



## Comparative Evaluation of Carrot Varieties in District Mohali of Punjab

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### ABSTRACT

Carrot (*Daucus carota* L.) is one of the important root vegetable crops. Many farmers of S.A.S. Nagar (Mohali) district of Punjab grow carrot crop during Rabi season and fetch good price. Hence, the present study was carried out to evaluate three varieties of carrot in farmer's field for root yield and its component traits at eight farmers' field during Rabi 2016-17. It was revealed that traditional variety available with the farmer T1 (Farmer's practice) gave root yield of 371.25 q/ha yield whereas T2 (Punjab Black Beauty) gave 425 q/ha and T3 (Punjab Carrot Red) gave 500 q/ha. The data of the trial revealed that T3 gave maximum yield of carrot 500 (q/ha) along with the maximum B: C ratio (3.75:1).

**Key Word:** Carrot, Varieties, Evaluation, Root Yield and B:C Ratio

### INTRODUCTION

Carrot (*Daucus carota* L.) is one of the important and major root vegetable used as salad and cooked vegetable. It is a rich source of beta carotene, which is a precursor of vitamin A. The Asiatic carrots are generally red coloured because of anthocyanin pigment. The European types are orange coloured because of carotene, a precursor of vitamin A. In India mostly Asiatic type is grown probably due to appealing red colour. The consumption of vegetables per capita per day in India is 180 g against the requirement of 300g per capita per day. It indicates the necessity to raise the production of vegetables which can be achieved by bringing more area under vegetable cultivation and increasing the productivity as well. Carrot is comparatively easy to grow crop and due to its high nutritional value its demand is quite high in the market. But farmers of the district are not much aware about the suitable carrot varieties. Hence evaluations of high yielding carrot varieties with good quality are of great importance. Therefore, the present study was carried out to evaluate three carrot varieties in

terms of better yield, quality and net returns so that farmers can be advised accordingly.

### MATERIALS AND METHODS

Sahibzada Ajit Singh Nagar district (SAS Nagar district), also known as Ajitgarh district, or Mohali is district of Punjab and it falls under sub-mountainous zone 30.69°N latitude, 76.72°E longitude having an average altitude of 316 meter from the sea level. The present study was carried out in eight farmers' field during 2016-17 to evaluate three genotypes of carrot for root yield and component traits. The trial was conducted in randomized block design (RBD) with three replications and total area under each trial was 0.4 ha. The land was brought to a fine tilth by repeated ploughing and harrowing. The clods were broken and debris was removed. The soil was levelled and ridges were made for sowing. For raising crop, recommended package of practices were followed. The seeds were sown during August to September during 2016, crop thinning was done for maintaining proper plant spacing of 45 × 7.5 cm. Before fertilizer application, random soil

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**Table 1. Mean performance of different carrot varieties for root yield and growth traits.**

Treatment	Days taken for harvest	Plant length (cm)	Root length (cm)	Leaf length (cm)	Root girth (cm)	Root yield (q/ha)
T1: Farmers' practice	92	54	22	32	2.80	371.25
T2: Punjab Black Beauty	90	60	25	35	2.90	425.00
T3: Punjab Carrot Red	85	64	28	36	3.10	500.00
S E(m)	1.33	1.45	1.20	1.45	0.03	8.82
CD@0.05	5.37	5.85	NA	NA	0.13	35.56

samples were taken from the experimental sites and recommended dose of fertilizers applied as per soil test basis. The treatments included: T1: Farmers Practice, T2: Black Beauty and T3: Punjab Carrot Red. Five plants were selected randomly from each plot for recording observations. Based on the net plot yield, yield per hectare was calculated and expressed in q/ha. The cost of cultivation and gross returns were worked out by using prevailing market prices of inputs during the period of investigation. Benefit-cost ratio (BCR) was worked out by using the following formula. Benefit: Cost ratio (BCR) = Gross return (Rs/ha)/ Total cost of cultivation (Rs/ha). Statistical analysis was done using standard procedure given by Panse and Sukhatme (1985).

