

## “Economics of Production of Rabi Onion (*Allium Cepa*) in Wardha District”

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**ABSTRACT:** The study has been undertaken in Wardha district for the year 2011-12. The standard cost concept was used for working out cost and returns. The Cobb-Douglas production function was used to study the resource use efficiency. The per hectare cost of cultivation of small farmers at cost 'C' was Rs.113900.72, Per hectare cost of cultivation of medium farmers at cost 'C' was Rs. 110066.23 and Per hectare cost of cultivation of large group farmers at cost 'C' was Rs. 121782.02. The per hectare cost of cultivation for overall level at cost 'A', cost 'B' and cost 'C' were Rs.58468.46, Rs.104584.95 and Rs. 114282.99 respectively. At overall level average gross return worked out to Rs. 155380.01. At overall level the input output ratio at cost 'C' was 1:2.36. In small size group, the regression coefficient of seed and nitrogen was significant at five per cent level, other variables were non-significant. In medium size group the regression coefficient of seed was significant at one per cent level, other variables found non-significant. In large size group manure and nitrogen was significant at five per cent level and phosphorus was significant at one per cent level, other variables show non-significant. At overall level seed and nitrogen were significant at five percent level, other variables showed non-significant result. At overall level marginal value of product to the factor cost ratio of bullock labour, seeds, manure, phosphorus and machinery was less than one that means there is scope to increase the level of these input in onion production.

**Key words:** “Economics of production, Rabi onion, Wardha district.

### INTRODUCTION

Onion (*Allium cepa*) is an indispensable item in every kitchen as condiment and vegetable which plays a pivotal role in human diet. It is used either in raw form or dehydrated form to add flavor and taste to Indian cuisine. Onion accounts for 77 per cent of total foreign exchange among fresh vegetable. The area, production and productivity of onion in India were about 1,042.50 thousand hectares, 15748.30 thousand metric tonnes and 15110 kg/ per hectare respectively in the year 2011-12. India's onion export has made a gradual growth during last four and half decades. Onion is a major item of agricultural exports, earning valuable foreign exchange to the country. Onion accounts for 67 per cent of total foreign exchange among fresh vegetable.

There are many problems in production and marketing of onion. Onion is demanded throughout the world in all the seasons, irrespective of its prices. Due to seasonal and semi-perishable nature of onion, there are wide fluctuations in prices both month to month and year to year. It adversely affects the economy of the onion grower. Assured reasonable price for the onion is an important demand of onion growers by regulating flow of onion in the state. In addition to above factors, number of middlemen, types of market structure, number of sellers and buyers also affect price level. The onion is not stored for long period. The best varieties which are having good keeping quality are not developed. The export quality onion is not produced on large scale. In onion production use of production technologies, allocation of resources, minimization of cost and

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to attend maximum profit are very important aspects.

In Maharashtra, onion is grown in all the three seasons. However, it is predominantly a winter crop. Generally, the onion growers bring their produce to market for sale immediately after the harvest, because of lack of storage facilities and financial problems of onion growers. This result in glut of onion in market and fall in market prices of the onion. Sometimes, the market rate will reach a record low as less than one rupee per kilogram. Then it becomes very difficult for onion growers even to meet the transportation charges. This situation is creating discontent among the farmers giving rise to their agitation for the fair market price.

However, production of onion fluctuates from year to year. The low production results in hike of price which creates discomfort among consumers. The middlemen are taking undue advantage of this situation and exploiting both producers and consumer being and also the economy of growers indicating a scope for its cultivation. The area, production, and productivity of onion in Maharashtra was about 359.00 thousand hectares, 5036.00 thousand metric tonnes and 14030 kg/per hectare respectively in the year 2011-12. In Vidarbha region onion grown district are Wardha, Akola, Amaravati, Bhandara, Buldhana, Chandrapur, Nagpur and Yavatmal etc. It is grown mainly in winter season as a second crop after harvest of Kharif crop and sown in the month of December to January and ready to harvest during April to May. In Vidarbha region there are eight districts having area, production and productivity about 1203 hectare, 14000 metric tonnes and 12000 kg/hectare respectively in the year 2011-12 (Joint Director Office, Nagpur). In Wardha districts it is becoming more popular as cash crop. The area, production and productivity of onion in Wardha district was about 465 hectare, 5580 metric tonnes and 12000 Kg/per hectare respectively in the year 2011-12.

