

SUPPLEMENTARY MATERIAL**Supplementary Table 1. Composition and calculated analyses of the experimental diets used in the broiler tolerance study**

Ingredients, g/kg	Starter (1-21d)	Finisher (22-43d)
Maize	312.9	200.8
Wheat	150.6	291.7
Barley	50.0	50.0
Soybean meal, 48% CP	279.1	189.4
Soybean whole extruded	100.0	150.0
Lard	36.1	51.2
Wheat middlings	20.0	20.0
DL-methionine	2.9	2.6
L-lysine, 99%	1.9	1.4
L-threonine, 98%	0.8	0.7
Calcium carbonate	11.2	10.5
Dicalcium phosphate	16.4	13.8
Salt	4.1	3.8
Vitamin & mineral premix ¹	4.0	4.0
Clinacox [®] 0.5% (diclazuril)	0.2	-
Elancoban [®] G200 (monensin)	-	0.5
Starch/CBM 588	10.00	10.00
Calculated analyses²		
ME, kcal/kg	3,000	3,150
Crude protein, %	22.00	20.00
Crude fiber, %	3.00	2.98
Ether extract, %	7.38	9.46
Starch, %	32.37	33.73
Total lysine, %	1.33	1.15
Total methionine, %	0.61	0.55
Total met+cys, %	0.98	0.90
Total threonine, %	0.90	0.81
Total tryptophan, %	0.26	0.24
Ash, %	6.23	5.66
Calcium, %	1.00	0.90
Available phosphorus, %	0.45	0.40
Sodium, %	0.18	0.17
Chloride, %	0.35	0.32
Choline, mg/kg	1,324	1,256

¹Vitamin and mineral premix provided the following nutrients per kg diet: 12,000 IU vitamin A as retinol acetate; 2,400 IU vitamin D3 as cholecalciferol; 30 IU vitamin E as dl- α -tocopherol acetate; 3 mg vitamin K as menadione sodium bisulphite; 2.2 mg vitamin B1 as thiamine HCl; 8 mg vitamin B2 as riboflavin; 5 mg vitamin B6 as pyridoxine HCl; 11 μ g vitamin B12 as cyanocobalamin; 65 mg nicotinic acid; 25 mg calcium pantothenate; 1.5 mg folic acid; 150 μ g biotin; 80 mg iron as FeSO₄·7H₂O; 8 mg copper as CuSO₄·5H₂O; 60 mg manganese as MnSO₄·7H₂O; 40 mg zinc as ZnO; 0.33 mg iodine as KI; 0.15 mg selenium as Na₂SeO₃; 150 mg Ethoxyquin.

² Based on Arkervaart-Twente's compositional values for feed ingredients.

Supplementary Table 2. Composition and calculated analyses of the experimental diets used in the piglet tolerance study.

Ingredients (g/kg)	Pre-starter (0-14 days)	Starter (14-42 days)
Barley	400	375
Wheat	195	194
Wheat middlings		41
Maize (heat-treated)	100	50
Maize	0	50
Linseed	10	10
Soybean meal 50%	49	123
Soycomil® (high quality soybean meal)	34	10
Sunflower seed, extracted	0	10
MSA whey powder	86	35
Protastar® potato protein	30	10
Palm oil	3	3
Soy oil	24	22
Fish oil	5	5
Lactose	2.5	0
Fumaric acid	5	5
Lactic acid	10	10
Monocalcium phosphate	6	6
Sodium bicarbonate	2.9	1.5
Lime	7.3	9.5
Sodium chloride	2.5	4.5
Vitamin and mineral premix ¹	4	4
Amino acids	23.8	21.5
Calculated Analysis²		
Dry matter	893	887
Crude protein	176	177
Crude ash	55	53
Crude fiber (ether extract), %	29	35
Crude fat	61	57
Starch	406	400
Calcium	7.6	6.9
Sodium	3.0	2.8
Total phosphorus	5.7	5.6
Available phosphorus	4.0	3.7
NE (piglets)(MJ/kg)	11.9	11.5
Digestible Lysine	10.9	10.3
Digestible Meth + Cyst	6.2	6.0
Digestible Threonine	6.1	5.9
Digestible Tryptophan	2.2	2.0
¹ Added per kg: 1.8 g Ash; 0.14 g crude protein; 0.03 g crude fat; 0.07 g crude fiber; 0.24 g calcium; 160 mg copper as CuSO ₄ ·5H ₂ O; 150 mg iron as FeSO ₄ ·H ₂ O; 60 mg manganese as MnO; 115 mg zinc as ZnSO ₄ ·H ₂ O; 0.23 mg cobalt as CoSO ₄ ·7H ₂ O; 0.48 g calcium iodate, free of water; 0.30 mg selenium as NaSeO ₃ ; 10,000 IU vitamin A; 2,000 IU vitamin D ₃ ; 75 IU vitamin E; 0.8 mg vitamin B ₁ ; 5.6 mg vitamin B ₂ ; 10 mg pantothenic acid; 38 mg nicotinic acid; 0.8 mg vitamin B ₆ ; 26 mcg vitamin B ₁₂ ; 150 mg vitamin C; 1.15 mg vitamin K ₃ ; 0.4 mg folic acid; 80 mg choline; 440 FTU 3-phytase (EC 3.1.3.8 (E1600)); 70 AXC endo-1,4-beta-xylanase (EC 3.2.1.8); 100 ASC endo-1,3(4)-beta-glucanase (EC 3.2.1.6).		
² Based on Arkervart-Twente's compositional values for feed ingredients.		

