Sea weed of Eucheuma spinosum represent one of the potential exporting commodity to be developed. From other side request of high market, Indonesia have enough resource both for experiencing of and also for conducting. Unhappily sea weed still exported many in the form of raw material that is in the form of dry sea weed while grass go out to sea weed Eucheuma Spinosum can be processed to become carrageenan owning high economic value. Carageenan is compound of hidrocolloid, representing compound of polisacarida enchain length which in extraction of sea weed type of carringoenofit, which in marketing represent flour with yellowish colour and used many by food industry, drug, cosmetic, textile, paint, tooth paste and other industry. Carageenan of important for balancer, thickener, gelling agent, emulsifier. Intention of this research is to know there interaction soaking type and separation method to nature of chemical and physical of carringeenan, to know influence of soaking type, and also to know influence of different separation method to nature of chemical and physical of carringenan.

This research use Random Device of Group (RAK) factorially with two factor and each repeated 3 times. Factor of I is soaking type (soaking with freshwater, soaking with Na-bisulfit) and factor of II is separation method (isopropyl alcohol 90 % with chalk, isopropyl alcohol 90 % without chalk, coagulation 24 hour with chalk, coagulation 24 hour without chalk).

Result of this research show the existence of interaction between separation method and soaking to nature of chemical and physical of carringeenan, among others strength of gel, moisture content, brightness level, sulphate content, viscosity, CaCO3 content. Best treatment yielded by treatment of freshwater soaking with isopropyl alcohol 90 % with chalk (NOE1), 9,86% yield, CaCO3 content of 8,79%, brightness level of 73,20, sulphate content of 16,09%, ash content of 19,79%, moisture content of 6,63%, viscosity of 58,3cPas, and strength of gel 20,51 mm/g/ second.