

Table 1. Dietary composition of high soy grow out diet formulated to 40% protein and 10% lipid use in the grow out demonstration (Trials 1 and 2).

Composition	g/100g as is
Poultry meal ¹	8.00
Soybean meal ²	55.20
Corn protein concentrate ³	10.00
Menhaden fish oil ⁴	8.16
Lecithin (soy) ⁵	0.50
Whole wheat	14.49
Mineral premix ⁶	0.25
Vitamine premix ⁷	0.50
Choline chloride ⁸	0.20
Rovimix Stay-C 35% ⁹	0.10
CaP-dibasic ¹⁰	2.00
DL-Methionine ¹¹	0.10
Taurine ¹¹	0.50

¹Darling Ingredients, Irving, TX, USA

²De-hulled solvent-extracted soybean meal, Bunge Limited, Decatur, AL, USA

³Empyreal 75™, Cargill Corn Milling, Cargill, Inc, Blair, NE, USA

⁴Omega Protein Inc., Houston, TX, USA

⁵The Solae Company, St. Louis, USA

⁶ ASA Premix (g 100g-1 premix): cobalt chloride, 0.004; cupric sulphate pentahydrate, 0.250, ferrous sulfate heptahydrate, 4.0, manganous sulfate anhydrous, 0.650; potassium iodide, 0.067; sodium selenite, 0.010; zinc sulfate heptahydrate, 13.193, and α cellulose 81.826

⁷ ASA Premix (g/kg Premix): thiamin HCL, 0.5; riboflavin, 8.0; pyridoxine HCl, 5.0; Ca-pantothenate, 20.0; niacin, 40.0; biotin, 0.040; folic acid, 1.80; cyanocobalamin, 0.002; vitamin A acetate (500,000 IU g⁻¹), 2.40; vitamin D₃ (400,000 IU g⁻¹), 0.50; DL- α -tocopheryl acetate, 80.0; and α cellulose, 834.258.

⁸MO Biomedicals Inc., Solon, OH, USA

⁹ Stay C[®], (L-ascorbyl-2-polyphosphate 35% Active C), Roche Vitamins Inc., Parsippany, NJ, USA

¹⁰Acros Organics B.V.B.A. Thermo Fisher Scientific, Waltham, MA, USA

¹¹MP Biomedicals Inc., Santa Ana, CA, USA

*Analyzed at University of Missouri Agricultural Experiment Station Chemical Laboratories (Columbia, MO, USA)

Table 2 Growth performance of juvenile Florida pompano (23.2 g, and 38.1 g mean initial weight) reared over a 42-day or 56-day grow out period while being offered either a soy-based practical diet or a commercial diet (n=6, n=3).

Trial 1 (n=6)	Biomass (g)	Mean weight (g)	Weight Gain (%)	TGC	FCR	Survival (%)
FF Silver	886.92	60.45	160.02	0.087	1.86	97.78
AU diet	780.92	55.17	138.83	0.078	2.05	94.44
P-value	0.026	0.076	0.006	0.002	0.015	0.092
PSE	28.71	1.89	0.00	0.00	0.05	1.27
Trial 2 (n=3)						
FF Silver 40/10	3357.3	137.95	269.2	0.11	1.89	97.3
AU diet	2852.7	125.56	226.1	0.10	2.05	90.7
P-value	0.192	0.332	0.284	0.435	0.577	0.252
PSE	227.55	7.94	24.63	0.01	0.18	3.53

Table 3. Composition of Florida pompano diets including various soybean meal sources used in Trial 3.

