

Black soldier fly floating fish feed



Fish feed pellets

Technology Description

Black soldier fly can efficiently feed upon organic wastes and builds up on its biomass that is protein rich in nature that can partially or completely replace fish meal in aquaculture feed. The formulated BSF based feed was tried for the grow out stages of Pangasius, *Pangasionodon hypophthalmus* in cage culture. The formulated floating feed is highly palatable with a water stability of minimum 2-3 hours. The feed is nutrient rich with 24-28% protein and 5% lipids optimum for the growth of the fishes.

Background

The increasing global demand for and decreasing availability of fish meal and soy meal has led to sharp increases in the price of fish meal, and hence, the cost of aquaculture has increased as well. Black soldier fly (BSF), *Hermetia illucens* is a detritivores insect, can efficiently convert protein-free organic wastes into protein-rich biomass that could serve as partial or complete replacement of fish feed with BSF as protein supplement.

Benefits /Utility

- The formulated fish feed recorded good palatability to fishes without any deleterious effects over its growth and development.
- Formulated black soldier fly-based fish feed recorded lowest feed conversion ratio which on par with commercial meal.

Scalability

It can be scaled up to large quantities using large-scale feed mills of 0.5 to 1 tonne capacity per day depending on the need.

Business and commercial potential

This technology has a wide scope of commercialization and there is a high demand for alternative source of protein in fish feed. At present, the aquacultural industry rely on fish meal / soy meal as a sole source of protein. There is scope for utilisation of black soldier fly protein in fish feed.

Financial requirement

The cost of production of the feed 300/- per kg and it can be sold at 400-500/kg. An investment of 10-15 lakhs for equipments, other infrastructure etc. is required to produce 100 tonnes/ annum.



Fish reared on BSF pellet feed



BSF pupae

Target Market/Customer

- Fish feed industries
- Fish farmers
- Private entrepreneurs engaged in aquaculture.

Social Impact of the Technology

- The present technology is an efficient way to convert waste to nutrient rich biomass using black soldier fly.
- Being a cheaper source of protein, black soldier fly can fully or partially replace fish meal which could be a viable alternative to the fish meal.