

VII. APPENDIX

Table 1 Feed compositions

Feed ingredient	Percentage
Broken rice	48.0
Rice bran	5.5
Soybean solvent extract 47 %	15.0
Full fat soybean	15.0
Fish meal 66 % crude protein	4.5
Skim milk	5.0
Sucrose	1.0
Vegetable oil	3.0
Salt	0.19
Monocalcium	1.80
Lime stone	0.95
DL-Methionine	0.10
Lysine	0.28
Vitamin-mineral premix	0.25
Tylan	0.015
Enroflox	0.0225

Table 2 Nutrient composition (calculated)

	Percentage of dry matter basis
Dry matter	90.14
Crude protein	21.63
Non protein nitrogen	0.01
Fat	7.31
Moisture	9.86
Fiber	2.59
Ash	2.98
Calcium	1.02
Phosphorus	0.60
Sodium	0.46
Metabolizable energy	3394.63 Kcal/kg
Net energy	2367.06 Kcal/kg
TDN(%)	63.23
Total phosphorus	0.87
Choline	228.72
Lysine	1.31
Methionine	0.52
Methionien + Cystine	0.79
Tryptophane	0.26
Treonine	0.83
Leusine	1.66
Isoleusine	1.09

Table 2 continue

	percentage of dry matter basis
Arginine	1.33
Phenylalanine	0.67
Phenylalanine + Thylosine	1.66
Histidine	0.52
Valine	1.15
Glycine	1.27
Sodium	0.08 mg
Chlorine	0.12 mg

Table 3 Proximate analysis

	Percentage of as fed basis
Dry matter	88.03
Crude protein	22.30
Fat (ether extract)	7.68
Gross energy	4207.40
Crude fiber	2.56
Ash	6.10

Table 4 Vitamin-mineral premix's composition

Ingredients	Amount	
Vitamin A	18	million IU
Vitamin D3	2	million IU
Vitamin E	20,000	IU
Vitamin K3	2,000	mg
Vitamin B1	1500	mg
Vitamin B2	3500	mg
Vitamin B6	2500	mg
Vitamin B12	15	mg
Nicotinic acid	15	g
Folic acid	500	mg
Panthotinic acid	15	g
Biotin	100	mg
Chlorine chloride	150	g
Manganese	80	g
Iron	180	g
Copper	180	g
Zinc	100	g
Iodine	1	g
Selenium	0.1	g
Cobalt	1	g
Food preservative	5.7	g

Table5 ANOVA : Log₂ AD titer on day 0

SOV	df	SS	MS	F-value	Pr>F
Total	80	172.3209			
Treatment	3	26.1993	8.7331	4.60	0.0051
Error	77	146.1216	1.8976		
$R^2 = 0.1520$		C.V. = 58.7277			

Table6 ANOVA : Log₂ AD titer on day 7

SOV	df	SS	MS	F-value	Pr>F
Total	69	134.3428			
Treatment	3	15.2204	5.0734	7.75	0.0002
Passive antibody	1	76.5799	76.5799	117.01	0.0001
Error	65	42.5424	0.6544		
$R^2 = 0.6833$		C.V. = 36.30			

Table7 ANOVA : Log₂ AD titer on day 14

SOV	df	SS	MS	F-value	Pr>F
Total	77	101.8461			
Treatment	3	6.9995	2.3331	2.87	0.042
Passive antibody	1	35.4475	35.4475	43.56	0.0001
Error	73	59.3990	0.8136		
$R^2 = 0.4167$		C.V. = 50.98			

Table8 ANOVA : Log₂ AD titer on day 21

SOV	df	SS	MS	F-value	Pr>F
Total	80	194.00			
Treatment	3	21.5844	7.1948	3.31	0.0244
Passive antibody	1	7.3033	7.3033	3.36	0.0706
Error	76	165.1121	2.1725		
$R^2 = 0.1489$		C.V. = 57.6763			

Table9 ANOVA : Log₂ AD titer on day 28

SOV	df	SS	MS	F-value	Pr>F
Total	76	142.3116			
Treatment	3	27.1117	9.0372	6.62	0.0005
Passive antibody	1	16.9161	16.9161	12.39	0.0008
Error	72	98.2838	1.3650		
$R^2 = 0.3093$		C.V. = 72.55			

Table 10 ANOVA : Area under AD titer curve

SOV	df	SS	MS	F-value	Pr>F
Total	63	543.1523			
Treatment	3	55.2219	18.4073	2.55	0.050
Passive antibody	1	61.5432	61.5432	8.52	0.005
Error	59	426.3871	7.2669		
$R^2 = 0.2149$		C.V. = 33.44			

