Suthasinee Manoonphatyaporn 2015: Seasonal Variation of Chemical Composition and Antioxidant Activities in Marine Brown Algae Genus *Sargassum* from Nang Rong Beach, Chon Buri Province. Master of Science (Fisheries Science), Major Field: Fisheries Science, Department of Fishery Biology. Thesis Advisor: Miss Jantana Praiboon, Ph.D. 151 pages.

Chemical composition, relationship between chemincal composition and environmental factors, and antioxidant activities of *S. aquifolium* (Tuner) C. Agardh and *S. oligocystum* Montagne from Nang Rong Beach, Chon Buri Province were studied. Samples were harvested three times representing three seasons. The results showed that *S. oligocystum* has more nutritional values (i.e. protein, amino acid, carbohydrate, fiber, minerals, and vitamin C) than *S. aquifolium*. Furthermore, nutritional values in both species were the highest during pre-monsoon (May). Fiber content of *S. aquifolium* had negative correlations with depth, pH, and turbidity. In addition, lipid content of *S. oligocystum* showed negative correlations with depth and turbidity, but had positive correlation with pH.

Antioxidant activities were evaluated by using the DPPH radical scavenging, reducing power and hydroxyl radical scavenging methods. The crude extract of *S. oligocystum* showed better antioxidant activities than *S. aquifolium* in all testing methods. The crude extracts of both species were partitioned into four fractions: petroleum ether (PE), etyl acetate (EA), n-butanol (BU), and aqueous residue (AQ). EA fraction of *S. aquifolium* and PE fraction of *S. oligocystum* showed higher $DPPH^{\bullet}$ and $OH^{\bullet}$ radical scavenging activities than other fractions and positive controls (BHT and L-ascorbic acid), while PE fraction of *S. aquifolium* and EA fraction of *S. oligocystum* had higher reducing power abilities than other fractions. These results indicated that the active compounds with high antioxidant activities in these seaweeds were low and medium polar components.

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