Supplementary Table 3. Composition and calculated analyses of the experimental diets of the turkey tolerance study

Ingredients (g/kg)	Starter (0-28 days)	Grower (29-56 days)	Finisher (57-84 days)
Wheat	467.6	517.1	620.0
Soybean meal (44% crude protein)	395.0	362.0	263.3
Rapeseed meal	30.0	40.0	50.0
Potato protein	30.0	-	-
Soya oil	22.5	23.5	-
Animal fat	-	10.0	23.0
Sodium chloride (salt)	3.2	3.0	2.9
Limestone	18.0	15.0	15.0
Monocalcium phosphate	21.0	16.5	12.0
Choline chloride	1.0	0.8	0.7
DL-Methionine	3.1	2.9	2.5
L-Lysine HCl	3.6	4.0	5.5
L-Threonine	-	0.2	0.4
Vitamin & mineral premix ¹	5.0	5.0	5.0
Calculated Analyses²			
ME _n poultry (kcal/kg)	2800	2915	2954
Dry matter (%)	88.50	88.55	88.34
Crude protein (%)	26.99	24.05	21.02
Crude fiber (%)	3.50	3.54	3.40
Lysine (%)	1.70	1.50	1.40
Methionine (%)	0.70	0.62	0.55
Methionine + Cysteine (%)	1.14	1.04	0.93
Threonine (%)	0.99	0.86	0.75
Calcium (%)	1.29	1.10	0.99
Total Phosphorus (%)	0.90	0.80	0.68
Sodium (%)	0.15	0.14	0.13
¹ Vitamin and mineral premix is added at 7 kg/Tm (0.7%) to provide the following nutrients per kg diet: 16,800 IU vitamin A; 7,000 IU vitamin D3; 70 IU vitamin E; 4.2 mg vitamin K; 2.8 mg vitamin B1; 9.8 mg vitamin B2; 7 mg vitamin B6; 21 mg vitamin B12; 70 mg nicotinic acid; 21 mg pantothenic acid; 1.4 mg folic acid; 280 mg biotin; 112 mg iron; 14 mg copper; 140 mg manganese; 0.7 mg cobalt; 112 mg zinc; 1.4 mg iodine; 0.28 mg selenium; 0.7 mg molybdenum.			
² Based on NRC's (1994) compositional values for feed ingredients.			

Supplementary Table 4. CBM 588 content in experimental feeds for broilers.

	CBM 588 (CFU/g)			
Feed	T1 Control	T2 5x10⁵ CFU/g	T3 5x10⁶ CFU/g	T4 5x10⁷ CFU/g
Starter	< 10 ⁴	2.5 x 10 ⁵	1.9 x 10 ⁶	1.4 x 10 ⁷
Finisher	< 10 ⁴	2.9 x 10 ⁵	2.1 x 10 ⁶	2.3 x 10 ⁷
CFU: colony forming units.				

Supplementary Table 5. CBM 588 content in experimental feeds for piglets.

Feed	CBM 588 (CFU/g)		
	T1 Control	T2 5x10⁵ CFU/g	T3 5x10⁷ CFU/g
Prestarter	< 10 ⁴	3.9 x 10 ⁵	2.3 x 10 ⁷
Starter, batch 1	< 10 ⁴	2.1 x 10 ⁵	2.4 x 10 ⁷
Starter, batch 2	< 10 ⁴	2.6 x 10 ⁵	2.3 x 10 ⁷
CFU: colony forming units.			

Supplementary Table 6. CBM 588 content in experimental feeds for turkeys.

Feed	CBM 588 (CFU/g)			
	T1 Control	T2 1.25x10 ⁵ CFU/g	T3 2.5x10 ⁵ CFU/g	T4 2.5x10 ⁷ CFU/g
Batch 1	< 10 ³	1.1 x 10 ⁵	1.8 x 10 ⁵	1.2 x 10 ⁷
Batch 2	< 10 ³	1.0 x 10 ⁵	1.8 x 10 ⁵	1.3 x 10 ⁷
Batch 3	< 10 ³	1.1 x 10 ⁵	1.8 x 10 ⁵	1.2 x 10 ⁷
CFU: colony forming units.				