Investigating Agar Extraction as a Method of Gracilaria salicornia Eradication

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The highly invasive species of algae, Gracilaria salicornia, has harmful detriments to Hawaii's vulnerable reef life. As a red algae, Gracilaria salicornia has the potential have agar extracted from it. The use of Gracilaria salicornia as a means of producing agar will provide organizations with a method of eradication as well as economic incentive for the eradication of this invasive species. This study was conducted to determine the ability of Gracilaria salicornia from the southern coast of Molokai, to yield agar, and if so, to yield enough agar to deem agar extraction as a feasible method of eradication. The proposition that Gracilaria salircornia, commonly known as Gorilla Ogo, would be capable of producing agar was based on the fact that red seaweed from the Gracilaria genus has been used in the industrial agar market. To test the hypothesis, five 20g sun bleached samples of Gracilaria salicornia were treated with NaOH (Sodium Hydroxide), neutralized with Hydrochloric acid, boiled, and filtered for agar. The average agar gel yield sample was 70.8g. It had cost 79 cents to produce 70.8g of agar gel. If this were to be sold at the same price as industrial agar, it would be sold for $1.55. This means there would create a profit of 76 cents per 20g batch of dry Gracilaria salicornia. This discovery could lead to a possible economic incentive for companies to assist in the eradication of Gracilaria salicornia.

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