

## Evaluation of nine genotypes of determinate tomato under south Gujarat conditions

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### SUMMARY

Field experiment was conducted to evaluate the nine genotypes of determinate tomato under south Gujarat conditions at Regional Horticultural Research Station of Navsari Agricultural University, Navsari as voluntary centre during *Rabi* season of 2009. A randomized block design was used with three replications, which included nine genotypes of tomato. The tomato genotypes were transplanted with care in the field during the month of November 2009 at the spacing of 60 cm x 40 cm. Significant difference was observed among the genotypes for yield attributing parameters. The genotype GT-2 was found significantly superior than all the genotypes under study, recorded the fruit yield of 73.13 t/ha. The next best genotype was ATL-01-19 (68.41 t/ha).

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**Key words :** Tomato, Genotypes and yield

**T**omato (*Lycopersicon esculentum* Mill.) is one of the most versatile crops in the world because of its fast and wide climatic adaptation. It is universally treated as “protective food” and provides almost all types of vitamins and minerals in quite fair amount. (Chattopadhyay *et al.*, 2007).

It belongs to family Solanaceae and is a unique vegetable crop consumed as fresh and in processed form, across the length and breadth of the country, covering an area of 5.99 lakh ha with a production of 111.48 million tones. The crop shares about 7.37% of the total area under vegetable cultivation and 8.52% of the total production. It tops the list of canned vegetables. In Gujarat it occupies an area of 30,526 ha with a production of 7,46,203 metric tones. (Salaria and Salaria, 2009).

There is wide variation among tomato genotypes for

different traits. Genotypic variation in desirable component have greater potential to affect the quantity and quality of the tomato fruit (Ram, 1998 and Stevens, 1986).

Proper and systematic evaluation of genetic resources is essential to understand and estimate the genetic variability, heritability and genetic advance. The breeding strategy involves generating variable germplasm with different sources of resistance and selection of superior genotypes for use in hybridization. With this aim, tomato genotypes of diverse origin were evaluated for yield and quality (Pradeepkumar *et al.*, 2001).

The goal of this type of trial is to evaluate genotypes for local adaptation and to identify genotypes with high yield and fruit quality under a range of geographic areas and environmental conditions.

The knowledge of genetics of various traits is very essential for a breeder to plan breeding program for getting efficient results in the succeeding generations. Colour of fruits, fruit shape, position, fruit apex, fruit length and thickness, pedicel length, number of locules/fruit, T.S.S % etc. are considered as important characters in tomato improvement work. It provides valuable guidance based on the information generated by conducting the IET/SSVT/LSVT/AVT trails on a particular crop on large scale to the research workers, olericulturist and plant breeder for their breeding program in other regions. (Chadha, 2002).

### MATERIALS AND METHODS

Total nine genotypes with three checks of tomato

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