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Economic analysis of beet root marketing in Pune District

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Abstract
The cultivation of beet root is popular root crop grown for it fleshy roots which are used as cooked vegetable, salad and picking and canning. It is a short duration crop used profitable crop for the farmers.
The present paper entitled "Economic Analysis of Beet root Marketing in Pune District." was undertaken with the objectives viz:

i. To estimate channel wise marketing cost of beet
ii. To estimate price spread of beet marketing
iii. To examine the constraints in beet marketing.

Data for the present study were collected from two tahasils of Pune district viz., Ambegaon and junner. These tahasils were selected according to maximum area under beet. In all six villages, three villages from each tahasil were selected randomly and from six villages 90 beet farmers were selected. Beet farmers were selected on the basis of area under beet i.e. 0.01 to 0.20 ha first group, 0.21 to 0.40 second group and 0.41 ha and above third group.
All the relevant data required for study purpose was collected by survey method with the help of questionnaire designed especially for the purpose. Collection of data was done by personal interview method. Information pertaining to input utilization, marketing and constraints was collected for the year 2018-19.
For carrying the beet to distant markets packing was done in gunny bags or nylon bags. Generally transportation was done by mini truck or matador. Only one marketing channels was observed in marketing of beet viz; Producer - commission agent - wholesaler – Retailer – Consumer. In case of marketing cost incurred by producer, the transportation cost and packing cost were 40.67 and 30.02 per cent to the total marketing cost incurred by producer. The major share in marketing cost was of transportation and packing cost. Price paid by consumer was Rs. 1510.71 per quintal. The producer share in consumer rupee was 66.73 per cent. The constraints faced by farmers in marketing production were high price fluctuation, lack of market intelligence, and high commission charges.

Keywords: genetic combining ability, specific combining ability, okra, variance, growth, yield and quality

Introduction
Cultivation of vegetables plays an important role in the prosperity of a nation. The production of vegetable contributes to the health, happiness and welfare of the nation. Beet is popular root crop grown for its fleshy roots which are used as cooked vegetable, salad and for picking and canning. Young plant along with tender leaves is also used as pot herbs. Beet root is a rich source of protein (1.79/100), carbohydrates (88mg), calcium (200mg) phosphorus (55mg) and vitamin A (2100 I. U.) Thiamine (110 u.g) and ascorbic acid (50 mg / 100gm).
Beetroots main benefits are that it contains no fat, very few calories and is a great source of fiber. The best quality and root color are obtained when the air temperature ranges between 10 and 18 ºC. Abundant rainfall, nitrogen fertilizer and high temperatures provide for rapid development which leads to white rings in the interior of the beetroot. The minimum soil temperature for beet germination is 5 ºC, with an optimum range of 10 to 30 ºC, an optimum temperature of 30 ºC and a maximum temperature of 35 ºC. Beets require a cold period of 2 weeks at 4 to 10 ºC or longer to initiate flowers. Beets will tolerate frosts and mild freezes. Beets prefer deep, friable, well drained, sandy loams to silt loams. High organic matter in the soil is desirable and will help ensure an adequate moisture supply. The beet has a fairly large root system extending downward in the soil 1 m or more unless restricted.
Beet root crop is short duration crop and popular in Pune district of Maharashtra State. Keeping this view in mind the preset investigation has been outlined with following objectives.

Objectives
The scientific objectives of the study viz; Economic Analysis of Beet production in

Maharashtra is as below.
1. To estimate channel wise marketing cost of beet.
2. To estimate price spread of beet marketing.
3. To examine the constraints in beet marketing.

Methodology
The basic objective of the study is to investigate the economic aspect of production and constrain of beet root production. An attempt is made in this study to estimate the per hectare resource use and the cost of utilization of beet root by using standard cost concept used in farm management studies viz, cost 'A', cost 'B', & cost 'C' and net profit at various cost levels was worked out.

Selection of District
Pune District of Maharashtra state was selected on the basis of maximum area under beet.

Selection of tahsil
Two tahsil from Pune District viz, Ambegaon and junner was selected on the basis of maximum area under beet.

Selection of village
Three villages from each tahsil were selected on the basis of maximum area under beet cultivation. Thus, total 6 villages were selected for the study.