In this study an attempt shall be made to investigate into the problems of both production and marketing of onion in selected area of Wardha district. The present study shall provide details about the existing level of utilization of different inputs like labour, irrigation, fertilizers, manures etc. Every onion cultivator maintains a small nursery and transplant the seedling at appropriate time, raising of seedling is a major item of cost of production of onion. Per hectare cost and returns, market margin and price spread analysis shall be worked out for onion which

is commercially important for onion growers in Wardha districts. The study will be helpful to administrators to know whether the crop is profitable or not and to take suitable action to improve the profitability of crop by extending the help to cultivators in the form of technical advice, supply of inputs to them. The study also gives guideline to extension workers to explain the farmers regarding profitability of the crop.

#### **SCOPE AND UTILITY**

In this study an attempt has been made to evaluate various aspects of onion production. The finding of this study could be gainfully utilized by the administrators, policy makers, scientists and extension workers to know about the status of onion growers and to make the cultivation of onion more profitable and economical. Generally many cultivators have no proper storage facility and hence cultivators compelled to sell their produce at low price during the harvest time., likewise other crop minimum support price are not fixed and there is no regular price support scheme for onion. However, in a high production period, if there is glut in market the Government of India declares minimum support price on request of state Government.

Effort of organization like the National Agricultural Co-operative Marketing Federation (NAFED) is diverted towards improvement in efficiency of marketing. NAFED has promoted a research farm at Sinnar which has developed a new variety of less pungent yellow onion which is suitable for export to Europe and Japan.

#### **MATERIALS AND METHOD**

The study was undertaken in Wardha district of Vidarbha region. Out of eight tahsils in Wardha district two tahsils were selected on the basis of highest area under cultivation namely Arvi and Wardha. From each tahsil three villages were selected purposively, on the basis of highest area under rabi onion cultivation the selected villages were namely, Arvi, Jalgaon, Wardhemaneri, Paloti, Waigaon and Goji from each village 15 farmers were selected randomly. At overall 90 farmers were selected for the present study. The selected farmers were personally contacted and data were collected from them in the schedule for the year 2011-12. Survey method was followed for the data collection. Information pertaining to level of utilization of different inputs, expenditure, yields, problems faced by onion grower's, output price and other relevant information

were collected through a survey method with the help of pre-tested questionnaire. The data on marketing transaction along with the margins were obtained from different market agencies. Similarly, the data on purchase price, expenses and margins obtained in the marketing of onion were collected from village merchants, commission agents, wholesalers, retailers in Wardha market. This data were use for estimating market cost as well as price spread in marketing in the area under study.

Simple tabular analysis was carried out to work out level of input utilized, cost of cultivation and returns from onion crop. The expenditure incurred by the selected farmer on growing crop was worked out by using the standard cost concepts. Economics of onion were worked out by using standard cost concept. i.e. cost 'A', cost 'B', cost 'C'

The regression analysis is help in the predicting the value of dependent variable with the help of independent variable's. Numbers of function were fitted. The best fit was decided on the basis of significance of (1) partial regression coefficient's, (2) coefficients of determination ( $R^2$ ) and error sum of square was minimum.

Among all the Cobb-Douglas production function was found to be best fit as partial regression coefficient and coefficients of determination ( $R^2$ ) was significant and error sum of square was minimum.

The transformation of inputs into output is described by the production function. The production function can be specified as follows

$$Y = f(X_1, X_2, X_3, \dots, X_n)$$

Where, Y is per ha. output of a particular crop with a given set of inputs  $X_1, X_2, X_3, \dots, X_n$  per ha.. In simple words production function can be defined as Mathematical and technical relationship existing between the input and output. In functional analysis, it would be essential to choose an appropriate form of production function taking into consideration the data to be analyzed.

