

ABSTRACT

The present work was to determine the possible saturated and unsaturated fatty acids in two filamentous green algae, in which *Cladophora glomerata* (L.) Kützing collected from Botanic Garden, G.C. University Lahore and *Ulothrix subconstricta* G.S. West collected from Scholars Garden of G.C. University Lahore. The extracts of these filamentous algae were obtained by maceration in methanol followed by vacuum rotary evaporator in the Phycology Lab. of GCU Lahore. Then different possible fractions of the fatty acid were obtained with the help of column chromatography by running the column first with *n*-hexane and at the end with different proportions of *n*-hexane: chloroform. For proper identification these fractions were converted into their esters. All the saturated and unsaturated fatty acids were described by of TLC and GC-MS.

There was lowest Rel. %age of (C19:0) stearic acid (2.4%) and the highest Rel. %age was recorded in case of (C18:0) methyl isoheptadecanoate (31.27%) among the saturated FAs, lowest Rel. %age of (C19:1) 7-octadecenoic acid (2.2%) and the highest Rel. %age was recorded for (C19:1) methyl 9-octadecenoate (50.53%) among the monounsaturated FAs, lowest Rel. %age of (C19:2) 10, 13-octadecadienoic acid, (7.73%) and the highest Rel. %age was shown by (C19:2) 9, 12-octadecadienoic acid (61.43%) among the diunsaturated FAs, lowest Rel. %age of (C21:3) 8, 11, 14-eicosatrienoic acid (5.6%) and the highest Rel. %age was shown by (C21:3) methyl (11E, 14E, 17E)-11, 14, 17-icosatrienoate (19.26%) among the triunsaturated FAs, lowest Rel. %age of (C23:6) 4, 7, 10, 13, 16, 19-docosahexaenoate (4.89%) and the highest Rel. %age was recorded in case of (C20:4) arachidonic acid (17.26%) among the polyunsaturated FAs, of *Cladophora glomerata* (L.) Kützing.

There were only saturated and monounsaturated fatty acids in *Ulothrix subconstricta* G.S. West. Among the saturated fatty acids (C17:0) methyl palmitoleate showed the lowest Rel. %age (1.2%) while the highest Rel. %age was displayed by (C17:0) palmitic acid (9.96%). Among the monounsaturated fatty acid the lowest Rel. %age was shown by (C20:1) methyl (10E)-10nonadecanoate and methyl (7E)-7-hexadecanoate (1.2%) while the highest Rel. %age was displayed by (C17:1) methyl cis-6-octadecanoate (44.33%) in *Ulothrix subconstricta* G.S. West.