

Thesis Title	Effect of Light, pH and Sucrose on Anthocyanin Content in Cut Rose (<i>Rosa hybrida</i>) var 'Dalas'
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Abstract

Two Experiments were conducted to study the effect of light, pH and sucrose on anthocyanin content in cut rose var. 'Dalas'. In the first experiment, the effect of blue light, red light, 12 hours of illumination and period of darkness on the change of anthocyanin and flavonoid contents in rose petals were determined. The results showed that roses kept in blue light, red light, 12 hours of illumination and a period of darkness increased in the concentration of anthocyanin after one day storage. Afterwards, the concentration of anthocyanin remained constant. Although roses kept in 12 hours of illumination had the highest the anthocyanin concentration after 5 days storage but the rose's color remained constant. The highest contents of reducing sugar was found in rose kept in 12 hours of illumination and red light, blue light and a period of darkness respectively. In addition, roses kept in 12 hours of illumination could increase protein contents and respiration rate were increased after 3 days storage. The weight loss was increased in roses kept in 12 hours of illumination, red light, blue light and a period of darkness respectively. In the second experiment, the interaction of pH 4, 5 and 7 with added sucrose 0, 10 and 15% w/v in vase solution were determined. The results showed that pH and sucrose had slightly effects on anthocyanin and flavonoid contents but showed non significant. However these parameters caused a change in petals color. The roses stored in a solution of 15% sucrose at pH 5 had the least change in petals color while petals altered rapidly in roses stored in a solution of 15% sucrose at pH 4. The content of reducing sugar, respiration rate and ethylene production were

increased when sucrose concentrations were increased. Ethylene production raised to a maximum after one day storage in the roses stored in solution with sucrose and then subsequently declined. In contrast, respiration rate did not change until 3 days storage. In addition, The weight loss was decreased in roses stored in a solution with sucrose 15%, sucrose 10% and sucrose 0% respectively.

Keywords: rose / light / pH / sucrose / anthocyanin / color change