## RESULTS AND DISCUSSION

### Root yield and component traits

The results of the experiment revealed that highest root yield obtained from T3 (Punjab Carrot Red) which gave 500 q/ha and maximum for its contributing traits (Table1) along with the maximum B: C ratio (3.75:1) compared to T2 i.e 3.54:1 and T1 (farmers' practice) with B: C ratio of 2.52:1. These results were in conformity with those of Verma and Gupta (2005). The variety selected under Farmer's practice took ninety two days for first harvest whereas Punjab Black beauty took 90 and Punjab Carrot Red took minimum 85 days. Highest plant length was recorded in Punjab Carrot Red (64 cm) followed by Punjab Black Beauty (60 cm) and Farmer's practice (54 cm). The results are in close proximity to that of Rajan and Markos (2008). Maximum root length was recorded in

Punjab Carrot Red (28 cm) followed by Punjab Black Beauty (25 cm) and Farmer's practice (22 cm). Similar trends were also observed for leaf length which is an important growth character. In Punjab Carrot Red maximum leaf length of 36 cm was recorded followed by Punjab Black Beauty (35 cm) and Farmer's practice (32 cm). Root girth is another important trait. Punjab Carrot Red was found to be having maximum root girth of 3.10 cm followed by Punjab Black Beauty (2.90 cm) and Farmer's practice (2.80 cm). According to the opinion of Karkleliene (2008), the desirable carrot from the view point of in demand, should have root length about 18-22 cm and root diameter about 3.6-1.4 cm.

### Economics

The inputs and outputs prices of commodities prevailed during the year of demonstration were taken for calculating cost of cultivation, net returns and benefit cost ratio. Net profit per hectare will also depend upon the availability of labour and a suitable market for the disposal of produce. The results revealed (Table 2) that T3 (Punjab Carrot Red) gave highest net return of Rs. 29, 3375/-with B: C ratio of 3.75:1. The results were in line with those of Brar et al 2016, Shrichand and Jain (2008), Singh and Bankar 2006, Verma 2007 and Singh et al 2007 who concluded that quality produce gave highest net return in vegetable production.

## CONCLUSION

The results of present investigation revealed that cultivation of carrot variety Punjab Carrot Red was most suitable for cultivation in the Mohali

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**Table 2: Economic returns from different varieties of Carrot.**

Treatment	Cost of cultivation (Rs/ha)	Gross Return (Rs/ha)	Net return (Rs/ha)	B:C ratio
T1: Farmers' practice	1,06,625/-	2,97,000/-	1,79,500/-	2.52:1
T2: Punjab Black Beauty	96,000/-	3,40,000/-	2,44,000/-	3.54:1
T3: Punjab Carrot Red	1,17,500/-	4,00,000/-	2,93,375/-	3.75:1

district of Punjab as it gave highest yield along with highest returns per unit area as compared to the other varieties being grown by the farmers in the district and its market acceptability and consumer preference was quite satisfactory.

### REFERENCES

- Brar Navjot Singh, Kumar Sandeep, Thakur KS, Kumar Dharminder, Thakur Ashok Kumar, Sharma Subhash and KishorNaval (2016). Economic analysis of organic fruit and seed production of tomato (*Solanumlycopersicum* L.) under mid hill conditions. *Res. in Envt and Life Sci* **9**(3), 303-306.
- Karkleliene R (2008). Evaluation of the morphological, physiological and biochemical parameters of edible carrot (*Daucus sativus* Röhl.). *Biologia* **54**(2),101–104.
- Panse V G and Sukhatme P U (1985). *Statistical Methods for Agricultural Workers* Indian Council of Agriculture Research, New Delhi.
- Rajan and Markos B (2008). *Propagation of horticultural crops* New India Publishing Agency. New Delhi. 255 p.
- Shrichand J and Jain S K. (2008). A study of onion production and its marketing in Malwa Plateau of Madhya Pradesh. *Agric Update* **3**(3/4): 323-327.
- Singh A K and Bankar K N (2006).An economic analysis of production and marketing of cauliflower in Durg district of Chhatisgarh State. *Indian J Agric Mrkg* **59**(3):37-42.
- Singh R K, Singh R A and Mishra J P (2007). Economic study on production and marketing of hybrid tomato in Ghazipur district of Uttar Pradesh. *Indian J Agric Mrkg* **50**(3):32-36.
- Verma A R (2007). Economics of production, resource use efficiency, marketing and constraints of potato in indore district of Madhya Pradesh. *Indian J Agric Mrkg* **50**(3):21-30.
- Verma T S and Gupta A (2005).Performance of temperate carrot genotypes including F1 hybrids and varieties in multi location trials. *Indian J Agric Sci* **75**(5):298-300.

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