A Comparative study of growth rates and yield of the seaweed, Kappaphycus alvarezii (Doty), using variable seedling densities and farming methods in south coast, Kenya

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The study aimed to generate information that will contribute to development of a highly income generating species of seaweed as an alternative to the lowly valued species of seaweed to uplift the economic status of small-scale farmers and reduce fishing pressure on overexploited fisheries since most communities in the south coast mostly depend on the fisheries resources. Five different initial seedling densities of 50g, 75g, 100g, 125g and 150g were tried for growth rate and yield comparisons. Fifteen rafts and fifteen plots of 5x 2.5 were used at the two study sites of Gazi and Kibuyuni. Sampling was done fortnightly during southeast monsoon and northeast monsoon. Hydrographic parameters and nutrients were monitored monthly and analyzed in the laboratory. Factorial Anova and Canonical correspondence analysis was used to test for growth rate and yield of Kappaphycus alvarezii. During SEM at Gazi the mean growth rate varied from 1.66 ±0.08 to 2.48 ±0.03 for the off bottom plots, and 1.07 ±0.84 to 2.95 ±0.15 for the rafts. At Kibuyuni during SEM, the mean growth rate varied from 1.31 ±0.11 to 2.42 ±0.04 for the off bottom plots and 0.69 ±0.05 to 2.87 ±0.15 for the rafts. At Gazi bay during the NEM, the mean growth rate varied from 1.26 ±0.05 to 2.74 ±0.13 for the off bottom plots and 0.72 ± 0.26 to 2.97 ±0.003 for the rafts. At Kibuyuni during NEM, the mean growth rate varied from 0.59 ±0.03 to 2.54 ±0.02 for the off bottom plots and 0.34 ±0.001 to 2.49 ±0.10 for the rafts.