Composition (as is)	Basal	Bright Day 50%	Bright Day 100%	Soycomil PE 50%	Soycomil PE 100%	Hamlet 300 50%	Hamlet 300 100%	Expeller-extruded SBM 25%	Expeller-extruded SBM 50%
Poultry by product meal ¹	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Soybean meal ²	49.97	24.99	0.00	24.99	0.00	24.99	0.00	36.49	24.99
Bright Day ³	0.00	21.00	42.00	0.00	0.00	0.00	0.00	0.00	0.00
Soycomil PE ⁴	0.00	0.00	0.00	18.55	36.95	0.00	0.00	0.00	0.00
HP 300 ⁵	0.00	0.00	0.00	0.00	0.00	20.55	40.90	0.00	0.00
Expeller-extruded SBM ⁶	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.18	24.36
Corn protein concentrate ⁷	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
Menhaden fish oil ⁸	3.42	3.42	3.42	3.42	3.42	3.42	3.42	3.42	3.42
Soy oil	1.82	1.89	1.95	1.89	1.95	1.61	1.40	1.01	0.19
Lecithin (soy) ⁹	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Corn Starch	0.13	4.05	7.98	6.60	13.13	4.92	9.89	2.23	2.37
Whole wheat	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Mineral premix ¹⁰	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Vitamin premix ¹¹	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Choline chloride ¹²	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Rovimix Stay-C 35% ¹³	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
CaP-dibasic ¹⁴	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
DL-Methionine ¹⁵	0.11	0.10	0.10	0.01	0.00	0.00	0.00	0.12	0.13
Taurine ¹⁵	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Proximate Analyses (as is)									
Crude protein	42.67	42.02	41.76	36.88	41.72	40.59	40.37	39.42	39.86
Moisture	5.65	5.95	7.03	7.2	6.07	5.99	6.56	6.2	8.42
Crude Fat	7.22	7.19	6.65	6.26	5.95	6.38	6.25	6.8	6.34
Crude Fiber	3.12	3.04	2.45	3.45	3.66	3.13	2.85	3.5	3.53
Ash	7.1	6.77	6.35	6.22	5.61	6.52	6.38	6.72	6.77

¹Darling Ingredients, Irving, TX, USA²De-hulled solvent-extracted soybean meal, Bunge Limited, Decatur, AL, USA³Benson Hill, St. Louis, MO, USA⁴ADM Animal Nutrition, Quincy, IL, USA⁵Hamlet Protein, Findlay, OH, USA⁶All Sustained LLC, Boston, MA, USA

⁷Empyreal 75™, Cargill Corn Milling, Cargill, Inc, Blair, NE, USA

⁸Omega Protein Inc., Houston, TX, USA

⁹The Solae Company, St. Louis, USA

¹⁰ ASA Premix (g 100g⁻¹ premix): cobalt chloride, 0.004; cupric sulphate pentahydrate, 0.250, ferrous sulfate heptahydrate, 4.0, manganous sulfate anhydrous, 0.650; potassium iodide, 0.067; sodium selenite, 0.010; zinc sulfate heptahydrate, 13.193, and α cellulose 81.826

¹¹ ASA Premix (g/kg Premix): thiamin HCL, 0.5; riboflavin, 8.0; pyridoxine HCl, 5.0; Ca-pantothenate, 20.0; niacin, 40.0; biotin, 0.040; folic acid, 1.80; cyanocobalamin, 0.002; vitamin A acetate (500,000 IU g⁻¹), 2.40; vitamin D₃ (400,000 IU g⁻¹), 0.50; DL- α -tocopheryl acetate, 80.0; and α cellulose, 834.258.

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¹⁵MP Biomedicals Inc., Santa Ana, CA, USA

*Analyzed at University of Missouri Agricultural Experiment Station Chemical Laboratories (Columbia, MO, USA)

Table 4. Amino acid analysis of Florida pompano diets including various soybean meal sources analyzed at University of Missouri Agricultural Experiment Station Chemical Laboratories (Columbia, MO, USA).

Composition	Basal	Bright Day 50%	Bright Day 100%	Soycomil PE 50%	Soycomil PE 100%	Hamlet 300 50%	Hamlet 300 100%	Expeller-extruded SBM 25%	Expeller-extruded SBM 50%
Alanine	2.19	2.14	2.15	2.12	2.16	2.05	2.08	2.12	2.12
Arginine	2.57	2.61	2.56	2.38	2.51	2.42	2.48	2.36	2.35
Aspartic Acid	3.79	3.86	3.84	3.62	3.8	3.59	3.6	3.57	3.52
Cysteine	0.6	0.6	0.6	0.57	0.59	0.59	0.58	0.58	0.57
Glutamic Acid	7.62	7.63	7.69	7.28	7.59	7.2	7.27	7.22	7.17
Glycine	2.08	2.01	2.07	2.02	2.08	1.95	2.03	2.00	2.02
Histidine	0.99	0.99	0.98	0.97	0.97	0.93	0.95	0.98	0.96
Hydroxylysine	0.03	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.03
Hydroxyproline	0.28	0.24	0.26	0.34	0.3	0.25	0.31	0.29	0.39
Isoleucine	1.93	1.87	1.89	1.74	1.9	1.81	1.82	1.73	1.69
Lanthionine §	0.06	0.06	0.06	0.04	0.05	0.06	0.06	0.02	0.01
Leucine	3.63	3.59	3.58	3.40	3.56	3.43	3.45	3.37	3.33
Lysine	2.28	2.24	2.22	2.12	2.17	2	2.17	2.12	2.04
Methionine	0.8	0.81	0.8	0.69	0.8	0.74	0.79	0.81	0.79
Ornithine §	0.02	0.02	0.02	0.03	0.04	0.04	0.02	0.04	0.04
Phenylalanine	2.09	2.08	2.07	1.92	2.06	1.97	1.97	1.91	1.88
Proline	2.66	2.69	2.69	2.35	2.67	2.55	2.58	2.31	2.33
Serine	1.65	1.72	1.69	1.77	1.67	1.56	1.55	1.75	1.75
Taurine §	0.71	0.76	0.73	0.62	0.71	1.18	0.76	0.66	0.67
Threonine	1.47	1.5	1.46	1.46	1.47	1.39	1.39	1.45	1.43
Tryptophan	0.44	0.46	0.45	0.41	0.45	0.44	0.43	0.41	0.41
Tyrosine	1.44	1.59	1.47	1.32	1.41	1.43	1.42	1.32	1.35
Valine	2.04	1.97	2	1.90	2	1.92	1.94	1.87	1.85