The Cobb-Douglas type of production function was used specify as follows.

$$Y = ax_1^{b_1} \times x_2^{b_2} \times x_3^{b_3} \times x_4^{b_4} \times x_5^{b_5} \times x_6^{b_6} \times x_7^{b_7}$$

Where,

Y = Yield in quintals/ hectare.

a = Intercept of production function

( $b_1, b_2, b_3, b_4, b_5, b_6, b_7$ ) = Partial regression coefficients of the respective resource variable

$X_1$  = Human labour in (Days)

$X_2$  = Bullock labour in (Days)

$X_3$  = Machine labour in (hours)

$X_4$  = Seed (kg)

$X_5$  = Manure (qtl)

$X_6$  = Nitrogen (N) (Kg)

$X_7$  = Phosphorus (P) (Kg)

Cobb-Douglas production function as given above estimated for input-output data to study the combination of variables and resource productivity.

Marginal value product of particular resources represent the “expected addition of one unit of that resource while other inputs are held constant.” to the marginal factor cost.

$$MVP = b_i \frac{GM(Y_i)}{GM(x_i)}$$

Where

$b_i$  = The elasticity of output with respect to  $x_i$

$GM(x_i)$  = Geometric mean of inputs  $X_i$

$GM(Y_i)$  = Geometric mean of output  $Y_i$

## RESULT AND DISCUSSION

### Per hectare cost of cultivation of rabi onion

The share of each items the total cost provides necessary due to economizing costs. The cost has determined on the basis of standard cost concept i.e. cost 'A', cost 'B', cost 'C' the different cost concepts have different utilities in research. The per hectare cost of cultivation of rabi onion grown by the small farmers is presented in Table 1 (a).

It is revealed from the Table 1 (a) that the per hectare cost of cultivation of rabi onion for small farmer highest at cost 'A', cost 'B' and cost 'C' were Rs. 57327.92, Rs. 102602.04 and Rs. 113900.72 respectively. The major share of cost of cultivation goes towards cost 'A' (50.33 per cent). In cost 'A' highest share was contributed by hired human labour (19.71 per cent) followed by seed (9.10 per cent), manure (4.82 per cent), irrigation (3.95 per cent) machine hours (3.63 per cent) bullock labour (2.50 per cent) and fertilizer (2.45 per cent) indicating that, all the above inputs are cash inputs for which farmers required to pay immediately from his pocket. Cost 'B' contributes to 90.08 per cent. The share of family labour was 9.92 per cent. The per hectare yield obtained by small farmers was 228.68 quintals with gross return of Rs. 264883.72. In case of small size group the per quintal cost of production was Rs. 498.08.

**Table 1 (a)**  
**Per hectare cost of cultivation of rabi onion (small farmers)(Rs/ha)**

Sr. No.	Particulars	Unit	Unites required	Price per unit	Cost in Rs.	Per cent to total	
1	Hired Human Labour	Male	Days	103.26	147.54	15234.11	13.37
		Female	Days	83.02	86.90	7214.44	2.72
		Total	Days	186.28	120.51	22448.55	19.71
2	Bullock Labour	Hired	Days	0.70	350.00	244.38	0.21
		Owned	Days	7.44	350.00	2604.65	2.29
		Total	Days	8.14	350.00	2849.03	2.50
3	Machine	Hired	Hrs	8.20	473.70	3884.34	3.41
		Owned	Hrs	0.52	473.70	246.32	0.22
		Total	Hrs	8.72	473.70	4130.66	3.63
4	Seeds	Kg.	10.66	972.01	10361.63	9.10	
5	Manure	Qtls.	77.13	71.11	5484.50	4.82	
6	Fertilizer	N	Kg.	93.88	18.81	1765.81	1.55
		P	Kg.	43.72	23.38	1022.20	0.90
		K	Kg.	0.00	0.00	0.00	0.00
		Total				2788.01	2.45
7	Irrigation	Rs.			4500.91	3.95	
8	Incidental	Rs.			80.11	0.07	
9	Insecticide	Rs.			1216.28	1.07	
10	Repairs	Rs.			400.42	0.35	
11	Depreciation	Rs.			750.21	0.66	
12	Land Revenue	Rs.			74.00	0.06	
13	Int. On Work. Cap. @ 7%	Rs.			2243.61	1.97	
14	COST "A"	Rs.			57327.92	50.33	
15	Rental Value Of Land	Rs.			44073.29	38.69	
16	Int. On Fixed Cap. @ 10%	Rs.			1200.84	1.05	
17	COST "B"	Rs.			102602.04	90.08	
18	Family Labour	Male	Days	38.68	147.54	5707.21	5.01
		Female	Days	64.34	86.90	5591.47	4.91
		Total	Days	103.02	109.67	11298.68	9.92
19	COST "C"	Rs.			113900.72	100.00	
20	Yield	Main	Qtls.	228.68	1158.32	264883.72	
21	Per Qtl. Cost of Production				498.08		

