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**Composition of Photosynthetic Pigments in A Red Alga  
*Kappaphycus alvarezii* Cultivated in Different Depths**

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**Abstract**

The red alga *Kappaphycus alvarezii* (Doty) Doty ex P.C. Silva has been introduced and mass cultivated in Indonesia as a seaweed commodity. This species is specifically grown in shallow and clear seawater, although there are several reports concerning the cultivation in deep seawater. It is interesting to know compositional changes of chlorophylls and carotenoids when *K. alvarezii* is grown at different depths. In this investigation, therefore *K. alvarezii* green and brown variants were cultivated at about 0.2 m (normal green condition), 1 m, and 2 m depths and successfully obtained different ratios of chlorophyll and carotenoid composition at different depths. Quantitative analyses of chlorophylls to carotenoids ratio were carried out using data of chromatogram peak area. This investigation subsequently evaluated the photo and thermo-stability of the pigment extracts to examine the effects of pigment composition on the degradation rate of the pigments. This investigation was aimed to provide information regarding compositional change of the pigments by acclimation in terms of cultivation depths and pigment stability *in vitro* at condition of natural pigment composition in this alga.

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**Keyword:** Chlorophyll carotenoid ratio, *Kappaphycus alvarezii*, photo-stability, pigment acclimation, pigment composition, thermo-stability.

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Composition of Photosynthetic  
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