

FLOWER CROPS: A POTENTIAL SOURCE OF NUTRACEUTICAL COMPOUNDS

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Flower crops are considered as rich source of various nutraceutical compounds that are being commercially exploited worldwide. These bioactive compounds play a significant role in plant as well as human health. Polyphenols, flavonols, pigments etc. are the important bioactive compounds that are found in most of the plant species. Among them, plant pigments holds the prime position as they serve many functions in plants such as they provide protection from temperature, UV radiation, low water potential etc. Moreover, these pigments also possess antioxidant properties. Nowadays, synthetic pigments dominate the market world over, however due to increase awareness among people about the ill effects of these synthetic pigments on human health and environment, focus is oriented towards maximum utilization of natural products as they are extracted from natural sources, which are pure and safe for human use and more importantly ecofriendly in nature. Plant pigments are classified into four major classes viz. anthocyanins, carotenoids, betalains and chlorophylls. Anthocyanins are flavonoid pigments which are responsible for imparting red, purple, pink and blue colouration to the plants. In flower, rose petals are rich source of anthocyanins and wide diversity of anthocyanins is found in roses. Petunia is another ornamental crop rich in anthocyanin pigments. Carotenoids are fat soluble pigments which imparts yellow, orange and red colours in plants and animals. Marigold is also one of the richest source of carotenoids especially lutein which possess antioxidant activities and moreover intake of lutein helps in curing age related macular diseases. Carotenoids also find its commercial applications in food colouring industries. Another group of pigments, betalains which is sub divided into two sub-groups, betacyanin responsible for red-violet colouration and betaxanthin imparts yellow to orange pigments. Bougainvillea is also one of rich source of betalains and floral bracts are the economic part. The Division of Floriculture and Landscaping, ICAR-IARI has initiated research work on characterization of major pigments i.e. anthocyanins in rose, petunia and chrysanthemum; carotenoids in marigold and chrysanthemum and betalains in bougainvillea. The estimation of antioxidant properties in these crops has also been done. Standardization of the drying methods for higher retention of pigments has been done in marigold and bougainvillea. Moreover, histological studies of rose genotypes have been done.

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