

## CORRELATION STUDIES IN ONION GENOTYPES IN *KHARIF* SEASON UNDER IRRIGATED AND RAINFED SITUATIONS

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### ABSTRACT

Correlation co-efficient analysis was carried out for bulb yield with some of their component characters in thirteen onion genotypes of onion in randomized block design with three replications in medium black soils at the Agricultural Research Station, Hiriya both under irrigated and rainfed situations during *kharif* seasons of 1999-2000 and 2000-2001. Eleven morphological quantitative characters were measured on randomly selected plants at harvest. The data was subjected to a standard statistical procedure to study the correlation between the bulb yield and vegetative characters and yield components. The value of correlation co-efficients ( $r$ ) were calculated and tested for their significance. The results revealed that plant height, number of leaves per plant, neck thickness, number of rings per bulb, ring thickness, weight of bulb and volume of bulb had positive and significant correlation with the bulb yield. Thus, it would be rewarding to lay due emphasis on the selection of these characters for rapid improvement on bulb yield of onion.

**Key words:** Onion, Character association, Correlation, *Kharif* season, Irrigated and rainfed situations.

Onion (*Allium cepa* L.) is an important commercial vegetable cum spice crop cultivated extensively in India, yet its production is very low compared to national and world average productivity. Different growth and yield components constitute to the over all bulb yield, a quantitatively inherited trait. Bulb yield of onion, being complex character, direct selection of this character would not be a reliable approach without giving due importance to their genetic nature. Information on the correlation co-efficients between the bulb yield and growth as well as yield attributes is a pre-requisite for crop improvement. Though the correlations give information about the component traits, they do not provide a true picture of relative importance of direct and indirect influence of these component traits. Yield is governed by genetic constitution and environmental factors under which a cultivar or a variety is grown. The knowledge of association of various characters will provide necessary information in understanding the yield variations. Hence, the present investigation was taken up for understanding such inter-relationship by studying 13 genotypes of onion in *kharif* season under irrigated and rainfed situation.

consisted of 13 genotypes of onion from different sources. Out of these seven were from IIHR, Bangalore; two from NHRDF (AADF), Nasik; three from MPKV, Rahuri. As there was no released variety of onion for central dry zone of Karnataka, the leading variety Bellary Red Onion is being considered for comparison.

All the 13 genotypes were grown in a Randomized Block Design with three replications in medium black soils at the Agricultural Research Station, Hiriya under irrigated and rainfed situations in *kharif* seasons of 1999-2000 and 2000-2001. The seeds of all the genotypes were sown in the nursery in first week of May and the seedlings were transplanted in second week of June. Each entry was sown in a 10 row plot of 2.0m row length with 15 cm and 10 cm inter and intra row spacing, respectively. All the agronomic practices were followed to raise a successful crop. Observations on 11 quantitative characters from random plants in each plot of the replication were recorded at harvest. The data was subjected to a standard statistical procedure to study the correlation between the bulb yield and vegetative characters and yield components. The value of correlation co-efficients ( $r$ ) were calculated and tested for their significance as per the procedure indicated by Panse and Sukhatme (1957).

### MATERIALS AND METHODS

The experimental material for the present study

### RESULTS AND DISCUSSION

The data on multiple correlation studies between bulb