The per hectare cost of cultivation of rabi onion grown by the medium group farmers is presented in Table 1 (b). It is revealed from the Table 1 (b) that the per hectare cost of cultivation of rabi onion of medium farmer at cost 'A', cost 'B' and cost 'C' were Rs. 57645.06, Rs. 101757.39 and Rs. 110066.23 respectively. The major share of cost of cultivation goes towards cost 'A' (52.37 per cent). In cost 'A' highest share was contributed by hired human labour (22.25 per cent) followed by seed (8.20 per cent), machine hours (4.62

per cent), irrigation (4.18 per cent), manure (3.65 per cent), bullock charge (2.65 per cent) and fertilizer (2.61 per cent) indicating that, all the above inputs are cash inputs for which farmers required to pay immediately from his pocket. Cost 'B' contributes to 92.45 per cent. The share of family labour was 7.55 per cent. The per hectare yield obtained by medium farmers was 224.82 quintals with gross return of Rs. 257553.57 In case of medium size group the per quintal cost of production was Rs. 489.57.

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**Table 1 (b)**  
Per hectare cost of cultivation of rabi onion (medium farmers) (Rs/ha)

Sr. No.	Particulars		Unit	Unites required	Price per unit	Cost in Rs.	Per cent to total
1	Hired Human Labour	Male	Days	106.00	150.98	16014.29	14.55
		Female	Days	90.89	93.21	8472.32	3.29
		Total	Days	196.89	124.37	24486.61	22.25
2	Bullock Labour	Hired	Days	0.18	370.93	66.24	0.06
		Owned	Days	7.68	370.93	2849.21	2.59
		Total	Days	7.86	370.92	2915.45	2.65
3	Machine	Hired	Hrs	9.82	499.09	4903.00	4.45
		Owned	Hrs	0.36	499.09	177.75	0.16
		Total	Hrs	10.18	499.09	5080.75	4.62
4	Seeds		Kg.	9.82	919.59	9030.36	8.20
5	Manure		Qtls.	63.36	63.41	4017.86	3.65
6	Fertilizer	N	Kg.	96.52	18.81	1815.50	1.65
		P	Kg.	45.36	23.38	1060.45	0.96
		K	Kg.	0.00	0.00	0.00	0.00
		Total					2875.95
7	Irrigation		Rs.			4600.00	4.18
8	Incidental		Rs.			84.68	0.08
9	Insecticide		Rs.			1160.71	1.05
10	Repairs		Rs.			491.07	0.45
11	Depreciation		Rs.			912.36	0.83
12	Land Revenue		Rs.			74.00	0.07
13	Int. On Work. Cap. @ 7%		Rs.			1915.26	1.74
14	COST "A"		Rs.			57645.06	52.37
15	Rental Value of Land		Rs.			42851.60	38.93
16	Int. on Fixed Cap. @ 10%		Rs.			1260.73	1.15
17	COST "B"		Rs.			101757.39	92.45
18	Family Labour Charges	Male	Days	29.73	150.98	4488.84	4.08
		Female	Days	40.98	93.21	3820.00	3.47
		Total	Days	70.71	117.51	8308.84	7.55
19	COST "C"		Rs.			110066.23	100.00
20	Yield	Main	Qtls.	224.82	1145.60	257553.57	
21	Per Qtl. Cost of Production					489.57	

