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APPENDICES

APPENDIX 1: STATISTICAL DATA

Appendix 1.1: One-way ANOVA for growth

		Sum of Squares	df	Mean Square	F	Sig.
Initial Weight (g)	Between Groups	.032	2	.016	.603	.577
	Within Groups	.158	6	.026		
	Total	.190	8			
Final Weight (g)	Between Groups	.377	2	.189	1.695	.261
	Within Groups	.668	6	.111		
	Total	1.046	8			
Mean Initial Weight (g)	Between Groups	.000	2	.000	.603	.577
	Within Groups	.002	6	.000		
	Total	.002	8			
Mean Final Weight (g)	Between Groups	.004	2	.002	1.695	.261
	Within Groups	.007	6	.001		
	Total	.010	8			
SGR, %(g/day)	Between Groups	.024	2	.012	28.863	.001
	Within Groups	.002	6	.000		
	Total	.026	8			
Wet Weight Gain	Between Groups	.004	2	.002	6.759	.029
	Within Groups	.002	6	.000		
	Total	.006	8			
Total Weight (%)	Between Groups	433.273	2	216.636	26.983	.001
	Within Groups	48.172	6	8.029		
	Total	481.444	8			
Length (cm)	Between Groups	.060	2	.030	30.915	.001
	Within Groups	.006	6	.001		
	Total	.066	8			

Appendix 1.2: The growth (cm) and specific growth rate of tilapia during eight weeks of feeding trial on various *P. sajor-caju* incorporated diet.

Diet	Initial Weight (g)	Final Weight (g)	Mean		SGR	Wet Weight gain (g)	Total Weight (%)	Length (cm)
			Initial Weight (g)	Final Weight (g)				
Diet 1	3.84 ± 0.20 ^a	9.66 ± 0.48 ^a	0.38 ± 0.02 ^a	0.97 ± 0.05 ^a	1.65 ± 0.01 ^a	0.58 ± 0.03 ^a	151.57 ± 2.12 ^a	4.40 ± 0.03 ^a
Diet 2	3.96 ± 0.17 ^a	9.42 ± 0.27 ^a	0.40 ± 0.02 ^a	0.94 ± 0.03 ^a	1.54 ± 0.02 ^b	0.55 ± 0.01 ^b	137.09 ± 3.29 ^b	4.26 ± 0.04 ^b
Diet 3	3.87 ± 0.11 ^a	9.16 ± 0.18 ^a	0.39 ± 0.01 ^a	0.92 ± 0.02 ^a	1.54 ± 0.02 ^b	0.53 ± 0.01 ^b	136.63 ± 2.96 ^b	4.21 ± 0.01 ^b

^a and ^b Different superscript within column indicated significant differences between diet means at level of P < 0.05.

Appendix 1.3: One-way ANOVA for proximate analyses

		Sum of Squares	df	Mean Square	F	Sig.
Protein	Between Groups	78.603	2	39.302	231.186	.001
	Within Groups	.510	3	.170		
	Total	79.113	5			
Fat	Between Groups	4.503	2	2.252	150.111	.001
	Within Groups	.045	3	.015		
	Total	4.548	5			
Carbohydrate	Between Groups	213.370	2	106.685	6.4013	.000
	Within Groups	.050	3	.017		
	Total	213.420	5			
Ash	Between Groups	23.923	2	11.962	1.4353	.000
	Within Groups	.025	3	.008		
	Total	23.948	5			
Moisture	Between Groups	174.173	2	87.087	.	.
	Within Groups	.000	3	.000		
	Total	174.173	5			
CrudeFibre	Between Groups	25.813	2	12.907	2.771	.208
	Within Groups	13.975	3	4.658		
	Total	39.788	5			
Energy	Between Groups	1036.000	2	518.000	.	.
	Within Groups	.000	3	.000		
	Total	1036.000	5			

Appendix 1.4: Contents of nutrients in three different diets used in this study

Diet	Protein (%)	Fat (%)	Carbohydrate (%)	Ash (%)	Moisture (%)	Crude Fibre (%)
Diet 1	27.45 ± 0.07 ^a	0.55 ± 0.07 ^b	46.25 ± 0.21 ^b	9.45 ± 0.07 ^b	16.3 ± 0.00 ^a	46.25 ± 1.91 ^a
Diet 2	27.20 ± 0.71 ^a	0.80 ± 0.14 ^b	44.2 ± 0.00 ^c	9.1 ± 0.14 ^c	19.2 ± 0.00 ^a	41.85 ± 2.48 ^a
Diet 3	19.65 ± 0.07 ^b	2.5 ± 0.14 ^a	57.75 ± 0.07 ^a	13.5 ± 0.00 ^a	6.6 ± 0.00 ^a	46.25 ± 2.05 ^a

^{a, b and c} Different superscript within column indicated significant differences between diet means at level of P < 0.05.

Appendix 1.5: One-way ANOVA for survival

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	253.796	2	126.898	160.95 ₄	.000
Within Groups	4.730	6	.788		
Total	258.526	8			

Appendix 1.6: The survival (%) of tilapia during eight weeks of feeding trial.

Diet	Survival (%)
Diet 1	85.18±0.85 ^a
Diet 2	72.22±1.11 ^c
Diet 3	79.63±0.64 ^b

^{a and b} Different superscript within column indicated significant differences between diet means at level of P < 0.05.

Appendix 1.7: One-way ANOVA for water quality

		Sum of Squares	df	Mean Square	F	Sig.
pH	Between Groups	.013	2	.006	2.058	.209
	Within Groups	.018	6	.003		
	Total	.031	8			
DO	Between Groups	.536	2	.268	1.861	.235
	Within Groups	.864	6	.144		
	Total	1.400	8			
Temperature	Between Groups	.116	2	.058	13.000	.007
	Within Groups	.027	6	.004		
	Total	.142	8			
Ammonia	Between Groups	23.645	2	11.822	496.511	.000
	Within Groups	.143	6	.024		
	Total	23.788	8			
Nitrite	Between Groups	.000	2	.000	16.737	.004
	Within Groups	.000	6	.000		
	Total	.000	8			
Nitrate	Between Groups	.000	2	.000	.133	.878
	Within Groups	.002	6	.000		
	Total	.002	8			

Appendix 1.8: Water quality in fish tank water during eight weeks of feeding trial.

Diet	pH	Dissolved Oxygen (ppm)	Temperature (°C)	Ammonia (mg/L)	Nitrite (mg/L)	Nitrate (mg/L)
Diet 1	7.34 ± 0.08 ^a	5.81 ± 0.13 ^a	26.30 ± 0.00 ^b	5.95 ± 0.19 ^a	0.02 ± 0.002 ^b	0.22 ± 0.01 ^a
Diet 2	7.33 ± 0.05 ^a	5.70 ± 0.63 ^a	26.50 ± 0.00 ^a	5.14 ± 0.17 ^b	0.03 ± 0.000 ^a	0.22 ± 0.03 ^a
Diet 3	7.26 ± 0.01 ^a	5.24 ± 0.15 ^a	26.57 ± 0.12 ^a	2.18 ± 0.07 ^c	0.02 ± 0.003 ^c	0.22 ± 0.005 ^a

a, b and c Different superscript within column indicated significant differences between

diet means at level of P < 0.05.