Table 11 ANOVA : Δ cpm of PHA-induced lymphocyte proliferation on day 10

SOV	df	SS	MS	F-value	Pr > F
Total	23	224287883.1			
Treatment	3	37456028.2	12485342.7	1.3	0.302
Sex	1	4771843.4		0.50	0.4889
Error	19	182060011.5	9582105.8		
$R^2 = 0.188$		C.V. = 28.06			

Table 12 ANOVA : Δ cpm of PHA-induced lymphocyte proliferation on day 20

SOV	df	SS	MS	F-value	Pr > F
Total	23	462123226.3			
Treatment	3	14957542.3	4985847.4	0.22	0.8810
Sex	1	17300242.8	17300242.8	0.76	0.3928
Error	19	429865441.2	22624496.9		
$R^2 = 0.0698$		C.V. = 39.298			

Table 13 ANOVA : Δ cpm of PHA-induced lymphocyte proliferation on day 30

SOV	df	SS	MS	F-value	Pr > F
Total	23	389085467.2			
Treatment	3	19564836.3	6521612.1	0.88	0.4702
Sex	1	228323326.8	228323326.8	30.72	0.0001
Error	19	141197304.0	7431473.0		
$R^2 = 0.637$		C.V. = 27.744			

Table 14 ANOVA: Δ cpm of PHA-induced lymphocyte proliferation on day 40

SOV	df	SS	MS	F-value	Pr > F
Total	21	139994799.0			
Treatment	3	6211638.6	2070546.2	0.27	0.8492
Sex	1	1263902.5	1263902.5	0.16	0.6922
Error	17	132519257.8	7795250.4		
$R^2 = 0.0533$			C.V. = 27.99		

Table15 ANOVA: Δ cpm of ConA-induced lymphocyte proliferation on day 10

SOV	df	SS	MS	F-value	Pr > F
Total	23	147011619.1			
Treatment	3	33577705.4	11192568.4	1.88	0.1688
Sex	1	488890.2	488890.2	0.08	0.7774
Error	19	112945023.5			
$R^2 = 0.2317$			C.V. = 19.567		

Table16 ANOVA: Δ cpm of ConA-induced lymphocyte proliferation on day 20

SOV	df	SS	MS	F-value	Pr > F
Total	23	329798464.9			
Treatment	3	20371686.1	6790562.0	0.44	0.7264
Sex	1	16794912.4	16794912.4	1.09	0.3095
Error	19	292631866.4	15401677.1		
$R^2 = 0.112$			C.V. = 32.647		

Table17 ANOVA: Δ cpm of ConA-induced lymphocyte proliferation on day 30

SOV	df	SS	MS	F-value	Pr > F
Total	23	233028327.5			
Treatment	3	3202053.0	1067351.0	0.17	0.9125
Sex	1	113423667.3	113423667.3	18.51	0.0004
Error	19	116402607.1			
$R^2 = 0.5004$		C.V. = 24.21			

Table18 ANOVA: Δ cpm of ConA-induced lymphocyte proliferation on day 40

SOV	df	SS	MS	F-value	Pr > F
Total	21	65468673.4			
Treatment	3	23828435.9	7942811.9	3.26	0.0471
Sex	1	273288.2	273288.2	0.11	0.741
Error	17	41366949.2	2433349.9		
$R^2 = 0.3681$		C.V. = 14.96			

Table19 ANOVA: Δ cpm of PWM-induced lymphocyte proliferation on day 10

SOV	df	SS	MS	F-value	Pr > F
Total	23	149941681.9			
Treatment	3	16656865.5	5552289.1	0.83	0.4925
Sex	1	6560721.8	6560721.8	0.98	0.3338
Error	19	126724092.5	6669689.0		
$R^2 = 0.1548$		C.V. = 23.33			

Table20 ANOVA: Δ cpm of PWM-induced lymphocyte proliferation on day 20

SOV	df	SS	MS	F-value	Pr > F
Total	23	258919839.7			
Treatment	3	9248368.3	3082789.4	0.25	0.858
Sex	1	18239450.9	18239450.9	1.50	0.236
Error	19	231432020.5	12180632.6		
$R^2 = 0.106$		C.V. = 38.485			

