Glossary

1. **PHOTOPERIOD: - The period of time each day during which an organism receives illumination; day length.**

2. **HYBRIDIZATION: - The process of combining different varieties of organisms to create a hybrid.**

3. **Malnutrition:-Lack of proper nutrition, caused by not having enough to eat, not eating enough of the right things, or being unable to use the food that one does eat.**

4. **Animal Husbandry:- Animal husbandry is the branch of agriculture concerned with animals that are raised for meat, fibre, milk, eggs, or other products. It includes day-to-day care, selective breeding and the raising of livestock.**

5. **Baking quality: - Baking quality is a concept used by bakers to determine the potential of cereal flours in making breads , buns or cakes etc.**

6. **Biotic resistance: - It** is the ability of species in a community to limit the invasion of other species.

7. Livestock :- **Livestock** is defined as domestic animals raised with agriculture to produce labor food & other resources(like egg, meat , wool.)

8. SALINITY OF SOIL :- **It** is the **salt** content in the **soil. T**he process of increasing **salt** content in the soil is known as **salinization**.it can be caused by mineral weathering

9. WATER LOGGING :- **Waterlogging** occurs when there is too much **water** in a plant's root zone, which decreases the oxygen available to roots and harms the crop.

10. Drought :- prolonged shortage of water supply – surface or ground water ,

11. Frost: - a deposit of small white ice crystals formed on the ground or other surfaces when the temperature falls below freezing.

12. AGRONOMIC CHARACTERS
Plant **characters** related to crop production usually observed during plant growth; e.g., height,

maturity, tiller number, panicle size, yield and quality factors.

13. ORGANIC MATTER :- **Organic matter**, **organic material**, or natural **organic matter** refers to the large source of carbon-based **compounds** found within natural and engineered, terrestrial and aquatic environments

14. WAREHOUSES: - a large building where raw materials or manufactured goods may be stored prior to their distribution for sale.

15. CARCASS QUALITY: - The quality of dead body of an animal, especially one that has been slaughtered for food, with the head, limbs, and entrails removed.

16. Broiler: - Young chicken suitable for roasting, grilling, or barbecuing.

17. **LAYER POULTRY :-** .:- Farming **means** raising egg laying **poultry birds** for the purpose of commercial egg production

18. **PAUSTURAGE:-Pasturage** is defined as the vegetation of flowers and plants that are available near to the bee hives so that the **bees** can feed on the nectar to produce honey . To produce honey**, bees** need to collect nectar and pollen grains.

Collection of information

Early Breeding of Indian Major Carps under CIFABROOD Demonstration Trial

Indian Major Carps (IMC) are bred during June-August in farmers' ponds in Odisha. Mainly due to late maturation of broods and traditionally believed that survival of early bred spawn is very poor. Mr. Batakrishna Sahoo (Batababu) of Sarkana village, Balianta Block under Khordha district, Odisha is a progressive fish farmer in the region and had produced about 20 crores carp spawn during JuneAugust 2012 by traditional breeding management plan. Despite the fact that Batababu was producing seed for the last 20 years or so he had never thought of any possibility of early breeding of IMCs. Shri Sahoo was advised to test CIFABROODTM for early maturation of carps in his pond. After a brief and routine preparation with lime and mahua oil cake, two ponds (0.3 ha. each) located side by side were stocked on 2nd February, 2013 with the spent 250 numbers of catla, rohu and mrigal (bred in 2012) at a density of 1000 kg/ha. The feeding trial started on 18th February, 2013 and fishes were fed at 3% of body weight with CIFABROODTM in experimental pond while farm made feed was provided in the control pond. Shri Sahu noticed that within 30 days of rearing, catla broods appeared healthier with more luster and glazy shining in experimental pond than control counterpart. Almost all the males as well as the females of rohu and mrigal and a few catla showed symptoms of phenotypic maturation within 30 days of feeding. Fishes were matured by the 1st week of

April, 2013 (in 48 days), although no water exchange or other management practices could be possible.

The farmers were initially reluctant to take up any breeding program of the fishes in April due to hot summer (42-450C), acute shortage of water, no surety about spawn buyers, non readiness of the own nursery ponds and lack of confidence in the early bred spawn survival. The brood stock had to be shifted from experimental pond to another due to acute shortage of water. First induced breeding program was conducted on 22nd April, 2013 with mrigal broods using OVA-FH as inducing agent. Another breeding program was conducted on catla on 13th and 28th May, 2013 and rohu was bred on 31st May, 2013. There was 100% breeding response in all the three species tested with complete release of eggs (fecundity at par with normal breeding season) with fertilization rate and spawn recovery more than 90%. On contrary, not a single brood was found ready for breeding operation in the control pond. At the end of May,

2013, he bred 45 broods and produced 83 lakhs spawn and by 15th June, 2013 he could produce and sell 2 crores of quality spawn and majority of the broods are still left to be bred. He is now expecting to cross the production of 30 crores spawn (50% increase) by the end of August, 2013 from both CIFABROODTM fed fish as well as other brood stock fed with his own feed. The initial problem of selling the spawn in April notwithstanding, almost all the spawn were sold on the respective spawn lifting days and were purchased by the regular buyers. The maiden success was realized by the farmer in early breeding of IMCs during hot summer instilled lot of confidence in him. Further, co-operation from his fellow spawn buyers has motivated him for taking up and scale up early breeding program in February-March in the coming years. Early bred (April) spawn has already grown up to fingerling size by June 15th, 2013 which is fetching Rs.1 per piece to the nursery growers. According to the spawn buyers survival rate of fingerling is in between 40-70% as compared to 30% normally observed during spawning season in previous years. Fingerlings are ready for stocking for grow out culture from June middle to October allowing an extra period of near about 3 months for growth purpose. Shri Sahu feels that success in

early breeding with the help of CIFABROODTM will lead to a surge in the number of spawn buyers even in peak summer of coming years, and is most likely to have positive impact in freshwater aquaculture sector.

(Source: CIFA, Bhubaneswar, Odisha)