ABSTRACT

THE INFLUENCE OF TYPES OF PRESERVATIVE SUBSTANCE TO THE CHEMICAL, ORGANOLEPTIC, AND MICROBIOLOGICAL PROPERTIES OF JELLY CANDY FROM DRAGON FRUIT (*Hylocereus polyrhizus*) ALONG ROOM TEMPERATURE STORAGE

By

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Dragon fruit (*Hylocereus polyrhizus*) is recently a popular fruit in Indonesia. However, this fruit, as well as other common fruits, will degrade immediately without further processing. One of product diversification efforts is using dragon fruit in making jelly candy. This research objective is to find out types of preservative substance that is able to produce fruit dragon jelly candy with best chemical and organoleptic properties, and prevent from microorganism damage along storage.

This research used perfect group randomized design consisting of two factors and two repetitions. The first factors were preservative types consisting of without preservative (P0), 0.1% (b/v) natrium benzoate (P1), 0.2% (b/v) natrium propionate (P2). The second factors were the storage durations in room temperature consisting of duration of 0 day (H0), 5 days (H1), 10 days (H2), 15 days (H3), 20 days (H4), 25 days (H5), 30 days (H6), 35 days (H7), and 40 days (H8). The observed parameters were water content, ash content, sugar reduction, total of microbial and organoleptic test. Obtained data were analyzed using analysis of variance (anova) to obtain prediction error variance, and significant test to find out if any differences exist amongst treatments. The data homogeneity was tested using Bartlett test, while data additivity is tested using Tukey test. The data analysis continued with comparison and orthogonal polynomial tests in significant levels of 1% and 5% respectively.

The results showed that the types of preservative and storage duration had significant influence to the improvement of water content, sugar reduction, total of microbial increase, elasticity score reduction, and reduction of total acceptance score of dragon fruit jelly candy.
The use of 0.2% (b/v) Na-propionate in the 20th days of storage (H4P2) produced the best chemical and microbiological properties for dragon fruit jelly candy, with microbial total of $9 \times 10^6$ Col/g, 17.66% water content, 0.343% ash content, 4.44% sugar reduction. Organoleptic test result showed that dragon fruit jelly candy using Na-propionate preservative in 20 days storage (H4P2) has typical dragon fruit aroma, turbid brown colored, elastic, sweet taste, and more favored by panelists.

Keywords: jelly fruit, dragon fruit, preservative