

Combined effect of leaf chlorophyll and anthocyanin content on the overall aesthetic appearance of coleus (*Plectranthus scutellarioides* (L.) R. Br) var. ‘Velvet red’ under four different light levels

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Most Coleus (*Plectranthus scutellarioides* (L.) R.Br) varieties change the aesthetic appearance of leaf when exposed to different light intensities. An experiment was carried out to evaluate the changes in chlorophyll and anthocyanin content in leaves that determine the color of *Plectranthus scutellarioides* (L.) R.Br var. ‘Velvet red’ (coleus) in response to a heterogeneous light environment. Plants were arranged as a completely Randomized design, under full sun light (T1), 40% (T2), 50% (T3) and 70% (T4) shade where the shade was provided with black color polypropylene nets. The experiment was conducted for 60 days. Changes in light levels affected on chlorophyll content, anthocyanin content and as a whole, the leaf color. The highest anthocyanin content and the lowest chlorophyll content were recorded under 0% shade (full sunlight). Leaf color changes were measured using an Image color analysis computer software. According to resulted RGB (Red, Green, Blue) histograms, the brightness of red color and the redness of the leaves become more prominent under 0% shade. Moreover, the highest chlorophyll content and the lowest anthocyanin content were recorded under 70% shade. The brightness of red color was reduced and the green color becomes more prominent under 70% shade. Overall, the heterogeneous light environment affects the leaf pigmentation and aesthetic appearance of the ‘Velvet red’ variety of coleus.

Keywords: *Plectranthus scutellarioides* (L.) R.Br, chlorophyll, anthocyanin, RGB histograms, pigmentation

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