Table 5. Results (mean \pm standard deviation) of water quality parameters observed across trials.

Parameters	Trail 1	Trial 2	Trial 3
Temperature (°C)	27.76 \pm 0.45	29.51 \pm 2.06	29.22 \pm 2.43
Salinity (g/L)	11.23 \pm 0.76	22.41 \pm 3.31	20.98 \pm 3.18
DO	6.58 \pm 0.49	6.38 \pm 0.56	6.46 \pm 0.64
pH (mg/L)	7.14 \pm 0.27	7.77 \pm 0.40	7.41 \pm 0.45
TAN (mg/L)	0.27 \pm 0.20	0.09 \pm 0.17	0.12 \pm 0.16
Nitrite (mg/L)	0.22 \pm 0.15	0.21 \pm 0.16	0.47 \pm 0.42

Table 6. Growth response of juvenile (4.82 g mean initial weight) of Florida pompano offered diets containing various soybean meal sources over a 76-day growth trial (n=4, Trial 1).

Diets	Biomass (g)	Mean weight (g)	Weight gain (g)	Weight gain (%)	FCR	Apparent Net Protein Retention (%)	Survival (%)
Basal	306.93	32.39	27.67	587.67	2.12	18.29	95.00
Brightday 50%	315.40	34.58	29.79	631.35	2.19	20.26	92.50
Brightday 100%	367.95	39.87	34.93	713.68	2.12	21.06	92.50
Soycomil 50%	329.83	37.68	33.22	743.46	2.33	21.23	86.67
Soycomil 100%	357.33	38.60	33.67	686.43	2.12	21.31	92.50
Hamlet 300 50%	389.78	39.98	35.19	742.80	2.09	23.70	97.50
Hamlet 300 100%	351.35	36.89	32.07	672.67	2.08	23.86	95.00
EE SBM 25%	413.65	45.97	41.06	840.07	1.88	24.87	90.00
EE SBM 50%	383.95	39.52	34.73	727.41	2.12	25.09	97.50
P-value	0.457	0.493	0.523	0.718	0.874	0.284	0.925
PSE	36.31	3.47	4.50	84.26	0.13	2.02	6.04

Table 7. Proximate composition (g/100g dry weight) juvenile (4.82 g mean initial weight) of Florida pompano offered diets containing various soybean meal sources over a 76-day growth trial (n=4, Trial 1).

	Moisture*	Protein	Lipid	Ash	Apparent Net Protein Retention
Basal	72.77	63.87	25.82	10.97	18.29
Brightday 50%	71.77	62.05	27.05	9.55	20.26
Brightday 100%	71.77	60.25	27.47	12.75	21.06
Soycomil 50%	70.92	63.17	24.92	9.52	21.23
Soycomil 100%	72.35	62.77	27.42	12.24	21.31
Hamlet 300 50%	71.90	64.72	24.70	11.81	23.70
Hamlet 300 100%	69.82	57.00	27.32	9.82	23.86
EE SBM 25%	73.35	62.95	23.10	13.10	24.87
EE SBM 50%	71.82	64.17	23.92	10.55	25.09
P-value	0.474	0.712	0.768	0.171	0.284
PSE	1.01	2.92	2.14	1.10	2.02

*Expressed as an as-is basis