The per hectare cost of cultivation of rabi onion grown by the large group farmers is presented in Table 1 (c). It is revealed from the Table 1 (c) that the per hectare cost of cultivation of rabi onion for large farmer at cost 'A', cost 'B' and cost 'C' were Rs. 63091.85, Rs.112950.55 and Rs. 121782.02 respectively. The major share of cost of cultivation goes towards cost 'A' (51.81 per cent). In cost 'A' highest share accounted by hired human labour (22.21 per cent) followed by seed (7.88 per cent), machine hours (4.48 per cent) irrigation (4.07 per

cent) manure (3.85 per cent), bullock labour (2.75 per cent) and fertilizers (2.45 per cent), indicating that, all the above inputs are cash inputs for which farmers required to pay immediately from his pocket. Cost 'B' contributes to 92.75 per cent. The share of family labour was 7.25 per cent. The per hectare yield obtained by large group farmers was 232 quintals with gross return of Rs. 291911.76. In case of large size group the per quintal cost of production was Rs. 524.92.

**Table 1 (c)**  
**Per hectare cost of cultivation of rabi onion (large farmers) (Rs/ha)**

Sr. No.	Particulars	Unit	Unites required	Price per unit	Cost in Rs.	Per cent to total	
1	Hired Human Labour	Male	Days	109.41	152.66	16702.94	13.72
		Female	Days	105.29	98.30	10350.00	3.55
		Total	Days	214.70	126.00	27052.94	22.21
2	Bullock Labour	Hired	Days	0.59	405.77	238.60	0.20
		Owned	Days	7.65	405.77	3104.94	2.55
		Total	Days	8.24	405.77	3343.54	2.75
3	Machine	Hired	Hrs	10.15	501.45	5088.00	4.18
		Owned	Hrs	0.74	501.45	372.81	0.31
		Total	Hrs	10.89	501.45	5460.81	4.48
4	Seeds	Kg.	9.71	987.91	9592.65	7.88	
5	Manure	Qtls.	66.18	70.77	4683.82	3.85	
6	Fertilizer	N	Kg.	97.21	18.81	1828.44	1.50
		P	Kg.	49.56	23.38	1158.69	0.95
		K	Kg.	0.00	0.00	0.00	0.00
		Total				2987.13	2.45
7	Irrigation	Rs.			4961.11	4.07	
8	Incidental	Rs.			87.78	0.07	
9	Insecticide	Rs.			1219.85	1.00	
10	Repairs	Rs.			608.33	0.50	
11	Depreciation	Rs.			920.18	0.76	
12	Land Revenue	Rs.			74.00	0.06	
13	Int. on Work. Cap. @ 7%	Rs.			2099.71	1.72	
14	COST "A"	Rs.			63091.85	51.81	
15	Rental Value Of Land	Rs.			48577.96	39.89	
16	Int. On Fixed Cap. @ 10%	Rs.			1280.74	1.05	
17	COST "B"	Rs.			112950.55	92.75	
18	Family Labour Charges	Male	Days	30.29	152.66	4624.71	3.80
		Female	Days	42.79	98.30	4206.76	3.45
		Total	Days	73.08	120.85	8831.47	7.25
19	COST "C"	Rs.			121782.02	100.00	
20	Yield	Main	Qtls.	232.00	1258.24	291911.76	
21	Per qtl. Cost of Production				524.92		

The per hectare cost of cultivation of rabi onion grown by the overall 90 farmers is presented in Table 1 (d). It is revealed from the table 1 (d) that the per hectare cost of cultivation of rabi onion for overall level at cost 'A', cost 'B' and cost 'C' were Rs.58468.46, Rs.104584.95 and Rs.114282.99 respectively. The major share of cost of cultivation goes towards cost 'A' (51.16 per cent). In cost 'A' highest accounted by hired human labour (21.09 per cent) followed by seed (8.50 per cent), manure (4.18 per cent), machine hours (4.16 per cent), irrigation

(4.05 per cent) bullock labour (2.61 per cent) and fertilizers (2.51 per cent), indicating that, all the above inputs are cash inputs for which farmers required to pay immediately from his pocket. Cost 'B' contributes to 91.51 per cent. The share of family labour was 8.49 per cent. The per hectare yield obtained by all farmers was 229.38 quintals with gross return of Rs. 269663. In case of overall size group per quintal cost of production was Rs. 498.23.

