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# Flywheel of change: CMFRI turns to Black Soldier Fly for sustainable fish feed


In a pioneering move that fuses circular economy principles with inclusive coastal development, the ICAR-Central Marine Fisheries Research Institute (CMFRI) has launched a three-day hands-on training programme on fish feed production using Black Soldier Fly (BSF) larvae. Timed to coincide with National Fish Farmers Day, the initiative signals a bold pivot toward sustainable, locally adaptable, and economically viable aquaculture practices for India's coastal communities.

The training, tailored for beneficiaries under CMFRI's Scheduled Caste Sub Plan (SCSP), is more than a technical workshop—it's an effort to democratize aquaculture innovation. At a time when conventional fish feed ingredients like fish meal and soybean are growing costlier and less sustainable, BSF larvae offers a compelling alternative. Rich in protein and environmentally friendly, BSF-based feed has emerged as a scalable substitute that supports healthy fish growth while reducing input costs—particularly vital in capital-intensive systems like cage farming and bio-floc cultivation.

CMFRI Director Dr. Grinson George, inaugurating the event, highlighted the high economic stakes tied to feed in aquaculture operations. Feed accounts for 40–60 per cent of operational expenditure, a burden that is even heavier in intensive farming systems. For first-generation fish farmers—many of them women from Scheduled Caste backgrounds—profit margins often hinge on how efficiently this single input is managed. The institute's latest initiative, therefore, addresses a critical economic bottleneck while aligning with sustainability mandates.

The training focuses on equipping participants with practical skills to process BSF larvae into nutrient-rich pellet feed. Unlike imported or industrially refined ingredients, BSF larvae can be farmed using organic waste, creating a virtuous loop that connects waste reduction, protein recovery, and livelihoods enhancement. In doing so, CMFRI's programme is subtly introducing a new paradigm: one in which aquaculture is not only about growing fish but about cultivating resilient local ecosystems and empowered communities.

Dr. George framed the programme as part of a larger mission to boost livelihood opportunities among marginalised coastal populations. That vision is already being realised under the SCSP, which supports the uptake of cost-effective aquaculture techniques—particularly cage and bio-floc farming—among Scheduled Caste households. With these systems gaining popularity across India's coastal belts, the ability to produce low-cost, high-efficiency feed could significantly enhance adoption rates and long-term viability.

The presence of domain experts including Dr. K Madhu, Dr. Vipin Kumar V P, Dr. Rema Madhu, and Dr. Sanal Ebeneezar underscored the scientific backing behind the training. But the true strength of this initiative lies in its pragmatic orientation: this is not research for the shelf—it's science in the service of survival, profitability, and self-reliance. As Indian aquaculture faces growing pressures from resource constraints, climate variability, and input inflation, the shift to BSF larvae as a feed component is both timely and transformative. It marks a subtle but powerful departure from extractive marine protein chains toward regenerative, land-linked nutrient loops. And in targeting the programme at underrepresented fish farmers, CMFRI is ensuring that the sustainability transition does not exclude the very communities that depend most on the sea.

In a sector where innovation often feels out of reach for the marginalised, this initiative offers a blueprint for inclusive progress: smart science, low-cost solutions, and people-first implementation. If scaled with policy support and market linkages, Black Soldier Fly larvae might soon prove not just a nutritional breakthrough, but an economic equaliser in India's blue economy.