

Production of Healthy and Safe Dried Fish Products for Sustainable Utilization of Marine Fisheries Resources

Asst. Prof. Md. Masud Rana



Bangladesh has boundless potential in the field of blue economy, which stands for the sustainable use of marine resources. The blue economy is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems". The Bay of Bengal is a vast natural resource of Bangladesh, extending 710 km from southeast Teknaf Upazila to southwest Shyamnagar Upazila and an Exclusive Economic Zone (EEZ) of 200 nautical miles from the baseline. At present, Bangladeshi trawlers catch fish within 35-40 nautical miles from the coast. There is an exceptional opportunity to strengthen the country's

maritime economy by working in a broader range. According to the Food and Agriculture Organization (FAO), Bangladesh is the first of the four countries among Thailand, India, and China worldwide to achieve massive success in fisheries by 2022. Fish production has increased by 53% in the last 10 years. And fish exports have increased by more than 20%. Hence, proper utilization of the marine area will surely increase the fish industry.

The Bay of Bengal has 475 fish and fish-like species, contributing to the life and livelihood of coastal fishermen and meeting the growing population's nutritional needs. It

is a home of about 36 species of shrimp, 5 species of lobster, more than 15 species of crab, 5 species of turtle, 13 species of coral, 21 species of shark and ray, 05 species of squid, 04 species of octopus and 05 species of cuttlefish, About 7 lakh MT of fish have been produced in seawater where hilsa and shrimp are the dominant species. A large number of marine fish are caught in the coastal areas. Fresh fish rapidly deteriorates and spoil unless some way can be found to preserve it. One of the oldest and most effective methods of food preservation is drying. About 90% of the total marine catch in Bangladesh is processed through drying. Drying or sun-drying is a method in which the fish is exposed to the sun to remove water. Drying removes enough water from the fish body to inhibit microbial growth and activity and spoil. Techniques of fish drying in open air and sun have been practiced in Bangladesh since ancient times.

The marine dried fishes have demand in domestic and international markets due to their unique taste and flavor, and their demands are increasing daily in the international markets. Dry fish processing is performed only in some coastal regions of Bangladesh where modern storage facilities and satisfactory transport facilities are unavailable for live fish. The critical areas are Dublarchar in Sundarbans, St. Martin Island, Rangabali, Sonadia Island, Maheshkhali and Cox's Bazar. Each season, 50 to 60 thousand tons of dried fish of multispecies and fishmeal are produced in Nazirertek dry fish mahal, Cox's Bazar alone, and support about two hundred crore takas to the country's economy. Cox's Bazar produces 60 percent of the country's total demand for dry fish. Every year, 400 crores worth of dry fish are exported to the Middle East and European countries after meeting the country's requirements. Commercially Important marine fish and shrimps used in

drying include Bomby duck (Harpodon Neherius), Ribbon fish (Trichiurus Haumela), Lakkha (Polynemus Indicus), Pomfret (Pampus Chinensis), Bhetki (L. Calcarifer), Poa (Johnius Argentatus) and Prawns (Metapenaeus & Penaeus species), Physa, etc.

It usually takes four to seven days to dry the fish, while drying the fish following the traditional method in the sun allows harmful flies of the species *Lucilia Cuprina* to lay eggs on the fish and produce larvae, these larvae of the flies eat and destroy the fish. About 30 percent of dried fish are destroyed by the attack of these wild flies, resulting in a loss of dried fish worth 300 crore takes each year. To protect from this attack, dry fish producers apply various toxic pesticides, including DDT and a considerable amount of low-quality salt, to raw fish before drying, which causes severe damage to the health of both consumers and producers. When dried fish producers apply pesticides, the pesticides are inhaled. Fish eaters have various adverse effects on their bodies due to consuming these pesticide-laced fish. For example, the body's immunity decreases, the liver, lungs, and kidneys are easily diseased, the risk of heart disease increases, and fertility is affected.

