

**CARRAGEENAN APPLICATION ON CUCUMBER (*Cucumis sativus L.*)
PRODUCTION UNDER TROPICAL GREENHOUSE CONDITION**

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ACCEPTANCE SHEET

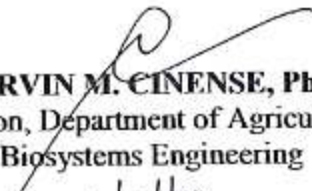
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BIOGRAPHICAL SKETCH

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ABSTRACT

LAPLANO, ALVIN M, Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, June 2019. **CARRAGEENAN APPLICATION ON CUCUMBER (*Cucumis sativus L.*) PRODUCTION UNDER TROPICAL GREENHOUSE CONDITION**

Adviser: CAROLYN GRACE G. SOMERA, M.Sc.

The application of carrageenan plant growth regulator is considered to provide right nutrient for crop growth and production. Many people especially farmers, are still not aware on the application of carrageenan plant growth promoter. Fertilizer plays an important role in maintaining sustainable growth of every crop and carrageenan can be used as an effective alternative source. This study aimed to evaluate the effects of carrageenan application on cucumber (*Cucumis sativus L.*) production under tropical greenhouse condition.

A drip irrigation system was designed and installed inside the greenhouse for cucumber production. Three carrageenan concentrations were considered as treatments, 10 ml/l carrageenan PGP, 20 ml/l carrageenan PGP and 30 ml/l carrageenan PGP. The carrageenan was applied as foliar fertilizer. The growth and yield of cucumber at different concentration of carrageenan application were determined. The cost of producing cucumber using carrageenan under tropical greenhouse was also determined. The experiment was laid out in a Completely Randomized Design (CRD). Data were analyzed using Analysis of Variance (ANOVA) and the difference among means was analyzed using Least significance difference (LSD) at 5% level of significance.

Results revealed that carrageenan PGP had a significant effect on the growth and yield of cucumber under tropical greenhouse condition. The best carrageenan concentration was 20 mL/l. which resulted the tallest plant height with 202.2 cm, highest crop yield with 1.2 kg, heaviest fruit weight with 322 g, longest fruit length with 19.0 cm and the biggest diameter with 4.6 cm. As compared with the different carrageenan concentration, 20 ml/l resulted with highest growth and yield than the control. The total material and operating expenses for an area of 70 m² was 11,002.45 Php/yr. The projected yield and cost of production per year were 518.4 kg/yr and 21.2 Php, respectively. As compared to current market price of cucumber is 24 Php/kg, therefore a 3.8 Php/kg profit can be earned when sold in the market.

Keywords: carrageenan, foliar fertilizer, tropical greenhouse.

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