

PRACTICE ABSTRACT n° 21

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Feed Formulation with Local Ingredients – Kenya –

Feed formulation involves balancing of the different raw materials used in fish diet calculation in order to come up with a diet containing all the required nutrients in fish feeds. Macrophytes being one of the raw materials, i.e Azolla a small aquatic fern which flows on the water surface, can be used as unconventional high potential feed resource as it contains almost all essential amino acids, minerals such as iron, calcium, magnesium, potassium, phosphorus, manganese etc. The nutritive content of Azolla pinnata is as follows (Table 1): dry matter (DM) content of sun-dried Azolla meal was 91.78%; 74.50% organic matter; 22.25% crude protein; 11.19% crude fibre; 2.45% ether extract; 25.50% total ash; 38.61% nitrogen free extract (NFE) and 7.94% acid insoluble ash. The chemical analysis revealed that Azolla is rich in crude protein content and could be used as a potential unconventional natural protein source in livestock and poultry feeds (Alalade et al., 2007). Lemner minor is another aquatic plant identified for the feed formulation as it contains (Table 1) (% of dry weight): crude protein 16-45%; fat 4.4-4.0%; p-coumaric acid 0.015%; fiber 8-10% and ash 4-5%. These two macrophytes were used together with other raw materials (Maize bran, Sunflower, Cassava, Lake shrimp) to formulate fish feed. The feeds were used to feed tilapia fish from 20%-2% body weight at fingerlings to mature fish stage. Total weight and length data were collected on a monthly basis and resultswill be shared at a later date.

Table 1. Composition of Azolla pinnata and Lemner Minor

%	Dry matter	Fat	Organic matte	p-coumaric acid	Crude Protein	Crude Fiber	Ether Extract	Total ash	Nitrogen Free Extract	Acid Insoluble Ash
Azolla pinnata	91,78		74.5		22.25	11.19	2.45	25.5	38.61	7.94
Lemner Minor		4.4-4		0.015	16-45	8-10		4-5		

