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CHAPTER-24

CURRENT STATUS AND ADVANCES IN FISH CELL LINES DEVELOPMENT IN INDIA.

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Introduction:

Fish cell lines are more advantageous over mammalian cell line in many aspects, and hence fish cell line has been widely used in *in vitro* research. In recent years, the number of fish cell lines has increased greatly and currently represents a wide variety of species and tissue

types. Tissue culture was started as a method for studying the behavior of animal cells at the beginning of 1907 and it was demonstrated frog embryo nerve outgrowth *in vitro*. Disaggregation of explanted cells and subsequent culturing of dispersed cells was first demonstrated by Rous (Scherer, 1953). Alexis Carrel demonstrated the effectiveness of strict aseptic control in enabling the prolonged subculture of cells and used chick embryo extracts mixed with blood plasma to support cell growth. Carrel flasks were designed by Carrel and which promoted aseptic conditions and paved the way for modern routine cell culture flasks. The discovery of antibiotics by Fleming in 1945 was another major milestone that facilitated prolonged cell culture by reducing contamination issues. L929 was the first cloned cell strain. Jonas Salk succeeded in developing polio vaccine using polio virus cultured in HeLa cells, the first virus to be grown without using any solid animal eggs or tissue.

National Status:

The development of fish cell lines has got momentum from previous efforts at Central Institute of Freshwater Aquaculture, CIFA, Bhubaneswar in the early eighties and others attempt to develop cell line from *Cirrhinus mrigala* (Sathet *et al.,* 1997). Lakra *et al.,* (2006), developed two new cell lines, LCE (epithelioid) and LCF (fibroblastic), from fry of Asian seabass, *Lates calcarifer*, in Leibovitz L-15 medium supplemented with 15% FBS. The cells were