Table21 ANOVA: Δ cpm of PWM-induced lymphocyte proliferation on day 30

SOV	df	SS	MS	F-value	Pr > F
Total	23	222838853.8			
Treatment	3	34377095.0	11459031.6	2.28	0.112
Sex	1	92997058.1	92997058.1	18.51	0.0004
Error	19	95464700.6	5024457.9		
$R^2 = 0.571$		C.V. = 38.74			

Table22 ANOVA: Δ cpm of PWM-induced lymphocyte proliferation on day 40

SOV	df	SS	MS	F-value	Pr > F
Total	21	119693744.4			
Treatment	3	6046189.5	2015396.5	0.38	0.766
Sex	1	24275972.69	24275972.69	4.62	0.0463
Error					
$R^2 = 0.253$		C.V. = 29.03			

Table 23 ANOVA : Serum α -tocopherol on day 0

SOV	df	SS	MS	F-value	Pr > F
Total	31	2.7987			
Treatment	3	0.2694	0.0898	0.99	0.4098
Error	28	2.5292	0.0903		
$R^2 = 0.0962$		C.V. = 21.345			

Table 24 ANOVA : Serum α -tocopherol on day 7

SOV	df	SS	MS	F-value	Pr > F
Total	31	12.8970			
Treatment	3	7.4683	2.4894	12.84	0.0001
Error	28	5.4287	0.1938		
$R^2 = 0.57$		C.V. = 27.112			

Table 25 ANOVA : Serum α -tocopherol on day 14

SOV	df	SS	MS	F-value	Pr > F
Total	31	22.0898			
Treatment	3	17.3171	5.7723	33.87	0.0001
Error	28	4.7726	0.1704		
$R^2 = 0.783$		C.V. = 21.724			

Table 26 ANOVA : Serum α -tocopherol on day 21

SOV	df	SS	MS	F-value	Pr > F
Total	31	12.7011			
Treatment	3	8.1631	2.7210	16.79	0.0001
Error	28	4.5379	0.1620		
$R^2 = 0.6427$		C.V. = 19.664			

Table 27 ANOVA : Serum α -tocopherol on day 28

SOV	df	SS	MS	F-value	Pr > F
Total	31	14.1242			
Treatment	3	9.7316	3.2438	20.68	0.0001
Error	28	4.3925	0.1568		
$R^2 = 0.6890$		C.V. = 18.836			

Table 28 ANOVA : Plasma α -tocopherol on day 0

SOV	df	SS	MS	F-value	Pr > F
Total	23	6.0192			
Treatment	3	0.3013	0.1004	0.61	0.6147
Sex	1	2.6058		15.91	0.0008
Error	19	3.1119	0.1637		
$R^2 = 0.4829$		C.V. = 25.4218			

Table 29 ANOVA : Plasma α -tocopherol on day 10

SOV	df	SS	MS	F-value	Pr > F
Total	23	5.8018			
Treatment	3	1.9880	0.6626	3.45	0.0374
Sex	1	0.16023	0.1623	0.83	0.3728
Error	19	3.6536	0.1922		

 $R^2 = 0.37027$

C.V. = 48.3824

Table 30 ANOVA : Plasma α -tocopherol on day 20

SOV	df	SS	MS	F-value	Pr > F
Total	23	23.7245			
Treatment	3	15.2730	5.0910	16.15	0.0001
Sex	1	2.4608		7.80	0.0116
Error	19	5.9907	0.3153		

 $R^2 = 0.7474$

C.V. = 31.3180

Table 31 ANOVA : Plasma α -tocopherol on day 30

SOV	df	SS	MS	F-value	Pr > F
Total	23	33.6540			
Treatment	3	25.0059	8.3353	28.89	0.0001
Sex	1	3.1663	3.1663	10.97	0.0037
Error	19	5.4817	0.2885		

 $R^2 = 0.8371$

C.V. = 23.4946

Table 32 ANOVA : Plasma α -tocopherol on day 40

SOV	df	SS	MS	F-value	Pr > F
Total	21	36.5932			
Treatment	3	21.9959	7.3319	10.71	0.0003
Sex	1	2.9616	2.9616	4.33	0.0530
Error	17	11.6356	0.6844		

 $R^2 = 0.6820$

C.V. = 31.3430

Table 33 ANOVA : Average daily gain for 28 days trial

SOV	df	SS	MS	F-value	Pr > F
Total	83	0.9083			
Treatment	3	0.00508	0.00169	0.15	0.9278
Initial weight	1	0.02468	0.02468	2.22	0.1403
Error	79	0.8786	0.01112		

 $R^2 = 0.0327$

C.V. = 25.0588

VIII. CURRICURUMVITAE

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INSTITUTION APPENDED

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