ABSTRACT

THE EFFECT OF CATECHOL COPIGMENT ON COLOR STABILITY ANTHOCYANIN OF EXTRACT PURPLE HEART PLANT (*Tradescantia pallida*)

By

FENI WIDIANASARI

The purpose of this reasearch was to determine the effect of molar ratio of catechol and anthocyanin extracts of purple heart plant (*Tradescantia pallida*) on stabilizing copigmentated anthocyanin during storage. The experiment was arranged in a Random Complete Block Design (RCBD) in factorial (3 x 6) with 3 replications. The first factor was the ratio of catechol with anthocyanin (R), 0:1 (R0), 50:1 (R1), and 100:1 (R2). The second factor was the storage time (L), day 0 (L0), day 10 (L1), day 20 (L2), day 30 (L3), day 40 (L4), and day 50 (L5). The data were analyzed using Bartlett test to find data homogenity, the Tuckey test was used to test data additivity, and then tested using ANOVA for know difference treatments and continued test with orthogonal polynomial comparison test at 5% level for find the best treatments.

The results showed that catechol copigment on anthocyanin with ratio until 100:1 did not stabilized anthocyanin of extract purple heart plant during 50 days of storage. The copigmentation formed weak complexes copigmentation indicated

by the low bathochromic and hypochromic, reduction of concentration and anthocyanin color retention at room temperature. Anthocyanin concentration and color retention after 50 days of storage decreased from 0,06 mM/L to 0,04 mM/L, and from 100% to 86,65%, respectivelly. The results supported also by copigmentation with catechol at 65^{o}C did not effectively inhibit the anthocyanin degradation rate, indicated by the value of kinetic constant (k) and half-life ($t_{1/2}$) of anthocyanin without copigmentation and with copigmentation at ratio of 50:1 and 100:1 were 0,05 mM/L/hour and 13,33 hours; 0,08 mM/L/hour and 8,5 hours; 0,07 mM/L/hour and 9,63 hours, respectivelly.

Keywords: copigmentation, anthocyanin, catechol, purple heart.