



Bioefficacy of marine seaweed *Sargassum wightii* Greville ex J. Agardh extracts on the growth of *Bombyx mori* (L.) larvae

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Marine algae are renewable living resources that are a rich source of structurally important novel and biologically active secondary metabolites. These seaweeds are economically valuable resources, used as food, fodder, fertilizer, and medicine and thus useful to mankind in many ways. In the present study, the brown alga, *Sargassum wightii* Greville ex J. Agardh (SW) has been analyzed for secondary metabolites using three solvent extracts (acetone, ethyl acetate and water), and were tested for growth efficacy at five different concentrations (100, 200, 300, 400 and 500 ppm) on the mulberry silkworm *Bombyx mori* (L.) third instar larvae by leaf dip method. Extraction rate of *S. wightii* water extract was 1.3 g (F= 1399.29; df=3, 36; p=0.005); ethyl acetate extract was 0.7 g (F= 30.76; df=3, 36; p=0.005); and acetone extract was 0.4 g (F= 1399.29; df=3, 36; p=0.005). Results have shown the presence of steroids, such as tannins, phlobatannins and saponins; flavonoids, phenolic compounds and xanthoproteins in these extracts obtained by cold percolation method. The seaweed extract enhanced the growth of silkworm larvae *B. mori* with increased concentrations. The highest concentration (500 ppm) of water extract showed more growth rate than the control. The 100, 200, 300 and 400 ppm of water extract showed maximum growth comparable to the control at 96 h of our study period. This finding envisages that secondary metabolites could be extracted with the cold percolation method and can be used for biological and agricultural lead.

Keywords: Brown algae, Feed supplement, Mulberry silk moth, Silkworm