides higher energy than added oils with less rancidity problems
- ✓ Canola oil is a highly unsaturated oil with high digestibility
- ✓ Contains of omega-9, 6, 3 fatty acid which helps to improve animal growth & health especially in young animals
- ✓ Improves body weight gain & FCR
- ✓ Lessen wet litter problems

Specification

Moisture, % max	12.5
Protein, % min	30.0
Oil, % min	12.0

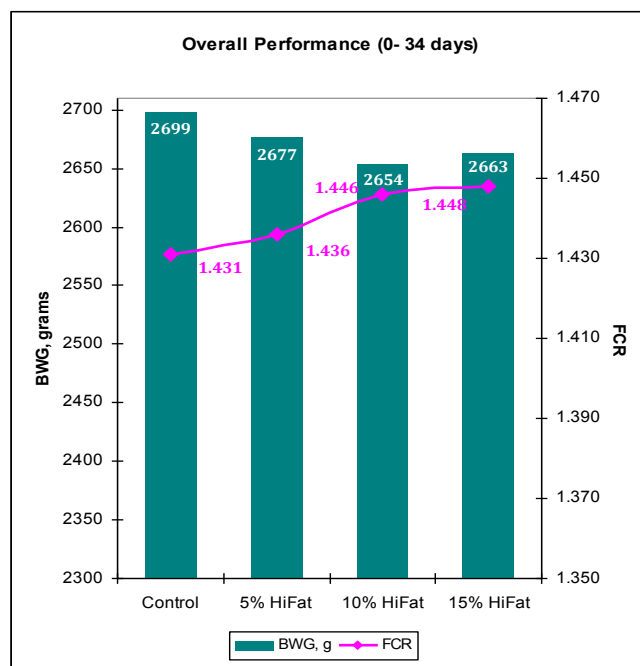
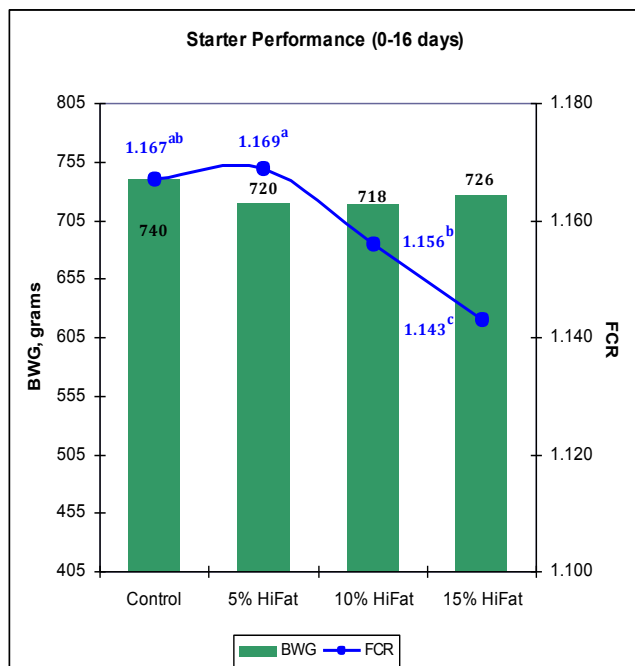


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Performance of Hi-E™ HiFat Canola Meal In Broiler Feeding Trial¹

A broiler feeding trial using 5%, 10% & 15% inclusion Hi-E™ HiFat Canola Meal together with dehulled soybean meal² was carried out to determine the optimum incorporation level of HiFat Canola Meal.

GROWTH PERFORMANCE:



CARCASS PERFORMANCE (% OF LIVE WEIGHT) & FECAL EVALUATION:

Treatment diets	Dressing ³	Breast Meat ⁴	Thigh ⁵	Drum Stick ⁵	Wing ⁵	Fecal score ⁶
Control	76.26	22.80	13.95	9.99 ^b	7.44	2.97
5% HiFat	75.89	21.80	14.36	10.30 ^a	7.56	3.03
10% HiFat	75.31	21.67	13.99	10.22 ^{ab}	7.47	2.93
15% HiFat	75.44	21.49	13.93	10.39 ^a	7.62	2.87

Discussion

- For the starter period, the diet with 15% HiFat Canola Meal had the best FCR and was significantly better than control diet by 24 points. It indicates that increasing level of HiFat Canola Meal increases the nutrient level of the feeds.
- At the end of the 34 days trial period, BWG and FCR were not significantly different for all treatment diets. This shows there is no negative effect of using HiFat Canola Meal at up to 15% in the diet.
- The diet with 15% HiFat Canola Meal had significantly higher yield of drum stick than the control diet.
- There was an improvement in fecal score with the diet containing 15% HiFat Canola Meal.
- Incorporation of 15% HiFat Canola Meal in these starter and grower trial diets have save up to RM55/mt (USD16) and RM31/mt (USD9) respectively.

