



THE INDIAN FRESHWATER FISHERIES SECTOR

How to scale up preventive approaches to minimise antibiotic use

Obtaining quality seed in freshwater aquaculture: Challenges and Concerns

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Disease-resilient breeds in India (Genetically Improved Strains)



ICAR- CIFA



- ❑ **AhR Jayanti Rohu**
- ❑ **Emerged by Selective Breeding**
- ❑ **Resistance against Aeromoniasis, bacterial infection, particularly from *Aeromonas hydrophila***

- ❑ **CIFA-Amrit Catla**
- ❑ **Breeding of 4th generation- 2024**
- ❑ **Higher survival rates and better disease resistance**



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CIFA-GI SCAMPI



Genetically Improved Freshwater Prawn
(Macrobrachium rosenbergii)

AMUR COMMON CARP



FRIC Hesaraghatta
KVAFSU

GIFT TILAPIA
(Oreochromis niloticus)



MAHAMAGUR



Clarias magur
Freshwater Fish Farm, Balbhadrapuram
ICAR-CIFE



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Why GI Strains become disease-resilient?

- ☐ **Parents with Desirable Traits**
- ☐ **Improved Immunity**
- ☐ **Reduced Infectivity**
- ☐ **Better Environmental Adaptability**
- ☐ **Better Feed Efficiency**
- ☐ **Efficient Biofloc Utilization**
- ☐ **Shorter Harvest Period**
- ☐ **Late Maturity**
- ☐ **Heritable Trait**
- ☐ **Identification of Genes**



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Broodstock Management for Quality Seed Production

- ☐ **Minimization of Inbreeding**
- ☐ **Maximize number of broodstock contributing to next generation**
- ☐ **Equal numbers of fish from each spawning set for next generation**
- ☐ **Separate different age classes**
- ☐ **Evaluation of performance of the stocks**
- ☐ **Avoid mixing of stocks**
- ☐ **Pond management and Feeding**
- ☐ **Selection of broodstocks**
- ☐ **Proper breeding techniques**
- ☐ **Species-wise segregation of spent broodstocks**



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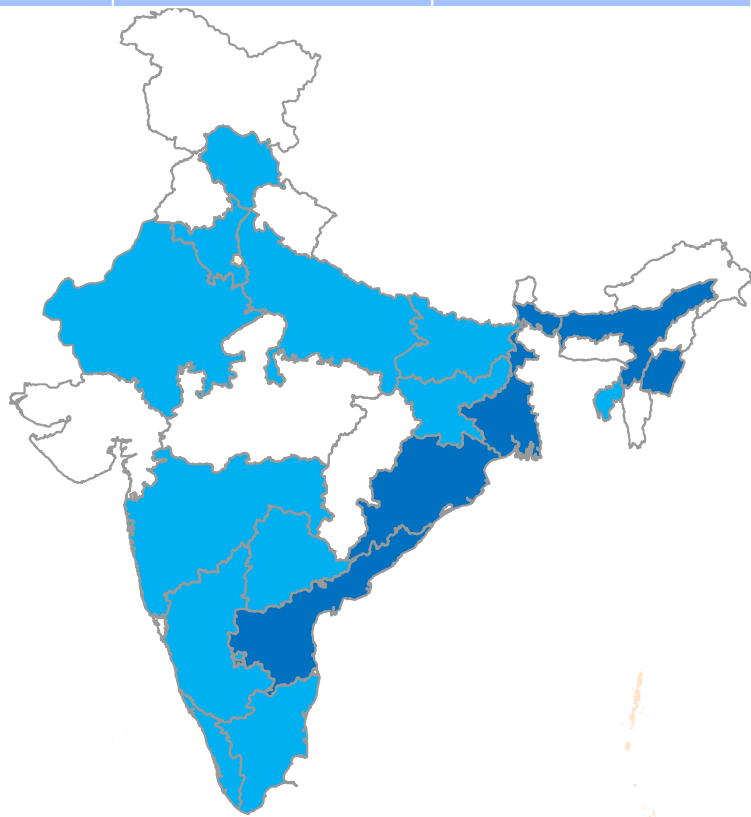
How to scale up preventive approaches to minimise antibiotic use

