SUMMARY

India is facing an acute problem of malnutrition specially the deficiency of protein, *Spirulina* is being extensively used for the production of wide range protein, antioxidants, PUFA vitamins, minerals etc.

The present research work “Monthly variations in cellular metabolites of *Spirulina maxima* Geitler cultivated under semi-arid climatic condition of Agra” was carried out for assessing the optimum conditions for maximum production of *Spirulina maxima*. The physical conditions considered were temperature, light intensity, pH.

The C.F.T.R.I. medium (Central Food Technological Research Institute) proposed by Venkatraman (1983) was used for the cultivation purpose. Agitation is essential for healthy growth of *Spirulina maxima* because it helps not only in fragmentation but also provide turbulence for uniform distribution of nutrients. *Spirulina* reproduce only by means of fragmentation. After 30 days when the *Spirulina* culture were on the peak of growth, harvested then dried *Spirulina* powder was subjected to biochemical analysis.

Maximum production of chl$_a$ was recorded in the month of May i.e 1.37% and minimum chl$_a$ was recorded in the month of July i.e.1.11%. Maximum production of protein i.e. 59% was recorded in the month of May and minimum production of protein i.e. 42% was recorded in the month of July. Maximum production of carotenoids i.e. 0.576% was recorded in the month of May and minimum production i.e. 0.219% was recorded in the month of July.

. In the present investigation pH=10.17 temperature=32.8℃ and light intensity=2897 Lux was found suitable for the growth of the *Spirulina maxima*. 