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Research Paper

Performance of improved onion (*Allium cepa* L.) varieties under Marathwada region in respect of yield parameters and total soluble solids

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ABSTRACT : An experiment entitled "Performance of improved onion (*Allium cepa* L.) varieties under Marathwada region" was conducted at Department of Horticulture, Marathwada Agricultural University, Parbhani (Maharashtra) during *Rabi* 2006-2007, with eight varieties and three replications having the plot size of 2.25 m x 2.00 m as gross plot and 2.10 m x 1.90 m as net plot by adopting sowing on 15 cm x 10 cm. Significantly more number of cured bulb per kg (22.18) was recorded in the variety Sel.-383 over rest of varieties under study. Mean fresh weight, cured weight and yield of bulb was found to be highest in variety JNDWD-207. Maximum TSS was recorded in variety Arka Niketan (13.00 per cent).

Key Words : Onion, Variety, Vegetative growth, Yield, TSS

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nion (Allium cepa L.) belonging to the family Amaryllidaceae .Among the fresh vegetables onion, tomato and mushroom are reported to be highly export competitive. India is a traditional exporter of onions. India exports 1873002 Lakh MT onion bulbs worth 283428.50 lakh rupees and global picture of onion shows that though India leads in total area, the per hectare productivity is as lows as 16.41 MT and in Maharashtra per hectare productivity is 21.55 MT compared to top ranking Korea (66.67 MT) (Anonymous, 2009). This is mainly due to certain constraints like non adoption of appropriate scientific production technology under suitable agrocliamtic conditions for particular area and for particular variety, for increasing onion yield and productivity. Total soluble solids percentage of bulb is also an important quality parameter regarding demand for export of onion in global market. Thus present experiment was laid out with a view to evaluate the yield potential of different varieties of onion and their characters, yield parameter like weight of fresh and cured bulb, number of bulbs per kg, bulb yield and quality parameter TSS of bulb (per cent).

RESEARCH **P**ROCEDURE

The experiment was conducted during *Rabi* 2006-2007 at Department of Horticulture, College of Agriculture, Parbhani.

The experiment was laid out in Randomized Block Design (RBD) with three replications and eight varieties of onion for present study. The eight varities were Viz V₁- PRO-6, V₂-Sel-383, V₃-Sel-402, V₄–JNDWD-207, V₅-SYN-3, V₆-PKVSel white, V₇-L-28, V₈– Arka Niketan(C). The organic manure like FYM (20 t/ha) that was incorporated in soil 15 days before transplanting. Inorganic fertilizers used were urea, single super phosphate and muriate of potash. Recommended dose of fertilizer was 100: 50: 50 kg NPK/ha. The necessary preparatory tillage and intercultivation operations were done. Healthy, uniform seedlings of eight weeks old were selected for transplanting and transplanted at spacing of 15X10 cm. Harvesting of mature bulb was done when 50 per cent neck fall was observed. For biometric observations five plants were selected randomly from each plot as a observational plant and were labeled. After harvesting the weight of bulbs was recorded. The average weight of five observational plants was considered as average weight of fresh bulb. The bulbs were field cured for seven days by wind row method and weight of cured bulbs was recorded and average was computed. The weight of total harvested cured bulbs was recorded for each net plot separately and average net plot yield was calculated. The weight of total harvested cured bulbs was calculated on hectare basis for each treatment. Total soluble solids (w/weight) were determined with hand refractometer and the values recorded at 20° C before storage. Number of bulbs per kg was