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Allelopathic activity studies of Sri Lankan seaweed extracts

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Algae are known to produce an incredible diversity of secondary metabolites with a variety of biological activities. The focus of the present study is on seed germination inhibitory activity of seaweed extracts, with the hope of discovering new eco-friendly natural herbicides. Lettuce seed germination bioassay which is widely used in the detection of allelochemicals, throughout the world was carried out to examine 16 crude seaweed extracts for seed germination inhibitory activity. In this study, the normal lettuce seed germination assay was slightly modified to suit our needs. Out of 16 extracts tested, *Ulva fasciata, Caulerpa racemosa, Caulerpa sertularioides, Amphiroa anceps, Garcilaria hikkaduwensis, Jania* spp. and *Cladophora* spp have shown statistically significant seed germination inhibitory activities, which might be due to the allelochemicals present in the seaweeds. Even though other extracts have not inhibited the lettuce seed germination at a significant level, reduced root lengths observed for all the extracts, except the methanol extract of *Caulerpa racemosa*, might increase the chance of desiccation in seedlings before establishment and delay growth. Interestingly, in the case of the methanol extract of *Caulerpa racemosa*, percentage seed germination enhancement and increased root length compared to the control (distilled water) was observed. Further studies are in progress with the hope of isolating natural products that are responsible for the above allelopathic effect of the seaweed extracts.

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