

PROCUREMENT OF BIOMASS *Scenedesmus quadricauda* USING COAGULANTS DIFFERENT

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Coagulation is defined as the destabilization of loads of particulate matter through the addition of coagulant, allowing the small particle suspensions are combined to form larger aggregates, flakes, which are more easily removed in solid-liquid separation. *Scenedesmus quadricauda* has high nutritional quality and digestible carbohydrates causing their biomass is inserted into encapsulated for human consumption. It was the objective of this work, promote flocculation and separation of the biomass of *S. quadricauda* using different coagulants, to establish which of these agents promotes better flocculation in order to enhance the biotechnological use of microalgae.

The experiment was developed in Claeff Company, which specializes in production of microalgae (Figure 1), in partnership with the Laboratory for Production of Live Food, Department of Fisheries and Aquaculture of the Federal Rural University of Pernambuco. Was performed three treatments were evaluated in rejoinder to the action in the cultures of *S. quadricauda* of coagulants: polymer luminum (T1), ferric chloride (T2) and sodium hydroxide (T3). The experimental units were placed in plastic bottle with a volume of 1000 mL, the density of the culture used was 360×10^4 cél. mL⁻¹, temperature 26.5 ° C, pH 7.5. For each treatment was added to 3 mg L⁻¹ solution of coagulants, all with the same molarity (0.1 M), shaking up the units. The statistical analysis of variance was used followed by the Tukey test (P <0.05).

The temperature was not altered significantly in all treatments. The pH values achieved in T1 and T2 did not differ significantly, whereas the T3 differed from the others. Only on T3 was observed rise in pH, reaching an average value of 8.83. After occur flocculation and consequently the settling of the cells was counted the residual of the treatments, which showed no significant difference between T1 and T2 (Table 1).

It could be concluded that the best coagulants for *S. quadricauda*, using a solution of 3 mg.L⁻¹ were the polymer aluminum and ferric chloride (Fig 2). However, further studies should be conducted to evaluate the effect of coagulants acting in a longer time in cultures

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Figure 1 – Claeff Company

	pH end	Wet biomass	Dry biomass
T1	6,83 ^a	2,39	0,96
T2	6,3 ^a	1,01	0,26
T3	8,8 ^b	NF	NF

Table 1. Different letters show statistical difference
 NF not flocculate



Figure 2 . Separation of microalgae from the culture medium