



Evaluation of Cabbage Varieties for Earliness and Yield in the Mid hills of Jammu and Kashmir

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ABSTRACT

A field investigation was undertaken to evaluate cabbage varieties for earliness and yield characters. The four treatments of the experiment were T1 Golden acre, T2 Pride of India, T3 Pusa mukta and T4 Early Pusa drum head. The trial was laid out in a randomized complete block design with four replications. Three weeks old seedlings of cabbage were transplanted on 3rd of October 2017 and 5th of October 2018 consecutively for two years. Comparative performance of four cabbage varieties over two years revealed the superiority of Pusa mukta in terms of yield, quality, and resistance to black rot. This variety produced medium, light green heads, resistant to black rot, gave an average yield of 436.57 q/ha and took 80 days to 50% harvesting. As far as earliness is concerned, Golden acre (T1) variety of cabbage was earliest among all four varieties.

Key Words: Cabbage, Earliness, Variety, Yield.

INTRODUCTION

Cabbage is the most common winter vegetable crop grown in India and it is grown on 3.1 m ha globally. Among the vegetables grown in India, cabbage ranks third in production in India and recorded 7363.07 thousand tones of cabbage production in 2017-18 (NHB, 2018). As a vegetable, cabbage has high nutritive value and high consumer's demand. It has been reported that 100 g of green edible portion of cabbage contains 92% water, 24 Kcal of food energy, 1.5 g of protein, 4.8 g of carbohydrate, 40 mg of calcium, 0.6 mg of iron, 600 IU of carotene, 0.05 mg of riboflavin, 0.3 mg of niacin and 60 mg of vitamin C. Besides, its nutritive value, it is a profitable cash crop for the farmers. Keeping in view the long winters in hilly areas the farmers are in need of early varieties which may accommodate in their farm practices, resistant to diseases and may yield well. Hence, an on farm trial was conducted at Assar block in district

Doda in the years 2017-18 and 2018-19 to evaluate different varieties of cabbage for its earliness and yield.

MATERIALS AND METHODS

An on farm trial was conducted at four locations at Assar block of district Doda to assess the yield potential of four varieties of cabbage. Four varieties of cabbage viz., Golden acre, Pride of India, Pusa mukta and Pusa early drum head were evaluated. The cabbage varieties were transplanted in the first week of October 2017 and 2018 consecutively for two years at four locations and data was pooled and analysed. The four treatments of the experiment were T1 Golden acre, T2 Pride of India, T3 Pusa mukta and T4 Early Pusa drum head. The trial was laid out in a randomized complete block design (RCBD) with four replications. Three weeks old seedlings of cabbage were transplanted on 3rd October 2017 and 5th October 2018 consecutively for two years. Farm

Table 1. Performance of cabbage varieties for growth and yield characters.

Treatment	Plant height	Net weight of head (g)	Number of days to 50% harvesting	Yield per hectare (q/ha)
Golden acre (T1)	23.69	748.04	68.00	238.67
Pride of India (T2)	25.52	800.66	78.00	384.87
Pusa mukta (T3)	24.88	864.96	80.00	436.57
Early drum head (T4)	24.70	839.69	77.25	415.75
CD at 5%	NA	44.71	2.39	23.18

yard manure and whole amount of DAP, muriate of potash were applied before final land preparation and urea was top dressed in two equal splits after transplanting. The data pertaining to plant height (cm), net weight of head (g/plant), number of days to harvesting of 50% plants, yield of cabbage (q/ha) were recorded from randomly selected 5 cabbage plants and net returns and B:C ratio were also calculated. The data were analysed by adopting the standard procedure of Panse and Sukhatme (1984) and using OPSTAT software.

RESULTS AND DISCUSSION

The experimental results regarding plant height, net weight head, number of days to 50% harvesting and yield per hectare revealed no significant difference among the treatments (varieties) regarding plant height. The highest average net weight of head (864.96g) has been observed in treatment T3 (Pusa mukta) followed by treatment T4 (Early drum head) with average net weight (839.69 g). As far as the days to 50% harvesting are concerned, treatment T1 (Golden acre) recorded the minimum days to 50% harvesting followed by treatment T4 (Early drum head). The highest yield

per hectare (436.57q) in treatment T3 (Pusa mukta) followed by treatment T4 (Early drum head).

The data indicated that cultivation of early variety of cabbage Pusa mukta (T3) gave higher net returns of Rs. 3,46,570/-ha as compared to varieties Golden acre, Pride of India and Early drum head which recorded net returns of Rs 1,63,670/-, Rs 2,99,870/- and Rs 3,46,570/-, respectively. Similarly the treatment T3 (Pusa mukta) recorded highest benefit cost ratio of 4.85:1 as compared to T1, T2 and T4 which were 3.81:1, 4.52:1 and 4.72:1, respectively. The high returns might be due higher yields and disease resistance of variety Pusa mukta.

CONCLUSION

Cabbage is an important vegetable crop in the study area in terms of location, production and utilization. The present study indicated the existence of variability among varieties in terms of earliness and yield. The comparative performance of these cabbage varieties over two years revealed the superiority of Pusa mukta in terms of yield, quality, and resistance to black rot. This culture produces medium, light green, resistance to black rot, has an

Table 2. Performance of different cabbage varieties for economic returns .

Treatment	Gross income	Cost of cultivation	Net returns	B: C Ratio
Golden acre (T1)	238670.00	75000.00	163670.00	3.81:1
Pride of India (T2)	384870.00	85000.00	299870.00	4.52:1
Pusa mukta (T3)	436570.00	90000.00	346570.00	4.85:1
Early drum head (T4)	415750.00	88000.00	327750.00	4.72:1

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average yield of 436.57 q/ha and 80 days to 50% harvesting. As far as earliness is concerned, Golden acre (T1) variety of cabbage was earliest among all four treatments and has small heads.

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