ON-FARM EVALUATION OF MEDIUM MATURING POTATO HYBRIDS IN HASSAN DISTRICT OF KARNATAKA

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Potato is one of the most important commercial crop of Karnataka grown in three agro-climatic zones namely Southern transitional zone, Hilly zone and Eastern dry zon. In the Southern transitional zone, it is purely grown as rainfed crop during kharif season. Hassan is the major potato growing district in the state with an area of 25,000 ha producing 314750 tons of potato tubers with a productivity of 12.59 tons/ha which contributes nearly 60 percent of total production of potato crop in the state. In the present study, 2 potato hybrids identified under AICPIP, viz., JX-576 and MS-90-542 were evaluated in On-farm trial with cv. Kufri Jyoti as standard check during kharif 2001 and 2002. The trial was laid out in 9 locations in farmers fields with plot size of 100 sq. mtr area for each hybrid. The observations on various tuber and yield characters were recorded at the time of harvesting. Marketable tuber yield was recorded on tubers weighing more than 30 grams and tuber dry matter was worked out using hot air oven. The hybrids were screened for various diseases in field and disease intensity was recorded in 0-5 scale as per the AICPIP score card. The storage behavior of different potato hybrids were studied by keeping 5 kgs of potato tubers of each hybrid in nylon bags in the room temperature up to 120 days with respect to sprouting, rotting and weight loss. The investigation on various tuber and yield attributes, screening for pests and diseases and storage behavior of different potato hybrids were carried out for 2 years. The results of the On-farm trial revealed that the performance of potato hybrid JX-576 is superior as compared to other 2 hybrids and 15.65 percent increase in total tuber yield to that of the standard check cv. Kufri Jyoti. Also, the highest marketable tuber yield of 172.52 q/ha was obtained from JX-576 hybrid followed by the hybrid MS-90-542 (163.032q/ha) and it was least in cv. Kufri Jyoti (155.00q/ha). Tuber dry matter content was highest (17.75%) in cv. Kufri Jyoti followed by JX-576 (15.87%) and least in MS-90-542 (15.60%). With regard to disease incidence, the hybrid MS-90-542 shown tolerance to late blight and leaf roll diseases. Storage behavior of different potato hybrids revealed that the hybrid MS-90-542 performed better with 28.00 percent tuber sprouting, 28.54 percent rotting and weight loss of 40.16 percent after 120 days of storage under ambient conditions. Therefore, considering the performance of medium maturing hybrids in different locations in Hassan district of Karnataka, JX-576, an early bulking hybrid, which has resistance to major diseases and also high yield potential could be suitable for general cultivation under rainfed conditions in the southern transitional zone.

ON-FARM EVALUATION OF PROMISING POTATO GENOTYPES FOR ADAPTABILITY IN NORTHERN PLAINS AND PLATEAU REGIONS OF INDIA

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Six medium maturing genotypes were evaluated in ‘on-farm’ trials at three sites of each nine locations in rabi season consecutively for two years (2003-04 and 2004-05). The material was grown in plot size of 48.0 m² following the recommended package of practices. The crop was dehaulmed at 90 days and data were recorded on total tuber yield (TTY) and marketable tuber yield (MTY) on per plot basis and subjected to analysis of variance and stability analysis. Pooled data indicated that MS-92-1090 produced high total and marketable tuber yield at Hisar (370.96 and 360.08), Kota (245.01 and 233.87), Pantnagar (498.33 and 492.43), Faizabad (362.68 and 330.73) and Chhindwara (268.33 and 247.91q/ha). The stability analysis showed that genotypes, environments, genotype x environment and + (genotype x environment) effects were highly significant for TTY and MTY. Mean square of pool deviations were highly significant for both the characters. A perusal of stability parameters for TTX and MTY identified three adaptable genotypes. Genotype MS-92-1090 was most adaptable with 330.83 and 317.48q ha⁻¹ mean yield of TTY and MTY respectively with Pi = +22.28 and +26.23q ha⁻¹ and bi = -1.02 and 1.03 with significant mean square deviation followed by JW-160 and cv. Kufri Anand. The cultivars Kufri Sutlej and Kufri Bahar had poor adaptability for both these characters.