Selection of size groups
As the operational holding of the farmers in Pune District is very low and the beet vegetable crop is grown on small holdings, the sample cultivators was grouped into 3 groups on the basis of area under beet.
1st group: 0.01 to 0.20 ha
2nd group: 0.21 to 0.40 ha
3rd group: 0.41ha. and above

Selection of sample cultivators
The list of beet growers was obtained from the revenue record at village level. Five beet growers from each group growers from each village were selected randomly. Thus total 90 samples were selected from 6 villages. The 90 beet growers were classified as below
1st group: 0.01 to 0.20 ha: 30
2nd group: 0.21 to 0.40 ha: 30
3rd group: 0.41ha. & above: 30
Total: 90

Design of questionnaires
The specially designed questionnaires were prepared for collecting the data on production of beet.

Collection of data
Data was collected by survey method from the selected sample cultivators for the year 2018-19.

Analysis of data
The data was analyzed with simple statistic tools viz; Mean, average, percentage, marketing cost etc.

Estimation of marketing cost

Total marketing cost = $C = Ci + Cm_1 + Cm_2 + \ldots Cmn$

Where,
C = Total marketing cost
C_1 = Cost paid by the producer
Cmi = Cost incurred by the i^{th} middlemen

Results and Discussion
The beet root is popular root crop grown for its fleshy roots which are used as cooked vegetable, salad and for picking and canning. It is a short duration crop and grown in every season. The farmer can earn good income in short period if he received good prices for the beet root. Though the agronomic condition of pune district is quite favorable and there is tremendous potential for taking up commercial cultivation of this crop during all seasons, the standardization of recommended does has not been done so far under local agro-climatic conditions for its profitable cultivation.
In this section, an attempt has been made to study the marketing channels, marketing costs and problems in marketing of beet root.

Production and disposal of beet
Table 1 reveals that total quantity produced were 164.34 quintals, 126.66 quintals and 99.33 quintals in small, medium and large size groups respectively.

Table 1: Production and disposal of beet (q/farm)

Particular	Size group			Overall
	Group 1st	Group 2nd	Group 3rd	
Total Production	164.34 (100)	126.66 (100)	99.33 (100)	112.73 (100)
Home consumption	0.22 (0.13)	0.27 (0.21)	0.28 (0.28)	0.25 (0.22)
Gratis	0.28 (0.17)	0.38 (0.30)	0.39 (0.39)	0.35 (0.31)
Losses due to pest and diseases	0.37 (0.22)	0.50 (0.39)	0.62 (0.62)	0.50 (0.44)
Marketed quantity	163.47 (99.47)	125.55 (99.12)	98.04 (98.70)	111.63 (99.02)

Figures in parentheses are the percentage to the quantity produced

Out of this total production/quantity 1.43 quintals were used for home consumption for first groups, whereas 2.65 quintals and 5.29 quintals were used for home consumption for second and third groups respectively. The quantity losses due to pest and diseases were 2.14 quintals, 2.19 quintals and 5.71 quintals which accounted to 6.56 per cent, 3.63 per cent and 3.45 per cent of total produce for first, second and third groups respectively. At overall level quantity used for gratis, quantity losses due to pest and diseases were worked out to 0.09 quintals and 2.90 quintals which accounted to 0.31 per cent and 4.10 per cent, respectively.

Marketing channels of beet in selected tahsils
Marketing channels are the route through which produce moves from producer to ultimate consumer. In respect of beet, there was only one marketing channel observed in the study area. The farmers in study area sold their beet to APMC, market Manchar through commission agent. The channel is as below producer - commission agent – wholesaler – retailer - consumer.

Marketing cost and marketing margin
For selling the produce in APMC market, the seller has to pay for certain market services from sale proceeds. The marketing

expenses incurred by the beet cultivars are the expenses which are incurred after the harvest and price to the sale of beet. The expenses were incurred for several purposes like transport, unloading, weighing, commission and other purposes.

Marketing cost of beet

It is revealed from the Table 2 that, in case of beet cultivars, there was only one marketing channel was used by beet cultivator i.e. producer – commission agent – wholesaler – retailer – consumer.

The data presented in Table 2 indicate that the marketing cost incurred by commission agent was Rs.142.15 per quintal which contributes the higher share of packing charges i.e. 13.83 per cent, followed by loading 9.84 per cent of the total marketing cost. Marketing cost incurred by wholesaler was Rs 185.42 which contributes the higher share in transport charges which was 11.74 per cent.

