

3rd International Conference on **Agriculture & Horticulture**

October 27-29, 2014 Hyderabad International Convention Centre, India

Genotypic variability in color, pungency and antioxidant activity among Chilli genotypes

V Keshava Rao, K Madhavi Reddy and C S Bujjibabu
Indian Institute of Horticultural Research, India

Chilli is a predominant spice crop in India. The important states growing chilli are Andhra Pradesh, Orissa, Maharashtra, West Bengal, Karnataka, Rajasthan and Tamil Nadu. The two important attributes of this spice include color and pungency. The color of chilli powder is due to the presence of carotenoides whereas the pungency level depends on the amount of capsaicinoids. India has many varieties with different quality attributes. Apart from high domestic consumption, chilli is being exported to many countries. Each importing country will have its own preferences over quality depending upon the consumption pattern. Large differences in biochemical parameters were observed among the varieties studied.

Thirteen OP varieties were evaluated for their colour, pungency and antioxidant activity in the dried fruit powder at Indian Institute of Horticultural Research during 2013-14. Wide variation was observed in the colour values among the varieties evaluated. The Colour values, calculated as per ASTA 20, ranged from 3 in Habanero to 106 in Arka Swetha. Individual capsaicinoids viz., capsaicin, nordihydrocapsaicin and dihydrocapsaicin were determined in the varieties by HPLC. A gradient HPLC method was standardized to give optimum separation. Contribution of individual capsaicinids was taken to arrive at pungency levels (SHU). Pungency levels were highest in Andaman collection (941901 SHU) followed by Naga chilli (623269 SHU) and Bhut Jalokia (493330 SHU). Even though capsaicin was predominant among the three compounds, its content varied from 60.43 to 84.1 % in 13 varieties. It was observed that as the pungency increased, the CP/DC ratio decreased. Total phenols among the studied varieties ranged from 720 to 3330 mg/100 g. Phenolic concentration was high in varieties with high pungency values. Antioxidant capacity values (FRAP & DPPH) are also high in highly pungent varieties among the 13 varieties studied. The color values are found to be independent of pungency values.

Biography

V Keshava Rao has completed his PhD at the age of 35 years from Kakatiya University. His discipline is organic chemistry with specialization in phytochemistry. He is working as senior Scientist at Indian Institute of Horticultural Research, Bangalore, a premier horticultural research organization. He has published more than 20 papers in reputed journals.

vk5@yahoo.com; vk5@iihr.ernet.in