EFFECT OF NUTRIENT MEDIUM AND LIGHT ON THE GROWTH OF YOUNG PLANLETS OF COTTONII SEAWEED KAPPAPHYCUS- ALVAREZII, DOTY PROPAGATED BY TISSUE CULTURE

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Summary

Breeding propagule is the last and critical step in the success of the Kappaphycus alvarezii procedure by tissue culture. Nutritional culture medium and light intensity are the two main factors that affect the growth of seaweed. This study presents how to select appropriate culture conditions for the growth of micropropagule contoni seaweed Kappaphycus alvarezii based on the test of different culture medium and light intensity. The results showed that f/2 medium is not effective for micropropagule seaweed culture. In conclusion, using PES medium and NH₄Cl-KH₂PO₄ medium in K. alvarezii culture are the better selection. The daily growth rate and the average increase of number and length of shoots cultured in PES medium were highest (5%, 6.4 shoots per month and 14.4 mm per month respectively). Hower, micropropagule seaweed grown in PES medium and NH₄Cl-KH₂PO₄ did not show significant differences (p > 0.05) in the daily growth rate. The results also showed that the growth of micropropagule seaweed at three photon flux densities (10, 35 and 70 µmol photon.m⁻².s⁻¹) had a significant difference (p < 0.05). In particular, the best growth of propagule was 35 µmol photon.m⁻².s⁻¹, at a rate of 4.9% per day, the increase number of shoots averaged 3.8 per month and the increase length of shoots averaged 12 mm per month. This study indicated that micropropagule seaweed was suitable to PES medium or NH₄Cl-KH₂PO₄ medium and 35 µmol photon.m⁻².s⁻¹ condition.

Keywords: Growth, Kappaphycus alvarezii, light intensity, nutrient medium, tissue culture.