

## PRODUCTION OF CARRAGEENAN BY DIFFERENT STRAINS OF *Kappaphycus alvarezii* CULTIVATED IN SERANG, INDONESIA

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### Abstract

*Kappaphycus alvarezii* is one of the main seaweeds cultivated in Indonesia. Its use as a raw material for the kappa-carrageenan industry has increased its cultivation activities. However, standard cultivation protocol for *Kappaphycus alvarezii* has yet to be well-documented, particularly on strain selection for kappa-carrageenan production. There are various strains of *Kappaphycus alvarezii* grown in Indonesia, specifically in Serang, Banten such as green, red, and yellowish green strains. In this study, growth rate, carrageenan yield, and gel strength from different strains of *Kappaphycus alvarezii* were investigated. It was observed that the specific growth rate of green type (4.14% /day) differed significantly from the other two types (red; 3.41% /day and yellowish green; 3.47% /day). The red type had the highest yield of carrageenan (45.16%) followed by yellowish green (36.66%) and green strain (33.67%). Gel strength was not significantly affected by the strain variations where the observed values for yellowish green, green, and red strain were 344.46, 316.91 and 313.10 g/cm(2), respectively. Green *Kappaphycus alvarezii* had the highest biomass (0.27 g/cm/d) and carrageenan productivity (0.012 g/cm/d). It can be concluded that the green strain of *Kappaphycus alvarezii* is the most suitable for cultivation in Serang, particularly for the kappa-carrageenan industry.

### Keywords

**Author Keywords:** *Kappaphycus alvarezii*; carrageenan yield; gel strength; productivity; specific growth rate  
**KeyWords Plus:** RHODOPHYTA; SOLIERIACEAE; GROWTH; LONGLINE

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