

## ABSTRACT

FITRI APRILIA KUMALA (24020122140121). **The Effect of Packaging Materials and Cold Storage Duration on the Physical Condition and Bioactive Compound Content of Red Chili Peppers (*Capsicum annuum* L.)**. Under the guidance of Yulita Nurchayati and Endah Dwi Hastuti.

Red chili is a horticultural product that is easily damaged due to its high water content, which has an impact on its quality decline. Packaging materials and storage time for a certain time affect the quality of red chili fruit. The purpose of this study was to examine the effect of packaging materials and storage time, as well as their interaction on the quality of red chili fruit, including physical condition and bioactive compound content. Chilies were packaged with plastic and paper, then stored in a refrigerator at 7°C. Samples for capsaicin analysis were dried in a 60°C oven and extracted using ethyl acetate solvent, while vitamin C and total carotenoid analysis were carried out with fresh samples. Analysis of the content of these compounds was carried out using the spectrophotometric method. The design of this study was a Completely Randomized Design (CRD) with a 3x4 factorial pattern and was carried out with 3 replications. The first factor was packaging material: P0 (Without Packaging), P1 (PP Plastic), and P2 (HVS Paper), and the second factor was storage time: L0 (0 days), L1 (7 days), L2 (14 days), and L3 (21 days). The parameters of this study were weight loss, texture, color change, capsaicin content, vitamin C, and total carotenoids. Data were analyzed using ANOVA followed by DMRT. The results showed that there was an interaction between packaging material and storage time on the physical condition and bioactive compound content. The optimal packaging material and storage time to maintain the quality of red chilies were PP plastic packaging for 14 days for texture and vitamin C, while HVS paper packaging for 7-21 days produced high capsaicin and carotenoid content. The use of a temperature of 7°C can prevent physical damage and maintain the bioactive compound content of red chilies.

*Keywords: Postharvest, PP Plastic, HVS Paper, Cold Storage, Antioxidants.*