

PALM KERNEL MEAL AND OIL IN DIETS FOR JUVENILE NILE TILAPIA *Oreochromis niloticus*

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The cost of feeding can account for 70% of production costs of intensive fish farming. An alternative to cheapen these costs is the use of regional ingredients alternative formulations introduced in the diet. Among the various agro industrial by-products, palm *Elais guineensis* and its by-products are presented with availability and low cost market in northeastern Brazil. The objective was to evaluate the performance of Nile tilapia *Oreochromis niloticus* fed diets containing different levels of inclusion of palm kernel meal with soybean oil or palm oil.

The experiment was conducted at the Laboratory of Nutrition and Feeding Fish (Aquanut), Universidade Estadual de Santa Cruz (UESC), Ilhéus, Bahia, using 312 juvenile tilapia with initial weight of 51.97 ± 3.10 g, distributed in 24 tanks of fiber glass, circular, with a volume of 170 L in a closed system with recirculating water, individual aeration and biological filter in a completely randomized design in factorial 2 x 3 (oil source x level of inclusion of the palm kernel meal) and four replicates for 55 days. Six diets were prepared (25% digestible protein and 3000 kcal kg⁻¹ digestible energy) at 0, 15 and 30% inclusion of palm kernel meal and soybean oil or palm oil for each level of inclusion. The fish were fed twice a day, with delivery to satiation. The physical and chemical parameters of water were monitored daily. The performance parameters were evaluated: average daily gain (ADG), daily feed intake (DFI), feed conversion ratio (FCR), specific growth rate (SGR), condition factor (CF) and survival rate (SR). The results were subjected to analysis of variance and F test at 5% level of probability, and the Tukey test to compare means using the statistical program SAS 9.0.

The values of physical and chemical parameters of water were 28.2 ± 1.1 °C, 6.8 ± 0.1 and 4.8 ± 0.8 mg L⁻¹, respectively, for temperature, pH and dissolved oxygen. The growth performance parameters are presented in Table 1. No influence was observed ($P > 0.05$) source of oil used on the performance parameters evaluated, this it, diets containing soybean oil or palm oil are equivalent. The inclusion of palm kernel meal did not change the FCR and SR. The inclusion of palm kernel meal in the diet significantly ($P < 0.05$) values of ADG, SGR and CF of the individuals, this it, we obtained animals in better body condition and higher in a shorter time of cultivation. The inclusion of palm kernel meal also increased the values of DFI, suggesting that also has improved the palatability of food. Thus, the recorded value for FCR was also higher, however, was not statistically different ($P > 0.05$) between diets.

Table 1. Values of average daily gain (ADG g day⁻¹), daily feed intake (DFI g day⁻¹), feed conversion ratio (FCR g g⁻¹), specific growth rate (SGR % day⁻¹), condition factor (CF %) and survival rate (SR %)

Variable	Oil source		Level of inclusion of meal (%)			Value of P			CV (%)
	Soybean	Palm	0	15	30	Source	Level	Interaction	
ADG	1,08	1,09	0,91b	1,14a	1,22a	0,7580	0,0001	0,9196	10,80
DFI	1,37	1,38	1,13b	1,44a	1,55a	0,8245	0,0001	0,9758	10,56
FCR	1,35	1,26	1,25	1,26	1,41	0,2304	0,1346	0,2030	13,44
SGR	1,39	1,37	1,20b	1,43a	1,52a	0,6564	0,0001	0,4704	7,19
CF	1,72	1,73	1,66b	1,73a	1,78a	0,8676	0,0128	0,9696	4,20
SR	94,69	89,90	89,77	96,21	90,90	0,1927	0,3092	0,1126	9,41

Means in rows followed by different letters differ statistically by Tukey at 5% probability.