

## GROWTH ASSESSMENT OF *SPIRULINA PLATENSIS* UNDER PHYSIOLOGICAL

JYOTI SINGH KUSHWAH & KULDEEP DWIVEDI

School of Life Sciences, ITM University, Gwalior, Madhya Pradesh, India

### ABSTRACT

*Spirulina* is a spiral, multicellular, filamentous non-heterocystus, non-nitrogen fixing photosynthetic cyanobacteria, *Arthrospira platensis*, is a whole product of biological origin. *Spirulina* requires an abundant supply of nutrients and tolerant to great variations in salinity and pH. The present study examines the possibility of increasing the growth under stress conditions including different concentration of salinity and pH on *S. platensis*. Different concentrations of NaCl *S. platensis* untreated, 20, 40, 60, 80, and 100 mM grown in for 20 days. *Spirulina platensis* cells, growing photoperiod of 12 hours light/dark provided by fluorescent lamps at a light intensity of  $140 \mu\text{mol photons m}^{-2}\text{s}^{-1}$  in optimal Zarrouk's medium under controlled conditions.

It was found that biomass stimulated at lower concentration 20 mM (380mg DW/250 ml culture), 40 mM (319mg DW/250ml culture), 60mM (261mg DW/250ml culture) but reduce at 80mM (197mgDW/250ml culture) and 100mM (161mg DW/250ml culture) at higher concentration of NaCl. As pH is important for the growth of *Spirulina* for biomass, Different pH levels viz. untreated, 6, 7, 8, 9, 10, the effect of pH changes on the productivity of the blue green alga, effect of pH on growth *S. platensis* would be studied for a period of 20 days. The algal dry weight (DW) was greatly enhanced at pH 9.0 (380mg DW/250 ml culture), pH 8.0 (245mg DW/250 ml culture) The decreased algal production at the low and high pH 6.0 (50mg DW/250 ml culture), pH 10.0 (125mg DW/250 ml culture), algal cells began to collapse and likely resulted in reduction or failure of many cellular pro-cesses at high

**KEYWORDS:** Spirulina, Growth Curve, Biomass, Salinity, pH