* Price as at Dec 2014 in Malaysia

a,b,c Means within column with no common superscript differ significantly ($p < 0.05$)

1. Source: Soon Soon Unpublished data, Oct 2014 (Trial at Bangkok Animal Research Center)

2. Source: Thailand Local Crushed Brazilian Dehulled Soybean meal

3. Dressing as percent of live weight (without head, neck and foot)

4. Breast meat without bone as percent of live weight

5. Thigh, drumstick and wing with bone and abdominal fat as percent of live weight

6. Fecal scoring was measured as follow by scoring 1-5; 1 = hard, dry pellet, 2 = firm, formed stool (not too dry), 3 = soft, moist stool that retains shape, 4 = soft, unformed stool that assumes shape of container (it has more moisture), 5 = watery liquid that can be poured



High in Methionine & Threonine Content Leads to Cost Saving in Feed Formulations

Cost saving calculation base on broiler formulation nutrient matrix as below,

Calculated Nutrient	Min. Requirement	
	Starter	Grower
ME Poultry, kcal	3050	3100
Dig. Lys	1.20	1.10
Dig. Met	0.44	0.42
Dig. M+C	0.84	0.80
Dig. Thr	0.77	0.73
Dig. Trp	0.19	0.19

Cost comparison of 0%, 5%, 10% and 15% incorporation of Hi-E™ HiFat Canola Meal in broiler starter diets.

Broiler Starter	Methionine				Threonine				Total Cost Saving		
	DL-Met In diet %	Diff. %	Cost Saving		L-Thr In diet %	Diff. %	Cost Saving				
Formula							RM	USD			RM
Hipro SBM	0.30	-	-	-	0.12	-	-	-	-	-	-
5% HiFat CM	0.28	0.02	8.00	2.35	0.11	0.01	1.80	0.53	9.80	2.88	
10% HiFat CM	0.23	0.07	28.00	8.24	0.10	0.02	3.60	1.06	31.60	9.29	
15% HiFat CM	0.18	0.12	48.00	14.12	0.08	0.04	7.20	2.12	55.20	16.24	

* increase usage every 5% of H.E. HiFat Canola Meal, reduce DL-Met usage by 0.05%. (0.05% DL-Met = RM 20.00, USD 8.55)

Cost comparison of 0%, 5%, 10% and 15% incorporation of Hi-E™ HiFat Canola Meal in broiler grower diets.

Broiler Starter	Methionine				Threonine				Total Cost Saving	
	DL-Met In diet %	Diff. %	Cost Saving		L-Thr In diet %	Diff. %	Cost Saving			
RM			USD	RM			USD	RM	USD	
Hipro SBM	0.30	-	-	-	0.14	-	-	-	-	-
5% HiFat CM	0.28	0.02	8.00	2.35	0.14	0.00	0.00	0.00	0.00	2.35
10% HiFat CM	0.26	0.04	16.00	4.71	0.13	0.01	1.80	0.53	17.80	5.24
15% HiFat CM	0.23	0.07	28.00	8.24	0.12	0.02	3.60	1.06	31.60	9.29

*increase usage every 5% of H.E. HiFat Canola Meal, reduce DL-Met usage by 0.02%. (0.02% DL-Met = RM 8.00, USD 2.35)

Remarks:

DL-Methionine cost- RM40/kg

L- Threonine cost- RM18/kg

* Price as at Oct 2014 in Malaysia





Please Feel Free to Contact Us:

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Nutrients Matrix	
Crude Protein, %	31.0
ME Poultry, Kcal/kg	2600
DE Swine, Kcal/kg	3485
ME Swine, Kcal/kg	3205
NE Swine, Kcal/kg	2300
DE Fish, Kcal/kg	3250
Lysine, %	2.112
Methionine, %	0.693
M+C, %	1.404
Tryptophan, %	0.357
Threonine, %	1.384
Arginine, %	1.792
Isoleucine, %	1.319
Valine, %	1.683
Crude Fat, %	12.5
Crude Fiber, %	10.0
Calcium, %	0.51
Available Phosphorus, %	0.36
Total Phosphorus, %	0.91

Nutrients Matrix	
Sodium, %	0.082
Choline, mg/kg	2730
Chloride, %	0.10
Digestible Lysine, Poultry %	1.646
Digestible Methionine, Poultry %	0.602
Digestible M+C, Poultry %	1.180
Digestible Tryptophan, Poultry %	0.286
Digestible Threonine, Poultry %	1.163
Digestible Arginine, Poultry %	1.596
Digestible Isoleucine, Poultry %	1.148
Digestible Valine, Poultry %	1.481
Digestible Lysine Pigs, %	1.562
Digestible Methionine Pigs, %	0.597
Digestible M+C Pigs, %	1.165
Digestible Tryptophan Pigs, %	0.268
Digestible Threonine Pigs, %	0.996
Digestible Isoleucine Pigs, %	1.016
Digestible Valine Pigs, %	1.261
Dry Matter, %	89.0

RECOMMENDED INCLUSION RATES

Species	Inclusion Rate, %
Starter Chick	5 - 15%
Grower Broiler	5 - 15%
Layer	5 - 15%
Starter Pig	6% Max
Grower / Finisher pig	12% Max
Goat / Dairy Cattle	15% Max
Beef	No Limit

Remarks :

Previously, sinapine has been identified to cause fishy odour egg from brown layers. However starting 2006, all breeding companies such as Lohmanns (Lohmanns info, 2006), ISA (2010) and Hy-Line (2009) have declared that their PS are free of the defective gene that causes fishy odour egg.

