ABSTRACT


Gracilaria verrucosa is one kind of seaweed which produces agar and has important economic value especially for food and pharmaceutical industries. Characteristics of agar are affected by some factors such as culture method, seed weight, and planting period of seaweed, which is specific locally in correlation to environmental parameters. Seaweed cultivation was carried out in brackishwater pond (temperature 25-29°C, salinity 25-28 ppt, deeply 60 cm, pH 6-7, nitrate 0.120-0.170 mg/l, phosphate 0.015-0.022 mg/l) at Selok Village, District of Adipala, Cilacap Regency, Central Java. The experiment was carried out to: 1) determine the culture method, seed weight and planting period that provides the best growth rate of G. verrucosa; 2) to measure the physico-chemical characteristics of agar from G. verrucosa at different culture method, seed weight and planting period.

This study was begin with the cultivation of G. verrucosa used the culture method floating raft and sinking raft, seed weight 50, 75 and 100 g, and planting period 45, 60, 75 and 90 day. G. verrucosa dried cultivated and then checked the moisture content, ash and acid insoluble ash content. Research continued with the extraction of G. verrucosa to produce agar which is then carried out to characteristics of yield, moisture content, ash content, gel strength, and viscosity. The best agar of each method for culture method and then do characteristics of which 3,6-anhydro-L-galactosa content, sulfat content, heavy metal, geling point, melting point, and whiteness. Variety of observation data were analyzed and followed by Duncan multiple range test, with the program spss 13 on level 95%.

Environmental conditions at research area are suitable for cultivation of G. verrucosa. Seed weight and planting period had influence on growth rate of G. verrucosa, which floating method gave higher growth rate than sinking method. The quality of agar which cultivated using floating method was better than sinking method. Floating method with 50 g of seed weight and harvesting time at 60 days gave the best quality of agar.

Keywords: Gracilaria verrucosa, metode penanaman, bobot bibit, umur panen, agar