

PRACTICE ABSTRACT n° 42

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Fermentation: Animal Feed from fermented fish offal

Solid fish hydrolysate feed was produced from the fish offal/guts by lacto-fermentation (using Lactic Acid Bacteria – LAB) as follows. Comminute and blend the fish waste using a knife and blender/food processor respectively. Add clean/potable water to the homogenate in a ratio of 1:1 i.e. 1 part water to 1 part fish waste. Add lyophilized LAB at an inoculation rate of 0.02% followed by sugar at a rate of 8.5% of the total volume. Stir the mixture to homogeneity and transfer to the fermentation vessel (jerry can, vat, demijohn etc.) An airlock should be used to cap the vessel and allow for anaerobic fermentation while containing the unpleasant odour from gases produced. Fermentation proceeds at ambient temperature (25-30 °C) for 3-4 week. The fermentation is complete when a faint vinegar odour replaces the previous putrid odour. Enhance the carbohydrate/solids content of the fish hydrolysate by adding cassava flour/maize bran in a ratio of 1:1 (10 kg). Mix to homogeneity. Sun-dry the mixture on tarpaulin/black polythene sheet for approximately 48 hrs.



Preparation of fish hydrolysate by Anaerobic Fermentation of Fish Guts using LAB



Enhancement of carbohydrate/solids content and drying for ease of handling and extended storage of feed

Table: Proximate and micronutrient composition of feed from fermented fish offal

Composition (% unless stated)	Feed from fermented fish offal	EAS 90 spec (compounded poultry feed)
Moisture content	16.19±1.52	13
Total Ash	5.31±0.18	
Crude Protein	13.62±2.02	14 – 22
Crude Fibre	3.47±0.65	7.5
Crude Fat	20.79±0.24	10 (max)
ME, Kcal/Kg	2264.14±78.16	2550 - 3000
Ca	0.41±0.16	1.0 – 4.5
P	0.71±0.25	0.7 – 1.0