
Growth, bioconversion efficiency and nutritional evaluation of black soldier fly *Hermetia illucens* larvae in different substrates–A novel aquafeed ingredient

Young Marine Biologist Award

An indigenous system for collection of Black soldierfly pupae and its nutritional evaluation for making fish feeds

Nutritional evaluation, bioconversion performance and phylogenetic assessment of black soldier fly (*Hermetia illucens*, Linn. 1758) larvae valorized from food waste

FOOD WASTE TO FISH FEED: VALORISATION OF FOOD WASTE USING BLACK SOLDIER FLY (*HERMETIA ILLUCENS*, LINN. 1758) LARVAE–A STEP TOWARDS CIRCULAR BIO-ECONOMY

CONSERVATION OF LIFE BELOW WATER (COLIBA-2021)

Certificate

We offer trainings and consultancy for establishing BSFL based bioconversion units

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For more details,

The Director
ICAR-Central Marine Fisheries Research Institute
Post Box No. 1603, Ernakulam North P.O., Kochi-682 018
Webpage: https://www.cmfri.org.in
Phone: +91 484 2394357 /12, 2391407
Email: director.cmfri@icar.gov.in

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Dr. Grinson George, Director, ICAR-CMFRI

Prepared by:
Sanal Ebeneezar, Linga Prabu D., Chandrasekar S., Adnan H. Gora, Sayooj P., Sajina K. A., Vipinkumar V.P., Vijayagopal P. and Kajal Chakraborty

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CADALMIN™ BSF ZW

A Zero-Waste bio-conversion system

Black Soldier Fly Larvae based Bioconversion System

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ICAR-Central Marine Fisheries Research Institute
(Department of Agricultural Research and Education, Government of India)
P.B. No. 1603, Ernakulam North P.O., Kochi - 682 018, Kerala, India

CADALMIN™ BSF ZW

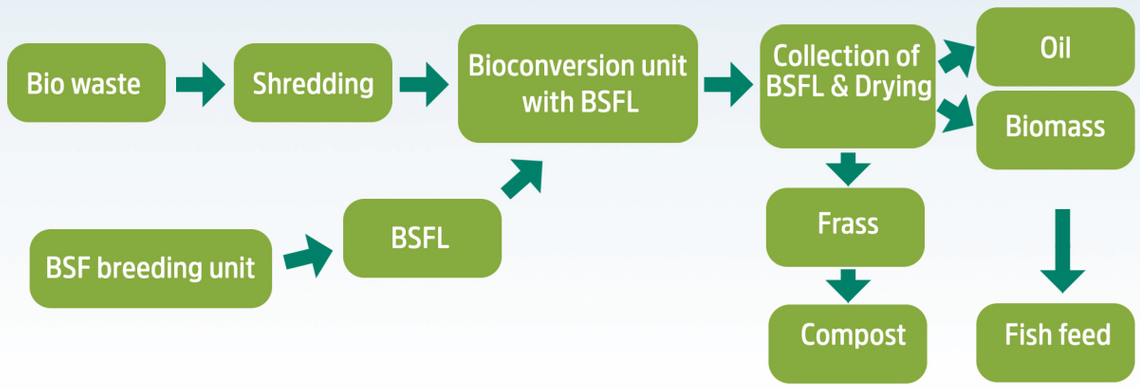
A Zero-Waste bio-conversion system

Bio-waste disposal is one of the challenging and often neglected issues in developing countries including India. To reduce the environmental burden and improve public health, innovative, eco-friendly and financially viable waste management strategies should be explored and fostered. The major advantage of organic waste bioconversion is that during the process, harmful chemicals are not required or produced besides simultaneously producing valuable outputs. A pilot scale system for valorization of organic waste to fish feeds using black soldier fly larvae (*Hermetia illucens*) was established at ICAR- CMFRI, Kochi for the bioconversion and valorisation of bio-waste. Organic waste including canteen waste and fish sampling wastes from the Divisions of CMFRI are being valorized into alternative protein and lipid rich aquafeed ingredients and compost.

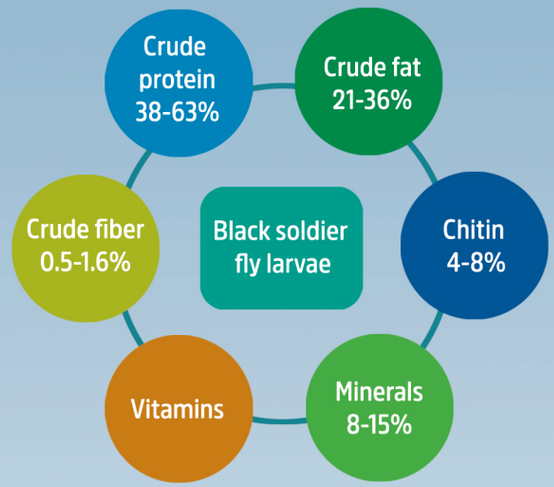
This is an effective innovative & eco-friendly organic bioconversion model for the generation of high value sustainable protein and lipid rich ingredients for fish feeds. The unit houses dark-light chamber for breeding, egg laying and pupal incubation, early larval rearing, advanced larval rearing, self-harvesting unit and system for composting of frass. The frass can be utilized as an excellent soil amendment/ organic fertilizer.

Black soldier fly larvae are an excellent source of high value sustainable protein and lipid ingredients for aquafeeds.

Process flow for the valorization of organic waste



Nutritional composition



BSFL rearing cum bioconversion unit

Estimates for 100 t organic waste processing