



## Evaluation of tomato (*Lycopersicon esculentum* Mill.) hybrids for different yield and quality traits

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### ABSTRACT

Present experiment was carried out to evaluate 22 hybrids for yield, quality and against pest and diseases tolerance. Yield per plant differed significantly among hybrids which may attributed to significantly higher number of fruits per plant and average fruit weight. The highest fruit yield per plant was recorded in hybrid US 618 (5.94 kg plant<sup>-1</sup>). With respect to quality, among the hybrids TSI-48 (5.13 °Brix), US 2175 (5.17°Brix), US 1196 (5.03°Brix) and Anup (4.98°Brix) recorded highest TSS with lower acidity of 0.25 per cent, 0.36 per cent, 0.33 per cent and 0.32 per cent, respectively. The fruit firmness was highest for Heem Sohna (4.47 kg cm<sup>-2</sup>). Fruit of hybrid Heem Sohna (25.20 days) had the longest shelf life followed by TSI-48 (22.60 days). From an overall view of results, it can be inferred that the hybrids US 618, Heem Sohna and US 1196 were high yielding and good for fresh marketing. For the purpose of processing hybrids US 1196, T 1224, TSI-48, Anup and Super samurai were found suitable. Hence, these hybrids were found better suited for commercial cultivation in Eastern Dry Zone of Karnataka (Zone 5).

Hongal, Shivanand, Kumara, B. Suresh, Prakash, K., Puttaraju, T.B. and Sudheesh, N.K. (2011). Evaluation of tomato (*Lycopersicon esculentum* Mill.) hybrids for different yield and quality traits, *Asian J. Hort.*, **6** (1) : 101-105.

**Key words :** *Lycopersicon esculentum* (Mill), Evaluation, Hybrids

**T**omato (*Lycopersicon esculentum* Mill.), belongs to the family Solanaceae, is an extremely popular and widely grown vegetable in the world. It is grown for its edible fruits, which can be consumed either fresh as salads or consumed after cooking or utilized in the preparation of range of processed products like sauce, ketchup, puree, paste, powder, soup and canned whole fruits. Unripe green fruits are used for preparation of pickles and chutney. Tomato tops the list of processed vegetables and is a very good source of lycopene, ascorbic acid and  $\beta$ -carotene, which are considered as good (Anonymous, 2004).

Now a days, inspite of the availability of several hybrids, the growers are finding it difficult to go for cultivation of tomatoes, some of the reasons being, their suitability for a particular region, demand more attentive management, ripe at a time that leads to the problem of storage and processing facilities, lack of high and quality yield under open conditions and unstable inheritance of specific traits. To minimize these problems the new tomato hybrids developed should adopt to varied agro-climatic conditions may be a difficult proposition. However, India being a vast country with varied agro-climatic regions, different genotypes need to be evolved for specific regions.

In general, with ever increasing demand for tomatoes, it has become imperative to develop high yielding hybrids with resistance to biotic and abiotic stresses and suitable to fresh market and processing hybrids for cultivation in different agro-climatic conditions to boost up the tomato production per unit area and per unit time according to the consumers and growers preference.

### MATERIALS AND METHODS

The experiment was conducted at the Horticulture Research Station, Gandhi Krishi Vignana Kendra, University of Agricultural Sciences, Bangalore (Zone-5), on red sandy loam soil during the *Kharif* season of 2007-2008. In this experiment twenty two tomato hybrids were selected from both public and private sectors (Table 1).

The experiment was laid out in Randomized Complete Block Design (RCBD) with three replications. Healthy, uniform 28 days old seedlings were transplanted on 31<sup>st</sup> August 2007. The distance between plants was 0.75m and the distance between rows was 1.0m. The crop was raised by providing recommended package of practices, (Anonymous, 2004). Observations were recorded in respect of plant height (cm), days to 50 per cent flowering,