

Evaluation of different onion (*Allium cepa* L.) genotypes for yield and processing quality parameters in *kharif* season under irrigated condition

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ABSTRACT

An experiment on the evaluation of different onion genotypes for yield and processing quality parameters was conducted during *kharif* seasons under irrigated condition at Agricultural Research Station, Hiriyyur in Central Dry Zone of Karnataka. The characters studied were bulb yield, bulb weight, total soluble solids, dry matter content of the bulb, dry matter yield of the bulb, and physiological storage loss in weight and sprouting and rotting percentage. Based on the bulb yield and dry matter production of the bulb and also considering the storage qualities, the genetically superior genotypes Baswant – 780, Araka Kalyan and Agri Found Light Red (AFLR) were indentified as promising ones for commercial cultivation in *kharif* season under irrigated situation in central dry zone Karnataka.

Key words : Irrigated situation, *kharif* season, Onion genotypes, Processing quality, Rotting and sprouting.

Onion (*Allium cepa* L.) is one of the most important vegetable crop whose leafy portion as a vegetable and bulbs as salad and spice are used daily. 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, which is very low. It is mainly grown in states of Maharashtra, Orissa, Karnataka, Uttar Pradesh, Gujrat, Tamilnadu and Madhya Pradhesh. Karnataka alone occupies an area of 1.03 lakh hectares with annual production of 12.27 lakh tonnes and the average yield is only 11.91 tonnes per hectare (Anonymous, 2001), which is very low as compared to national and world average productivity. In Karnataka, onion is mainly grown in Dharwad, Bijapur, Gulburga, Belgaum, Raichur, Bellary, Chitradurga, Shimoga and Chikmagalore districts. Yield of onion is 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 genotypes are being grown in some extent, but scientific information is not available on their performance regarding yield and quality.

Long storage life of onion bulbs without having much losses in terms of weight and quality is most important for obtaining remunerative prices and exporting it to other countries. It is so essential because onion is used throughout the year in various ways. Storage of onion

bulbs after harvesting poses a great problem. The ultimate solution of this problem, besides method of culture, harvesting and curing, design of storage structures and use of certain chemicals is the selection of genotype(s) having long storage life without deteriorating its quality. Keeping the above points in view, the present investigation was therefore, undertaken to ascertain the yield potential of 13 genotypes and also to study their processing as well as storage qualities under irrigated situation during *kharif* seasons in the central dry zone of Karnataka.

MATERIALS AND METHODS

The present investigation was conducted at the Agriculture Research Station, Hiriyyur (Central dry zone of Karnataka) during *kharif* seasons under irrigated situation using 13 genotypes 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 genotypes were sown during first week of May in nursery and transplanted in the second week of June. Each experimental plot consisted of 10 rows for each treatment. The plot size was 2.0 x 1.5m. The plants were spaced at a row to row distance of 15 cm and plant to plant distance of 10 cm. The recommended package of practices was followed for raising the crop. Observations were recorded on five randomly selected plants in each treatment. The data was recorded on the characters like bulb yield(q/