



中華人民共和國香港特別行政區政府總部食物及衛生局
Food and Health Bureau, Government Secretariat
The Government of the Hong Kong Special Administrative Region
The People's Republic of China

[English Translation]

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Clerk to Panel on Food Safety and
Environmental Hygiene
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn.: Miss Josephine SO)

Dear Miss SO,

Panel on Food Safety and Environmental Hygiene
Follow-up on the Proposal to Strengthen
the Management of Licensed Marine Fish Farms

Our consolidated response to the captioned subject discussed at the special meeting of the LegCo Panel on Food Safety and Environmental Hygiene on 2 April 2019 is as follows:

Fish feed is a major cost for fish farmers. Proper management of feed can reduce operating costs, improve fish farm environment and ensure healthy growth of fish stock. It is a traditional practice for mariculturists in Hong Kong to feed their stock with trash fish, i.e. fishing by-catch or small fish, including fingerling with commercial value.

Using trash fish as feed adversely impacts on the marine environment and is not a sustainable aquaculture practice. Nowadays, the mariculture sector all over the world primarily uses dry pellet feed. Trash fish are irregular in size with low palatability and tend to sink quickly, leading to a high degree of wastage. The residue deposited on the seabed will result in a heightened risk of hypoxia and death from disease. High content of fat in trash fish is prone to oxidation and rancidification, resulting in fatty liver disease, weakening the immunity of cultured fish and increasing the risk of infection. Moreover, trash fish captured in the wild and not sterilised are more likely to carry pathogen. Cultured fish fed with trash fish are susceptible to disease, leading to a higher mortality.

There are two main types of dry pellet fish feed, i.e. the sinking type and the extruded floating type, the key ingredients of both are fishmeal, fish oil, vitamins and binder, which are formulated in accordance with the cultured species. Protein of animal or plant origin, fish oil or other lipids, vitamin premix and minerals can also be added in dry pellet fish feed, making it highly nutritious and effective in enhancing fish health. The processes of mixing, texture control, heating and extruding will gelatinise the starch in the ingredients, thus reducing the content of free fatty acid. The reduction will help digestion of fat and absorption of nutrients of the fish feed.

Pellet feed of specific sizes and densities can be made to minimize size irregularity to enhance the feed palatability and accommodate the feeding habits of cultured species in different growth stages, which in turn will reduce environmental pollution caused by uneaten feed. Pellet feed treated under high temperature and high pressure and dehydrated is low in moisture and stable in water. The manufacturing process can kill the micro-organisms and bacteria in the ingredients, making the feed more hygienic and safe. Supply of pellet feed tends to be more stable as it has a long shelf life, is easy to store and transport. Using dry pellet feed can enhance fish farmers' harvest by preventing diseases caused by feed and effectively lowering fish mortality.

In terms of cost-effectiveness, while the price of trash fish per kilogram is lower than that of dry pellet feed, the total cost of using trash fish is higher as cultured fish have to consume a larger quantity of trash fish to meet nutritional needs due to the feed's high moisture content (about 70%) and higher feed conversion rate¹.

¹ Denotes how many kilogram of feed it takes to produce one kilogram of fish meat.

A great variety of dry pellet feed, including dedicated formulated feed for particular species (e.g. grouper, sea perch and grey mullet), is available on the market. Fish farmers may choose fish feed to suit the specific feeding habits of different species (e.g. carnivorous fish require a higher intake of protein and fat than the omnivorous species). Moreover, transportation cost can be reduced by group purchase.

To conclude, dry feed pellet when used reasonably to suit the needs of target cultured fish is a better choice in terms of cost, hygiene, nutritional content, cost-effectiveness, survival rate of cultured fish, availability, and the environment and ecology.

Yours sincerely,

[Signed]

(Ben GURUNG)
for Secretary for Food and Health

cc: Director of Agriculture, Fisheries and Conservation
(Attn.: Dr Jim CHU; Fax: 2314 2866)