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RESEARCH ARTICLE

Effect of seasonal variations on the quality and quantity of the flower pigments

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SUMMARY

The seasonal variations in the different pigment contents indicate the physiological state of the plant and are related to the seasonal water deficiency, high ambient irradiance during summer and very low temperature in winter. The flower constitutes flavonoid pigments. Flavonoids belong to the polyphenol group, which includes so many colouring pigments *i.e.* the anthocyanidin, flavones, flavanones, flavonols, etc. Anthocyanin is among the permitted pigments that can be used for food colourants and having been considered a potential replacement for synthetic dye. Some other flavonoids also enhance the colour of the anthocyanin as co-pigment. The objective of this study was to analyze the flower colouring pigments and their associated phytochemicals qualitatively and quantitatively at developmental stage S-4 (fully opened flower) of *R. indica*, *H. rosasinensis*, *C. ternatea* and *M. jalapa*. Variations in changes in floral pigments (anthocyanin and flavonoids), total sugar and protein content in petals of test flower at S4 stage were analyzed month and season wise. The experimental results noticed at stage 4 the floral pigments (anthocyanin and flavonoids), total sugar and protein content of petal of test flowers were changed their content in different seasons. Regarding seasonal variation, the trend of floral pigment content in petals of test flowers was as follows summer season > winter season > rainy season Among the flowers, the floral pigment content in petal exhibited the following order *Clitoria ternatea* > *Rosa indica* >*Hibiscus rosasinensis* > *Mirabilis jalapa*. The colour pigments *viz*., flavonoids, anthocyanins and phenol derivatives, protein, sugar and other nutrients present in petal of test flower might have act as potent colorant, antioxidant and neutraceuticals in food market. The procurement of colour pigments from petal of the flower at appropriate season is highly essential for further processing and manipulation through screening and evaluation.

Key Words : Seasonal variation, Anthocyanin, Flavonoids, Colour pigment, Petal

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