

Overview of aquaculture systems in Egypt and Nigeria, prospects, potentials, and constraints

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Introduction

The aquaculture sector has experienced significant growth and development globally in recent years, partly thanks to increased consumption. Fish is an essential part of the diet for billions of people around the world. Fish feed has been a major driver of the prosperity of the aquaculture sector. They are an important source of nutrients and minerals and promote the overall development of fish. Fish feed is an essential component of commercial and residential aquaculture, providing balanced nutrition and nutrition to farmed fish. Aquaculture feeds, which are mainly in the form of pellets or granules, provide complete nutrition in a concentrated and stable form, ensuring that fish are well fed and reach their full potential. Important components of fish feed are fish oil and fishmeal. It is then combined with other key ingredients such as minerals, vitamins, grains and vegetable proteins to form granules or pellets. Today, manufacturers increasingly use ingredients from both animal and plant sources. The obvious changes in fishmeal and fish oil are due to declining stock abundance. Most marine fish and some fish found in freshwater lakes are carnivores. Therefore, they require a diet rich in fat and protein, and small amounts of carbohydrates and fiber. Because this allows them to digest starches more easily than carnivores. Traditionally, the two most important ingredients are fishmeal and fish oil. These are primarily derived from the processing of wild-caught fish, mostly of pelagic species, which are generally unsuitable for processing for human consumption.

Description

Fish sold for human consumption command a higher price than those used to make fishmeal. Fishmeal fishing is often called reduction fishing. The world's largest reduction fisheries are in the Pacific Ocean off Peru and Chile and are regulated by the governments of those countries. The North Atlantic Ocean is another important source of fishmeal and

fish oil. Many large suppliers belong to the International Fishmeal and Fish Oil Organization. Fishmeal is a brown, mealy material made by specialized producers who cook, press, dry and mince fish. Fish oil is effectively a by-product of this process and is an important long-chain omega. Fish has been proven to be a rich source of energy and fatty acids, including the three fatty acids EPA and DHA, which are currently associated with health benefits. In general, fish is also a good source of many vitamins and minerals and is often recommended as part of a healthy diet by state food agencies. Supplementing with protein and oil makes aquaculture possible. Other potential mineral resources are also being explored. This diet consists of protein-rich delipidated biomass of *Nannochloropsis oculata* and whole cells of DHA-rich *Schizochytrium* species. It was found to be superior to the reference marine fish meal and fish oil diet in terms of growth, weight gain, specific growth rate, highest feed conversion rate, and fish nutrient content.

Conclusion

Modern fish food is made by grinding and mixing ingredients such as fishmeal, vegetable protein, and binders such as wheat. With current technology, fish feed extruders play an important role in the production line. Most of the fish feed manufacturing process takes place in an extruder, but grinding and mixing can have a significant impact on the quality of the final product. Whole diameter is usually the most important parameter in determining pellet diameter and can range from less than a millimeter to over a centimeter. Once the feed is extruded, it is cut to form pellets of the desired length. Dry the pellets and add oil. By adjusting parameters such as temperature and pressure, manufacturers can produce pellets suitable for different fish farming methods, including slow-swimming or sinking feeds and feeds suitable for recirculating systems. Dried food pellets are stable for relatively long periods of time for convenient storage and distribution.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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