

**QUALITY RESPONSE AND SHELF LIFE OF WHITE ONION  
(*Allium cepa* L.) UNDER Zeph-C SOFT-CHILL**

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An Undergraduate Thesis Manuscript Submitted to the Faculty of the Department of  
Agricultural and Biosystems Engineering, College of Engineering, Central  
Luzon State University, Science City of Muñoz, Nueva Ecija,  
Philippines in Partial Fulfillment of the Requirements  
for the Degree of

**BACHELOR OF SCIENCE IN AGRICULTURAL AND  
BIOSYSTEMS ENGINEERING  
(AB Process Engineering)**

**JUNE 2023**

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## ABSTRACT

**AGUILAR, JEI CLEVER F. and GOZUN, MARK M.** Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Munoz, Nueva Ecija, **JUNE 2023, QUALITY RESPONSE AND SHELF LIFE OF WHITE ONION (*Allium cepa* L.) UNDER Zeph-C SOFT-CHILL**

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The study aimed to determine the optimum packaging material and storage condition in prolonging shelf life and maintaining the quality of white onion. The evaluation was based on the effect of different packaging materials and storage conditions in the physical and chemical properties of the white onion. Different packaging materials (polyethylene bag, red sack/buriki, bond paper) and storage conditions (room condition, 0.5°C and 95% RH) were used as independent variables in the study. The effect of these two factors were evaluated in terms of firmness, percentage weight loss, color, total soluble solids (TSS), and spoilage rate.

Results showed that the preserved storability of white onion under room condition and 0.5°C and 95% RH was 4 weeks and 7 weeks, respectively. Results also showed that the firmness of white onion was retained in low temperature storage (11.67 kg) after 49 days. Reduction of weight loss was observed in samples packaged with polyethylene bags and extended green-life of vegetables samples was also observed at low temperature. TSS was found to be higher on samples also at low temperature and

reach the maximum value of 9.16 °Brix on the 42<sup>th</sup> day of storage. The highest spoilage rate was observed with polyethylene bag stored at room condition (39.72%) while onion samples packaged in polyethylene bag stored at 0.5°C and 95% RH condition has the lowest recorded spoilage rate (2.40%). It was found that the optimum packaging material for white onion was polyethylene bag.

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