

ABSTRACT

Marine macroalgae or seaweeds are plants adapted to the marine environment of coastal areas. Many of them have not been explored for their taxonomy based on morphometry and biochemical variations. Present study was conducted to delineate the species of genus *Dictyota* based on morphometric characters and spatial variation in bio-chemical composition. In the present study, 6 species belonging to Genus *Dictyota* were recorded, which included one from each site within collected specimens. From the evaluation of morphometry *Dictyota bartayresiana* was longest while lowest height was recorded in *Dictyota ceylanica*, *Dictyota volubilis*. No variation in branchlets were found in all the species. Among the types of rhizoid, thin type was found in *D. volubilis* and *D. bartayresiana*. *D. ceylanica* has highly branched and tough rhizoid and *D. dichotoma* and *D. linearis* has highly branched rhizoids. *D. bartayresiana* (Krusadai Island) showed pillar type rhizoid. Maximum width 34.37mm in *D. linearis* and lowest width recorded 5.3mm in *D. ceylanica*. Crude protein was >14 % of dry weight. Ash content of seaweed is generally much higher than those of terrestrial vegetables. Fatty acid profile reveals these seaweeds can be a good source of essential fatty acids for humans and as feed for animals. Saturated fatty acids contents were major portion of the *D. bartayresiana* and it was 74.75 % of total fatty acids. Palmitic acid (16:0) is the dominant saturated fatty acid. PUFA was highest in *D. ceylanica* and Linoleic acid - C18:1 (n-1) was the dominant. Five major and four trace elements were identified. Potassium was found in maximum amount in *D. linearis*. Calcium was the other major element that found maximum amount in all six species (*D. maxima* - 4.629%). Sodium was highly present in *D. linearis* (4.96%). Other trace elements Co, Cu, Mn and Zn, were present in all specimens, except iodine. Phenol was also the major component among all the species. Thus *Dictyota* can be considered as good source of essential fatty acids for humans and as feed for animals.