

ZOE457: ORNAMENTAL FISH PRODUCTION AND MANAGEMENT

Teaching Hours 10 /unit

COURSE OUTCOME

1. Course focuses on the importance of ornamental fish farming in relation with entrepreneurship development.
2. Enable to setup aquarium
3. Enable to manage the home as well as commercial aquariums
4. Learn to handle different aquarium equipment's and decoration
5. Learn decorations of aquarium
6. Study breeding of Aquarium Fishes.
7. Students' knowledge about various techniques of ornamental fish breeding, rearing and its marketing to make them self-sustainable after completing course.

UNIT-I

Culture of ornamental fishes: Introduction, definition, classification, varieties, relevance
Breeding: Brood stock development, Breeding, larval rearing, induced breeding, environmental manipulation, water quality parameters, feeding, harvesting and conditioning. Commercially important- indigenous, exotic (egg –layers and livebearers) ornamental fishes. Breeding of live bearers and egg layers. Types of breeding, selective breeding and cross-breeding and hormonal induction and sex-reversal.

UNIT-II

Fabrication and setting up of aquarium- Principles of setting up and maintenance of aquaria different types fish tanks, requirements, construction, and fabrication of glass tanks, Steps of aquarium fabrication, Aquarium accessories for small and large-scale units. Aeration and filtration. Latest trends in aquarium tanks. Uses of aquarium plants, Use of test kits for regular monitoring water quality. Common diseases and parasites of freshwater and marine ornamental fish. Fish diseases and their prophylactic measures.

UNIT-III

Management practices in ornamental fish farm- Pond fish keeping, siting a pond, size of ponds, equipments, stocking of pond with plants, Pond construction fish production facilities, Permission from the competent authority, resources of water, water quality management, selection of suitable species of ornamental fishes. Construction of cement cisterns for indoor-facility, FRPTanks, and water re-circulation facility, water filtration systems, eco-friendly approach to manage the effluents. Quarantine policy and facility.

UNIT-IV

Feeds and feed management – Feeding and nutrition of ornamental fishes. Nutritional requirements of aquarium fish. Larval feeding. Live feed culture. Artemia culture, infusoria, brachionus culture, development of live feed culture lab. Formulated feeds. Preparation of aquarium fish food. Colour enhancement techniques. Feeding frequency. Feeding fry, feeding of young ones, feeding of adults. Water quality management.

UNIT-V

Ornamental fish transportation and Marketing- Fish packing systems, steps to be taken while transporting, condition of fish for packing, ornamental fish trade-supply - demand situation in India. Quality control, prices, demand. Global trade of ornamental fishes, contribution of culture and capture; marketing strategies; Green certification. Govt policies and subsidies.

REFERENCES

1. Anna Mercy, T V and Gopalakrishnan, A and Kapoor, D and Lakra, W.S (2007): Ornamental Fishes of the Western Ghats of India. National Bureau of Fish Genetic Resources, Kochi.
2. Arumugam N., Jayashree C. S., K.V 2015: Home Aquarium and Ornamental Fish Culture, Saras publication.
3. Dholakia A. D. 2016: Ornamental Fish Culture and Aquarium Management, Daya Publishing House
4. Edward J. Noga, 2010 : 2nd Edition, Iowa State University Press
5. Felix S., Anna Mercy T. V., Saroj Kumar Swain 2013: Ornamental Aquaculture: Technology and Trade in India, Publisher: Daya Publishing House.
6. Heiko Bleher, 2018 Indian Ornamental Fishes Volume 1, Aqua press Publishers.
7. ICAR, 2019: Fresh water ornamental fish breeding and aquascaping techniques (A training manual) CIARI, India.
8. Lewbart Gregory A, 2018: Ornamental Fish, Publisher: Manson Publishing Ltd
9. Smith S.A, 2019: Fish diseases and Medicine: 1st Edition, CRC press, Taylor and Francis publishers.
10. Wester C.D. 2015: Nutrient requirements and feeding of fishes for aquaculture publishers, CIBI, India.

***Visiting ornamental fish farming Unit and aquarium trading industry is compulsory and submit to the report.**