NFDB- EASTERN REGIONAL CENTRE **(Its Role in Production & Supply of Quality Seed)**

- ☐ Maintenance of good quality and/or genetically improved brood stocks
- ☐ Production of quality seed of genetically improved brood stocks at NFFBB Multiplication Centre
- ☐ Accreditation/ Networking of hatcheries and seed growers
- ☐ Supply of the breeder seed to the accredited hatcheries and seed growers
- ☐ Training & Capacity building of officers and farmers
- ☐ Awareness programmes on importance of culture of genetically improved strains



YEAR	REGISTERED NETWORK HATCHERY	REGISTERED NETWORK SEED GROWER
2021-22	66	46
2022-23	9	16
2023-24	4	-
TOTAL	79 Nos	62 Nos
2024-25	7*	18*



S. N.	STATE	NETWORK HATCHERY (IN NO.)	NETWORK SEED GROWER (IN NO.)
1	Andhra Pradesh	8*	7
2	Assam	20	5
3	Bihar	3	5
4	Haryana	1	
5	Himachal Pradesh		1
6	Jharkhand	2	1
7	Karnataka	1	1
8	Kerala	2*	1
9	Maharashtra	2	1
10	Manipur	8	1
11	Odisha	15*	9
12	Rajasthan	1	
13	Tamil Nadu	1*	
14	Telangana	1	3
15	Tripura	3	14
16	Uttar Pradesh	2	10
17	West Bengal	9	3

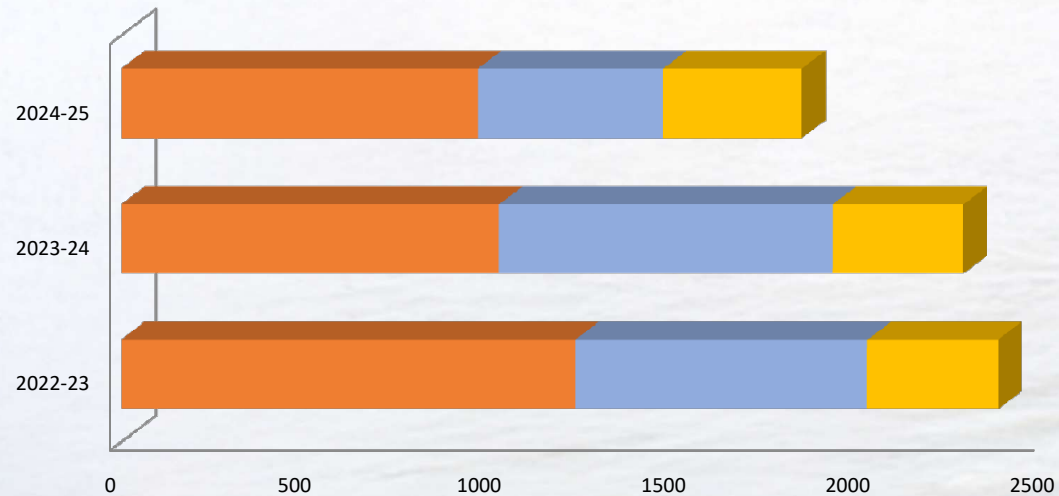
***Scampi Hatchery (9)- AP- 6, KL- 1, OD- 2 & TN- 1**



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Production & Supply Status of Genetically Improved Fish Strains



	2022-23	2023-24	2024-25
JAYANTI ROHU	1229	1023	965
AMRIT CATLA	791	903	501
AMUR COMMON CARP	353	354	375



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Challenges and Concerns

- ☐ **Maintenance of Genetic Purity**
- ☐ **Follow of SOPs**
- ☐ **Categorization of Hatcheries**
- ☐ **Encouragement on production/ farming of genetically improved strains**
- ☐ **Development of Multi- Species Hatchery**
- ☐ **Digital information on availability of quality seed**
- ☐ **Uniformity in fixation of cost**
- ☐ **Norms on supply/ purchase of quality seed**
- ☐ **Introduction of new strains from other countries**
- ☐ **Certification of Seed**

Thank You



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