**Table 1 (d)**  
Per hectare cost of cultivation of rabi onion at overall level (Rs/ha)

Sr. No.	Particulars		Unit	Unites required	Price per unit	Cost in Rs.	Per cent to total
1	Hired Human Labour	Male	Days	105.63	149.67	15809.64	13.83
		Female	Days	90.77	91.34	8290.93	3.07
		Total	Days	196.40	122.71	24100.57	21.09
2	Bullock Labour	Hired	Days	0.48	370.12	174.87	0.15
		Owned	Days	7.57	370.12	2804.58	2.45
		Total	Days	8.05	370.12	2979.45	2.61
3	Machine	Hired	Hrs	9.21	489.87	4511.70	3.95
		Owned	Hrs	0.50	489.87	244.94	0.21
		Total	Hrs	9.71	489.87	4756.64	4.16
4	Seeds		Kg.	10.14	957.58	9709.87	8.50
5	Manure		Qtls.	69.74	68.50	4776.96	4.18
6	Fertilizer	N	Kg.	95.56	18.81	1797.60	1.57
		P	Kg.	45.59	23.38	1066.09	0.93
		K	Kg.	0.00	0.00	0.00	0.00
		Total					2863.69
7	Irrigation		Rs.			4629.33	4.05
8	Incidental		Rs.			83.07	0.07
9	Insecticide		Rs.			1196.92	1.05
10	Repairs		Rs.			445.33	0.39
11	Depreciation		Rs.			908.92	0.80
12	Land Revenue		Rs.			74.00	0.06
13	Int. on Work. Cap. @ 7%		Rs.			1943.71	1.70
14	COST "A"		Rs.			58468.46	51.16
15	Rental Value Of Land		Rs.			44869.83	39.26
16	Int. On Fixed Cap. @ 10%		Rs.			1246.66	1.09
17	COST "B"		Rs.			104584.95	91.51
18	Family Labour Charges	Male	Days	33.59	149.67	5027.37	4.40
		Female	Days	51.13	91.34	4670.67	4.09
		Total	Days	84.72	114.47	9698.04	8.49
19	COST "C"		Rs.			114282.99	100.00
20	Yield	Main	Qtls.	229.38	1175.62	269663.00	
21	Per Qtl. Cost of Production					498.23	

**Per hectare cost and return from rabi onion**

The cost and return structure per hectare of agricultural production, helps the farmer in mapping adjustment in the organization and thereby secure the optimum level of production and income. The per hectare cost and returns from onion was presented in Table 2.

It is revealed that (Table 2) at overall average gross return worked out to Rs. 269663.00. The net return obtained at various costs were Rs. 211194.54 at cost

'A', Rs. 165078.05 at cost 'B' 155380.01 at cost 'C'. This means onion crop appeared to be good for monetary benefits. The highest input output ratio at cost 'C' was recorded in large size group i.e. 1:2.40 and lowest input output ratio at cost 'C' was recorded small size group i.e 1:2.33. At overall level the input output ratio at cost 'C' was 1:2.36. The input output ratio which is an indicator of economic efficiency in crop production for the crop and other discussion indicated that onion registered a input output ratio 1:2.40 means this is profitable crop.

