Summary

Biomass production and biochemical composition of *C. kesileri* and *S. obliquus* were studied under different nutritional nitrogen regimes (different nutritional media, nitrogen concentration, various nitrogen sources, and nitrogen starvation). The study was focused on protein and carbohydrate fractions and amino acid content under different nitrogen sources.

The results of this investigation revealed that:

1- Different nutritional media:

Bold medium was the most effective nutritional medium used to grow both *C. kessleri* and *S. obliquus* algae. On the other hand, Chu.1 0 medium produced the highest carbohydrate content as compared with Bold and Kuhl media.

2- Different nitrate concentrations:.

Generally, on studying the effect of different nitrate concentrations on growth and biochemical composition of both C. *kessleri* and *S. obliquus.* Nitrogen concentration (0.04 %) in Bold medium was the most effective concentration used to grow *C. kessleri* and *S. obliquus.*

3.1 Different nitrogen sources:.

Nitrate was the most effective nitrogen source for the growth of *Chlorella kessleri* and *Scenedesmus obliquus* due to its stimulatory effect on

protein, total lipids and DNA. **In** the other hand, It was revealed that, NH_4Cl containing medium produced he highest carbohydrate content as compared with other nitrogen sources.

Generally, $NaNO_3$ induce polysaccharide production and consequently total sugars in both *S. obliqu s* and C. *kessleri.* Urea stimulated D.R. V and T.R.V in C. *kessleri.*

Ammonium chloride ind ced water soluble fraction (Albumin), alcohol soluble fraction (Protamin) an' insoluble fraction in both C. *kessleri* and *S. obliquus.* Urea induced water 'oluble fraction (Albumin), salt soluble protein (Globulin) and insoluble protei in both *S. obliquus* and C. *kessleri.* However, higher value of alkali soluble fraction (Glutelin) was recorded with $NaNO_3$ when used as a sole nitrogen so rce for *C. kessleri* and *S. obliquus* growth.

3.2 E *ect o di erent nitro en sources on amino acid contents:*

It was revealed that, eucine was the major essential amino acid detected in *C. kessleri* grow with the different nitrogen sources, while phenylalanine was the mino essential amino acid. It was reported that ammonium chloride increased rginine amino acid as compared with the other detected amino acids with so' ium nitrate and urea, respectively. Methionine was not detected with ami onium chloride as a sole nitrogen source. However, it was recorded in ca .e of sodium nitrate and urea as a sole nitrogen source.

Glutamic acid, aspartic acid, and proline were the major non-essential amino acids detected from *C. kessleri* grown with the different nitrogen sources, while tyrosine was the minor non-essential amino acid. On contrary to the essential amino acids methionine and cystine were detected when using ammonium chloride as nitrogen source. It was evident that sodium nitrate induced increase in proline as compared with the other detected non-essential amino acids with sodium nitrate, urea, and ammonium chloride, respectively

4-Nitrogen starvation on growth:

High values of growth parameters and biochemical composition of *C. kessleri* and *S. obliquus* were determined in nitrogen sufficient medium. However, lipid and carbohydrate contents of both *C. kessleri* and *S. obliquus* recorded their high values in nitrogen starved cultures.