The marketing cost incurred by retailers was Rs 175.06. Selling price of retailer is the purchasing price of consumer and it was Rs. 1510.71. The producer share in consumer rupee was 66.73 per cent.

Table 2: Channel wise marketing cost of beet (Rs/q)

Sr. No.	Particulars	Channel I P-PHC-W-R-C	Percent
1	Marketing cost incurred by producer		
i	Packing	10.52	30.02
ii	Loading	2.65	7.56
iii	Transport charges	14.25	40.67
iv	Unloading	7.62	21.75
v	Total marketing cost	35.04	100
vi	Selling price of producer	1008.08	
vii	Net price received by farmer	973.04	
2	Marketing cost incurred by commission agent		
i	Packing	35.5	13.83
ii	Loading	25.25	9.84
iii	Transport charges	25.10	9.78
iv	Unloading	17.10	6.66
v	Weighing charge	18.05	7.03
vi	Commission agent margin	21.15	8.24
vii	Total marketing cost	142.15	100.00
viii	Selling price of pre-harvest contractor	1150.23	
3	Marketing cost incurred by wholesaler		
i	Cost of packing material	27.15	7.04
ii	Loading	23.25	6.03
iii	Transport charge	45.27	11.74
iv	Unloading	36.00	9.34
v	Wholesalers margin	28.10	7.29
vi	Market cess	10.15	2.63
vii	Weighing charges	15.50	4.02
viii	Total marketing cost	185.42	100.00
ix	Selling price of wholesaler	1335.65	
4	Marketing cost incurred by retailer		
i	Shop rent	20.10	7.70
ii	Loading	35.25	13.50
iii	Transport charges	45.00	17.24
iv	Unloading	20.20	7.74
v	Weighing charges	22.36	8.57
vi	Retailers margin	32.15	12.32
vii	Total marketing cost	175.06	100
viii	Selling price of retailer	1510.71	
ix	Price paid by consumer	1510.71	
5	Producer share in consumer rupee (%)		66.73

Problems in marketing of beet

Beet is a perishable salad vegetable and therefore requires speedy and efficient marketing. This gives rise to various problems faced by the beet grower in marketing of the produce are indicated in Table 3.

From the table, it was observed that high price fluctuation was major (93.33 per cent) bottle neck in efficient marketing of beet. The 81.11 per cent farmers reported lack of market intelligence was major problem. The high commission charges as important problem, about 78.89 per cent of the farmers expressed their views concern over this. High grading cost to an extent of 77.78 per cent. About 68.89 per cent of the farmers were facing problem about the high transport cost.

Table 3: Problems in marketing of beet

Sr. No.	Particulars	Size groups			
		First	Second	Third	Overall
1.	High transport charges	22 (73.33)	21 (70.00)	19 (63.33)	62 (68.89)
2.	Grading cost	24 (80.00)	25 (83.33)	21 (70.00)	70 (77.78)
3.	High commission charges	19 (63.33)	25 (83.33)	27 (90.00)	71 (78.89)
4.	Lack of market intelligence	24 (80.00)	26 (86.67)	23 (76.67)	73 (81.11)
6.	High price fluctuation	29 (96.67)	28 (93.33)	27 (90.00)	84 (93.33)
	Total	30 (100)	30 (100)	30 (100)	90 (100)

Conclusions

From present study following conclusions are drawn.

1. The marketing channels viz; Producer – commission agent - Wholesaler – Retailer – Consumer was observed in study area for beet marketing.
2. The producer share in consumer rupee was 66.73 per cent.
3. High price fluctuations and lack of marketing intelligence were the major constraint in marketing of beet.

Suggestions

The following suggestions were emerged out on the basis of the conclusions of the present study.

1. Commission charges and transport cost forms a major part of the marketing cost. Steps may be taken at the government level to regularize the commission charges and transport charges. For this purpose, the monopoly of the transport agencies should be broken and controlled rate be informed.
2. Beet processing units should be established on co-operative basis in study area so as to fetch good prices to the producer.
3. The cultivation of beet be popularized among the small and marginal farmers as they fetch good returns to the cultivators in short period and less capital investment's

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