

## ABSTRACT

Mixed fresh water algae e.g. *Clostridium* sp., *Oscillatoria* sp., *Cosmarium* sp., *Pediastrum* sp., *Spirogyra* sp. *Stauroneis* sp. and *Chroococcus* sp. have been collected from Botanical Garden GC University Lahore. Mixed fresh water algae were taxonomically identified. All collected algal species were already known. Mixed freshwater algae were extracted and lipids were investigated by GC-MS as well as their bioactivities were obtained. Methanol, chloroform and *n*-hexane extract of investigated algae were studying antibacterial activity against *E.coli*, *S. aureus* and *B. subtilis*. *E.coli* shown to be most sensitive bacterium and displayed a positive activity against the mixed algal chloroform extract. Among fungi *Trichoderma* sp., *A. niger* and *Pencillium* sp were tested. *Trichoderma* sp. shown maximum sensitivity against chloroform extract. A variety of fatty acids were detective in extracts of methanol and *n*-hexane extract of mixed algal species through GC-MS technique. Total thirty nine different lipids were eluted where eighteen fatty acids were found from Methanol extract and 21 fatty acids were from *n*-hexane extract. Molecular wt. 226 Hexadecane and 254 Octadecane (monounsaturated) fatty acids have been investigated in both methanol and *n*-hexane extracts. Saturated fatty acids with molecular wt. 242, 252 and 280 were showing their presence in Methanol and *n*-hexane extracts.