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CORRELATION AND PATH COEFFICIENT ANALYSIS OF GROWTH, YIELD AND QUALITY OF TOMATO (LYCOPERSICON ESCULENTUM MILL.)

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ABSTRACT: A set of 55 genotypes of tomato were evaluated in a randomized block design with two replications during rabi 2008-09 at Rajendranagar, Hyderabad. Correlation coefficient and path analysis was done for growth, yield and quality parameters. Analysis indicated that average fruit weight, number of fruits per plant and shelf life are the most important characters in increasing the fruit yield. In general, the genotypic correlation coefficients were higher than phenotypic correlation coefficients indicating a less influence of environmental factors and relative stability of the genotypes. Fruit yield per plant exhibited significantly positive association with average fruit weight and shelf life indicating the importance of these traits in selection for yield. Direct selection based on these traits would result in simultaneous improvement of aforesaid traits and yield per se in tomato. Considering the various correlations, it is suggested that as the plant height increased there was corresponding increase in number of primary branches per plant, days to 50 % flowering, number of flowers per cluster, number of flower clusters per plant and number of fruits per plant. The association recorded significant improvement in yield. Acidity showed positive significant correlation with total soluble solids. Path analysis confirmed that maximum positive direct effect on fruit yield per plant was exhibited by average fruit weight followed by number of fruits per plant. The residual effect in genotypic paths was 0.506. It is predicted that 49.40 per cent variation in yield at genotypic level had been determined. It further imparted the occurrence of some more factors, contributing to fruit yield of tomato.

Key words: *Correlation coefficient, Genotypes, Path coefficient, Tomato*