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Evaluation of chilli cultivars (*Capsicum annuum* L.) for qualitative parameters at different maturity stages

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ABSTRACT : The chemical composition of chillies at different maturity stages showed significant differences among all the cultivars, stage of maturity and their interaction. Moisture content of cultivars decreased significantly, while fibre, fat, ash and ascorbic acid content increased with advancement of maturity stages. The ascorbic acid content of the cultivars was high at ripe stage. The capsaicin and oleoresin content increased with advancement in stage of maturity. A significant increase in total carotenoid, â carotene and anthocynin content and on the contrary, a significant decrease in chlorophyll content was noticed with progression of maturity.

KEY WORDS : Cultivars, Moisture, Capsaicin, Pigments, Maturity stages

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Chilli (*Capsicum annuum* L.)production in India is expanding more rapidly than the growth in population, giving boost to both export and domestic consumption. An encouraging development is that most of the expansion is contributed by an improvement in yield per unit area and relatively little from expansion in area. Chilli is an important commodity used as a vegetable, spice, medicinal herb, and ornamental plant by billions of people everyday. It is also used as an ingredient in industrial products. The diversity in its uses, forms and shapes brings complexity into its production and distribution systems (Farooqi *et al.*, 2003). Chillies used in flavoring foods are popular in the cuisines of many parts of the world as it adds the pungency, colour, the remarkable aroma. Hence, it is of great interest for its chemistry, sensory attributes, and physiological action. The pungency of *Capsicum* fruits, its evaluation, chemical structure relationship, its increasing acceptance and preference by a variety of populations are of great research interest. The wide traditional uses in the growing regions and its intense physiological effects have attracted the attention of researchers of many different disciplines.

It is imperative that quality of chilli is becoming more important to get good marketability with high level consumer acceptance. In this regard an investigation on evaluation of chilli (*Capsicum annuum* L.) cultivars for their quality characteristics at different maturity stages was under taken.

RESEARCH METHODS

The promising chilli cultivars developed by private and public sectors grown during *Rabi* season were selected for the investigation. Chemical composition of 17 cultivars at green, ripe and dry stages were analysed in triplicates. Moisture, fat and ash content were analysed according to the methods of AOAC (Anonymous, 1990), crude fibre was assessed according to Jacobs (1959). The ascorbic acid (Anonymous, 1980), capsaicin (Palicio,1977) and oleoresin (Anonymous, 1997) was determined for all the selected cultivars at three stages. Further, the pigments such as chlorophyll (Yoshida *et al.*, 1972), carotenoid (Bajracharya, (1998), β-carotene (Phole and Gregory,1960) and anthocyanin (Ranganna,1986) were analysed. The chemical composition of 17 cultivars were statistically analysed by Factorial Completely Randomized Design.

RESEARCH FINDINGS AND DISCUSSION

The chemical composition of chillies varied significantly