

ABSTRACT

Herlina Setiawati. 24020122140175. **The Effects of Harvest Age and Storage Duration on the Morphology, Capsaicin Content, and Vitamin C Content of Cabai Rawit (*Capsicum frutescens* L.).** Under the guidance of Yulita Nurchayati and Muhammad Luqman Hakim.

Cabai rawit (*Capsicum frutescens* L.) is a horticultural commodity of high economic value that contains capsaicin, an indicator of pungency, and vitamin C, an antioxidant. The levels of these two compounds are dynamic and influenced by harvest age and postharvest storage conditions. This study aims to examine the effects of harvest age, storage duration, and their interaction on the capsaicin and vitamin C content in bird's eye chili fruits. The study was conducted using purposive sampling at farm plots in Ngablak Subdistrict, Magelang Regency, and at the Laboratory of Plant Structure and Function Biology, Diponegoro University. The study design used was a Complete Randomized Design (CRD) with a 3×4 factorial pattern, where the first factor was harvest age (100, 110, and 120 days after planting) and the second factor was storage duration (0, 3, 6, and 9 days). Samples were stored at 7°C in polypropylene (PP) plastic containers with three replicates. The parameters observed included fruit morphology (color, texture, and skin appearance), weight loss, capsaicin content, and vitamin C content. The data were analyzed using ANOVA and the DMRT test at the 5% significance level. The results of the study show that the interaction between harvest age and storage duration has a significant effect on capsaicin and vitamin C content. The highest capsaicin content was obtained at a harvest age of 120 HST and a storage period of 3 days, at 286.11 mg/100 g, while the highest vitamin C content was obtained at a harvest age of 120 HST with a storage period of 0–3 days, ranging from 14.83 to 13.73 mg/100 g. Capsaicin levels increased through the third day of storage and then decreased, while vitamin C levels decreased as storage duration increased. The combination of a harvest age of 120 HST and 3 days of storage was the best treatment for maintaining the capsaicin and vitamin C content of cayenne peppers.

Keywords: secondary metabolites, postharvest handling, bioactive compounds, harvest maturity