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A review of fish food product processing and development

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Abstract
Nutrition and feeding influence growth, reproduction, and health of fish. Fish is commonly use for meal in every place of all over word. Fish is source of high-protein, high in omega-3 fatty acids and fish oil is the source is vitamin D. Human are consume fist but fish is also consume some food. They are growing with the help of fish food when we are cradle on pond or lack. Flask food for aquarium fish were invented middle of the last century. The invention of flakes and other dried food made life in a fish tank a whole lot easier just few sprinkler and dinner is served its not much like the live water fleas or blood worm. These fish foods are make by different ingredient and help of different food processing equipment.

Keywords: flask food, nutrition meal, fish food

Introduction
Fish is highly nutritive and rich source of animal proteins. For the improvement of fisheries and to achieve maximum yields from resources of fresh water, it is necessary to provide artificial feed, by which fish grows rapidly and attains maximum weight in shortest possible time. The demand for sea food continues to increase, and aquaculture production has filled the shortfall associated with static wild fish landings **(**FAO, 2010) [3].

Among commonly used feed ingredients, fish meal is considered to be the best ingredients, due to its compatibility with the protein requirement of fish (Alam et al. 1996) [1]. Replacement of fish meal with cheaper ingredients of plant origin in fish feed is necessary because of rising cost and uncertain availability of fish meal (Higgs et al. 1995) [4]. Inclusion of feedstuffs with relatively high levels of carbohydrate in formulated fish feed is preferred in view of its protein-sparing action that may make the diet more cost effective (Hidalgo et al. 1993) [5]. According to Rumsey (1993) [6], Increased use of plant protein supplements in fish feed can reduce the cost of fish meal. The research has focused on utilizing less expensive and readily available resources to replace fish meal, without reducing the nutritional quality of feed (EI-Sayed 1999). Fish feed/aquafeed is one of the most expensive inputs for small aquaculture farms. At the same time it is one of the most important components, especially for the whole aquaculture ecosystem [1]. Increase in intensive culture of many freshwater fishes places a great demand on efficient diets. Good nutrition in production systems is essential to economically produce a healthy, high product the first consideration for formulation of feed is the quality of the feed ingredients. (Bhosale *et al*, 2010) [7].

According to Bhosale *et al.* (2010) [7] increased use of plant protein supplements in fish feed can reduce the cost of fish meal. The research has focused on utilizing less expensive and readily available resources to replace fish meal, without reducing the nutritional quality of feed (Mahboob and Sheri, 1997).

Flask food for aquarium fish were invented middle of the last century and different the invention has made before they came along pet fish were fed live food from river and streams a food source that wants always accessible. The invention of flakes and other dried food made life in a fish tank a whole lot easier just few sprinkler and dinner is served its not much like the live water fleas or blood worm. The fish would feed on in their natural environment but contain the nutrients and vitamins they need these dried tidbits can be super sized to appeal to larger fish that prefer to chow down on something more substantial each formulation consist of up to 40 different ingredients.

According to Somerville *et al.* (2014) [8] common feed ingredient sources of most important nutrient components is in table which is given below.

Common feed ingredient sources of the most important nutrient components

Nutrient components	Feed ingredient sources
Protein	Plant-based sources: algae, yeast, soybean meal, cottonseed meal, peanuts, sunflower, rapeseed/canola, other oil-seed cakes. Animal-based sources: fishery by-products (fishmeal or offal), poultry by-products (poultry meal or offal), meat meal, meat and bone meal, blood meal.
Carbohydrates	Wheat flour, wheat bran, corn flour, corn bran, rice bran, potato starch, cassava root meal.
Lipids	Fish oil, vegetable oil (soybean, canola, sunflower), processed animal fat.
Vitamins	Vitamin premix, yeast, legumes, liver, milk, bran, wheat germ, fish and vegetable oil.
Minerals	Mineral premix, crushed bone.

The main components are fish meal wheat flour, soy and paprika oil and they also add food colorant because fish are drawn to certain colors they follow. A precise recipe and measure the ingredients carefully they bland smaller components together first they include lecithin a blending and thickening agent also found in food humans consume and calcium for bone strength. The main ingredient the fishmeal flour and oils and piped from silos into big tanks and mixed without water they add the smaller premix and blend everything together to produce a thick slurry they spray the slurry onto the surface of a series of rolling heated drums as the sheet roll off a long rotating blade chop it up produce big flask they pretty chunky at this paint and will need to be broken up into bite sized version next they fall down a chute and into a plastic bag. It transfers them by the bag full to the next conveyer.

The various colors represent different formulation the green our veggie flakes while the red our protein based they all head into a spiraling device known as the tumbler. Its spins to loss the flakes around. This mixed and breaks them into smaller flakes after several minutes in the tumbler the flakes fall onto a series of screen to grade them big size small, medium and large. The land in separate bins now mixed and sorted by size mean while the production of fish food stick in under way machinery presses a food mesh through the small holes of an extruder's plate to create spaghetti like strings as the strings exit rotating knives cut them into sticks. The sticks dry and solidify. After that wheels a hopper full of flakes above a chute and remove the trapdoor the mix falls down one floor on to the packaging line at the same time a column of empty cans head towards the flakes the fish food flakes fall through special opening that funnel them into the can machinery cut out aluminum foil caps and slaps them on the tops of the container hot circular irons them seal the cap to the cans. This conveyor belt is also a computerized scale with keep track of the amount of products in the cans. Then device spin by to twist plastic lids onto the threaded rims of the cans as cans pass by a carousel application press glue backed product labels on them and these fish food flakes are done.

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