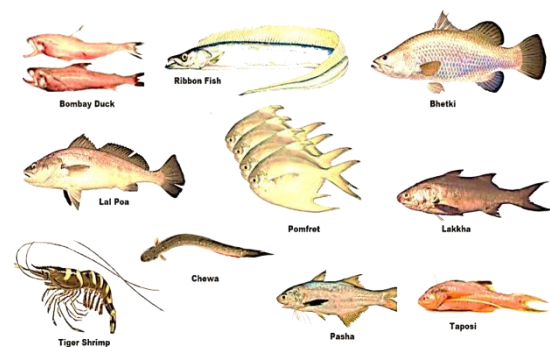


Figure: Commercially Available Marine Fishes Used in Drying

On the other hand, women may have premature miscarriages, stillbirths, or congenital disabilities. As a result, the

quality of dried fruit is decreasing, and the cost of production is increasing. Cancer risk is at a higher rate in Chittagong and is being blamed on the eating habits of dry fish of the people there. It is widely used as human food and raw materials for fish and chicken feed. But if these adulterated dried fish are used in chicken farms, the chemical used in dried fish can enter the body of fish and chicken. Not only dried fish and other meats are also becoming unfit for consumption, and people are suffering from many complex diseases by eating these unhealthy foods. Awareness is necessary to escape from this threatening situation.

As a result, the market price of dried fish is decreasing daily; on the other hand, dried fish cannot be exported abroad. Therefore, it is mandatory to ensure the production and marketing of dried fish without pesticides for a safe life. Avoiding traditional methods, we should focus on scientific methods of fish drying. If you see a white dot on dry skin or do not get any smell of it, you should refrain from buying it and create an anti-adulteration movement everywhere. Considering all these, the scientists of the Bangladesh Atomic Energy Commission have developed the technology to control the harmful pest of the fish through fly sterilization technology to produce poison-free, safe and healthy fish. Through fly sterilization technology, it is possible to increase the production and quality of dried fish by reducing the breeding of harmful flies. This method is eco-friendly, durable, simple, and cost-effective. This method can produce toxin-free, safe, and healthy dried fish that will increase the demand for dried fish in the domestic market. Dried fish producers will get higher prices. In addition, both consumers and producers will be protected from health hazards.

On the other hand, it will also be possible to earn a lot of foreign exchange by exporting this non-toxic and safe dry fish abroad. BFRI has already developed a mechanical technique to produce non-toxic organic dried fish products. A few factories using this technique have successfully produced their products, but it still needs to be used in 100% of the farms because of their cost.

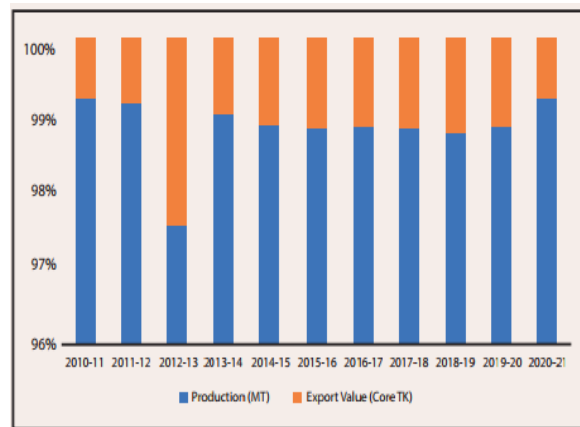


Figure: Production and Export Value of Dried Fish Products

Dried fish products exported from our country started a few decades ago. At that time, exported dry fish were processed in the coastal areas of Cox's Bazar, Teknaf, Kutubdia, Rangadia, Maheshkhali, Sonadia, Chakaria, St. Martin. It is clear to us that, along with other products, dry fish are also being exported from those places to earn vast amounts of foreign exchange by exporting dried fish products. These dried products are exported entirely by private enterprises, and there is no government policy regarding exporting dry fish abroad. Even the government has no system to monitor dry fish production or preserve it.

All in all, the exporters face many hardships while producing and exporting dried fish products. As a result, it is impossible to export the number of dried fish required in the foreign market. Proper attention and policy support from the government are necessary in this regard. The government

must understand the enormous amount of foreign exchange that can be earned from this industry through proper management. The government should come forward to help dry fish producers and traders. Practical steps should be taken, including giving them loans on easy terms construction of permanent dry fish processing centers. In the coastal areas of Bangladesh, especially Cox's Bazar, Teknaf, Kutubdia, and other areas, people depend on fishing for their livelihood. But production of poor-quality dried fish provides a less economic benefit. In such a situation, they are training the residents of the coastal communities of Bangladesh on the techniques of safe dried fish production and providing different types of dryers for producing safe products. As a

result, they will benefit economically, which will act as a tool to change the fate of the coastal community and the sustainable use of ocean living resources. Production of safe and healthy dried fish products will be the easy solution to meet the protein requirement of the increasing population of our country, and it will also play a significant role in the national economy and the socioeconomic development of the coastal communities.

Writer: Md. Masud Rana is the Chairman & Assistant Professor at the Department of Fishing and Post Harvest Technology, Sher-e-Bangla Agricultural University.

Email: ranadof.bd@gmail.com