ABSTRACT

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UTILIZATION OF FISH PROTEIN CONCENTRATE OF TILAPIA FISH
(Oreochromis mossambicus) ON BABY BISCUIT
(xvi + 137 pages : 13 tables; 22 figures; 16 appendices)

Tilapia fish (Oreochromis mossambicus) is one type of the fish are most
easy to be bred and cultivated because of Tilapia does not require specific
requirement for shelter and feed. Tilapia is a species of freshwater fish
consumption that has body shape with a flat gray, brown, or black. Fish protein
concentrate (FPC) is stable fish preparation, intended for human consumption, in
which the protein is more concentrated than in the original fish. FPC made with
the method of adding at a certain concentration and extraction repeating phase
with ethanol 96%. This treatment can reduce fat and moisture contents. The
objective of this research are to determine the best method (salt addition and
repeating phase) on producing FPC from Tilapia fish, to study physical
characteristic, amino acid profile, and protein digestibility of the best FPC, to
determine the best FPC concentration as skim milk substitution on baby biscuit
infant food formulation, and to study physical characteristic, amino acid profile,
and protein digestibility also compare the best baby biscuit formulation and
commercial product. The results show that producing method of FPC was washing
with ethanol without salt addition with 4 times of repeating phase obtained Type
A of FPC. The best FPC has characteristic as follow 0.43 g/ml density, 300.40%
water holding capacity, and 102.37% oil holding capacity. The amino acid
essential score of the FPC were adequate in lisin, and with histidine as the
limiting amino acid with 98.13% protein digestibility. The best biscuit formulation
based on organoleptic score was substitution 75% of FPC. This biscuit had
higher density, lower water holding capacity, and lower oil holding capacity in
compared to commercial infant food product. The amino acids of biscuit was
adequate in glutamic acid, and methionine as limiting amino acid, which has
85.92% protein digestibility.

Keywords : FPC, infant, infant food, Oreochromis mossambicus