Determination of the ideal season to collect Sargassum filipendula in northern Rio Grande do Norte to find the highest level of carbohydrate

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INTRODUCTION: <i> Sargassum filipendula <i>, a genus of brown macroalgae, is among the richest sources of novel bioactive compounds, like other marine algae. The nutrient compositions of seaweeds are different depending on species, habitats, environmental conditions and drying processes. The motive that we made this work were these information and knowing little research has focused on northern Rio Grande do Norte seaweeds as a source of sulfated polysaccharides with potential biological activities. **OBJECTIVES:** The aim of this work were to evaluate the best time of drying of <i> Sargassum filipendula <i> and the ideal season to collect to find the highest level of carbohydrate. **MATERIAL AND METHODS:** Seaweed was collected from the Rio do Fogo bay in northern Rio Grande do Norte on summer, spring, autumn and winter. Protein, ash, lipid, carbohydrate and moisture contents of seaweeds were determined as recommended by the Institute AOAC (2011). The mean values of each biochemical component were subjected to one-way ANOVA. **RESULTS AND DISCUSSION:** The time of drying for <i> Sargassum filipendula <i> was 150 minutes, at this time we found that autumn and spring showed the best results for lipid concentration (5,47 % and 5,76 %). We found the highest level of protein on winter and spring (10,49 % and 13,60 %). The ash levels stay unchanged on the seasons. We obtained 60,62 % for winter, 53,33 % for spring, 64,14 % for autumn, but the best concentration of carbohydrate (72,86 %) was found on summer. We monitored the concentration of biological compounds of <i> Sargassum filipendula <i> for two years. We observed that concentration of biological compounds of this macroalgae is so unfixed during seasons, but stay the same on the region in a determined season. **CONCLUSION:** The possibility to find sulfated polysaccharides that have exhibited strong antioxidant, anti-inflammatory and antibacterial from <i> Sargassum filipendula <i> is bigger on summer.

Keywords: seaweed, carbohydrate, time of drying
Sponsorship: UFERSA and CNPq