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Evaluation of onion varieties/hybrids for dry matter production and yield in *kharif* season under irrigated condition in central dry zone of Karnataka

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ABSTRACT

A field investigation was conducted to evaluate 13 varieties/hybrids of onion for dry matter production and yield in *kharif* season under irrigated conditions in Central Dry zone of Karnataka. The characters studied were dry weight of the leaves, dry matter content of the bulb, total dry matter production and bulb yield. The varieties Baswant – 780, Arka kalyan and Agri Found Light Red (AFLR) which gave higher dry matter and bulb yield can be taken up for raising profitable crop of onion in *kharif* season under irrigated condition in Central Dry zone of Karnataka.

Key words : Onion cultivars, Dry matter production, *Kharif* season, Rainfed condition, Central dry zone of Karnataka

Onion (*Allium cepa* L.) is one of the commercial vegetable and spice crops of India, belonging to the family Alliaceae. In India, It is grown in 4.8 lakh hectares, with a production of 5.46 million tonnes and the productivity is 12.82 tonnes per hectare. In Karnataka, the crop is cultivated in an area of 1.03 lakh hectares with annual production of 12.27 lakh tonnes. Average yield is very low (11.91 t/ha) compared to national and world average productivity (Anon, 2001). In Karnataka, onion is mainly grown in Dharwad, Bijapur, Gulbarga, Belgaum, Raichur, Bellary, Chitradurga, Shimoga and Chikmaglore districts. The dry matter production and yield of onion is mainly dependent on the use of high yielding varieties, optimum use of fertilizers, plant protection measures and adaptability of a variety to a particular region. Bellary Red is the dominant variety in Karnataka. Besides this variety, several cultivars are being grown to some extent, but scientific information is not available on their performance regarding dry matter production and yield. The present investigation was therefore, undertaken to evaluate 13 varieties/ hybrids for dry matter production and yield during *kharif* season under irrigated condition in central dry zone of Karnataka.

MATERIALS AND METHODS

The present study was conducted at the Agricultural Research Station, Hiriyur, University of Agricultural Sciences, Bangalore during *kharif* seasons under irrigated conditions using 13 varieties/ hybrids of onion, *viz*., Bellary Red, N-2-4-1, Arka Pragathi, Arka Niketan, Arka kalyan, Arka Lalima (H-5), Arka Kirthiman (H-1), N-53, H-3, H-4, Agri Found Light Red (AFLR), Agri Found Dark Red (AFDR) and Baswant -780. The experiment was laid out in randomized block design with three replications during both the years. The seeds of different onion varieties/hybrids were sown during first week of May in nursery and transplanted in second week of June. Each experimental plot consisted of 10 rows for each treatment. The plot size was 2.0 x 1.5 m. The plants were spaced at a row to row distance 15 cm and plant to plant distance of 10 cm. The recommended package of practices were followed for raising the crop. The data was recorded on the characters like dry weight of leaves, dry matter content of the bulb, total dry matter production and bulb yield and subjected to statistical analysis as per the procedure outlined by Panse and Sukhatme (1984).

RESULTS AND DISCUSSION

The results obtained from the present investigation are presented below.

Yield of bulbs:

The pooled mean performance of onion genotypes for bulb yield furnished in Table 1 clearly indicated the significant differences among the genotypes.

In *kharif* season, under irrigated condition, during both the years, the varieties Baswant-780 (381.56q/ha) and Arkha Kalyan (360.77q/ha)were at par and recorded significantly higher bulb yield followed by AFLR (331.11q/ha), Arka Niketan (312.68 q/ha) and the least bulb yield (163.59 q/ha) was registered with Bellary Red.

Highest yield of bulbs from these varieties/ hybrids can be mainly attributed to the growth parameters which are important components of growth and had positive and