

## البحث الرابع

### The Effects of Sewage Water on Ultrastructure of *Chlorella vulgaris* and *Scenedesmus quadricauda*

بحث مشترك وغير مستمد من رسائل علمية

المجلة المنشور بها البحث

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#### ABSTRACT

The present work was carried out to study the effect of heavy metals from Collection station Mo. Greater Cairo Egypt in *Chlorella vulgaris* and *Scenedesmus quadricauda* on amino acids content and ultrastructure. Results obtained revealed that the content of amino acids was increased gradually at all different concentrations of heavy metals (25%, 50%, 75% and 100%) compared to control. Cellular damage was studied by transmission electron microscope. It was observed that *Chlorella vulgaris* and *Scenedesmus quadricauda* when exposed to different concentrations of heavy metals revealed drastic changes in the overall ultrastructure such as the chloroplast separated far from the wall, the lamellae of the chloroplast appeared to be separated from each other, the pyrenoid disappeared and electro dense granular bodies identified as polyphosphate granules, appeared apparently in the cells. Damage to the algae ultrastructure was more severe with elevated heavy metal concentrations. These responses of *Chlorella vulgaris* and *Scenedesmus quadricauda* indicated their tolerance of heavy metal stress.