**Table 2**  
**Per hectare cost and returns from rabi onion. (Rs/qt.)**

Sr. No.	Particulars	Size group			
		Small	Medium	Large	Overall
1	Yield (Qtls.)	228.68	224.82	232.00	229.38
2	Value Main Produce	264883.72	257553.57	291911.76	269663.00
3	Total Produce	264883.72	257553.57	291911.76	269663.00
4	Total Cost				
	Cost 'A'	57327.92	57645.06	63091.85	58468.46
	Cost 'B'	102602.04	101757.39	112950.55	104584.95
	Cost 'C'	113900.72	110066.23	121782.02	114282.99
5	Net Return Over				
	Cost 'A'	207555.80	199908.51	228819.91	211194.54
	Cost 'B'	162281.68	155796.18	178961.21	165078.05
	Cost 'C'	150983.00	147487.34	170129.74	155380.01
6	Input- Output ratio at				
	Cost 'A'	4.62	4.47	4.63	4.61
	Cost 'B'	2.58	2.53	2.58	2.58
	Cost 'C'	2.33	2.34	2.40	2.36

## CONCLUSION

The per hectare cost of cultivation of small farmers at cost 'C' was Rs.113900.72, Per hectare cost of cultivation of medium farmers at cost 'C' was Rs. 110066.23 and Per hectare cost of cultivation of large group farmers at cost 'C' was Rs. 121782.02. The per hectare cost of cultivation for overall level at cost 'A', cost 'B' and cost 'C' were Rs.58468.46, Rs.104584.95 and Rs. 114282.99 respectively. At overall level average gross return worked out to Rs. 155380.01. At overall level the input output ratio at cost 'C' was 1:2.36 means this is profitable crop. At overall level marginal value of product to the factor cost ratio of bullock labour, seeds, manure, phosphorus and machinery was less than one that means there is scope to increase the level of these input in onion production.

## REFERENCES

- Babar, V. S., (1983), Productivity and optimization and resource use in onion in Maharashtra. M.Sc. (Agri.) Thesis, Submitted to Mahatma PhuleKrishiVidyapeeth, Rahuri.
- Balappa, S. R. and L. B. Hugas., (2003), An economic evaluation of onion production and its marketing system in Karnataka. Agril. Mktg, 22-24.
- Barakade. A. J., Lokhande. T. N and G. V. Todakari., (2011), Economics of onion cultivation and its marketing pattern in Satara District of Maharashtra. International J. of Agril. sciences. Vol.(3), PP-110-117.
- Chohan, T. Z., and K. N. Saddozai, (2008), An investigation into cost and revenue of onion production in Azad Jammu Kashmir. Sarhad Journal of Agriculture. 24: 4, 737-743.
- Haque. M. A., Monayam Miah, Hossain .S., Rehman. M. S., and Moniruzzaman. (2011), Profitability of onion cultivation in some selected areas of Bangladesh. Bangladesh jn. Agril. Res. 36(3). 427-435.
- Hinge, B. J., N. S. Lohar, S. D. Bansode, S. K. Gore and J. R. Gune., (1983), A study of cost of cultivation and marketing of kharif onion in the vicinity of Lonand market. In: Agric. Sub-committee report (Agril. Econ.), Mahatma PhuleKrishiVidyapeeth, Rahuri: 170-173.
- Mohapatra, S. C., (1999), Production and marketing of onion in Bolangir district of Orissa. Indian J. Agric. Mktg, 13(1): 40-43.
- Pokharkar. V. G.,Kasar. D. V., Kakad B.S. and D. B. Yadav., (2002), Economics of Marketing of Rabi onion in Pune districts , 4<sup>th</sup> national seminar of Nagpur. Pp. 11.
- Shah Deepak., (1999), An economic evaluation of onion production and its marketing in Maharashtra. Indian J. Agric. Mktg, 13(3): 11-20.
- ShrichandJat and S. K.Jain., (2008), A study of Onion Production and its Marketing in Malwa Plateau of Madhya Pradesh.Hind Agril. Horticultural Society, 3 (3&4): 323-327.
- Tayade, B. M., T. G. Pawar and V. R. Kachare., (1992), Study of cost of cultivation and marketing of onion in Nashik district, In: Agric. Sub-committee report (Agril. Econ.), Mahatma Phule Krishi Vidyapeeth, Rahuri: 61-68.