

RESEARCH ARTICLE :

Constraints severity index of onion growers and their correlation with regards to cultivation, storage and market in Buldhana district of Vidarbha region

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ARTICLE CHRONICLE :

Received :

11.07.2017;

Accepted :

25.08.2017

KEY WORDS :

Constraint analysis,
cultivation practices,
Storage and market of
Onion

SUMMARY : Constraints Analysis is essential to induce knowledge and adoption of any growers. The present study was therefore designed to ascertain the Constraint Analysis of Onion growers in Buldhana District. Result of this study revealed that near about half (46.67%) of the respondents comes under medium level of constraints severity index.. Similarly in case of the practice wise knowledge and adoption of the onion growers it was observed that there are various practices of onion crop about them respondents analysis of constraints like spraying of mallic Hydrazide, to identify major diseases of onion crop, plant protection measures against onion diseases, improved storage practices of onion, important intercultural operation recommended for onion crop, different storage methods of onion, plant protection measures against onion pests, irrigation water management and identification of major pests of onion crop. Hence the study imply that the extension functionaries should arrange farm field school, Krishi melawa, training programme about onion crop production as well as result demonstration and cover the above explained constraints analysis areas of onion crops, that will also help for raising knowledge and adoption of this practices. While the studying the constraints majority of the respondents reported that they got low prices in market after immediate harvest and non availability of improved storage methods of onion bulb as well as irregular supply of electricity hence the study suggest that Govt. should provide storage facilities near the vicinity and also provide remunerative prices as well as regular supply of electricity to the onion growers.

How to cite this article : Jangwad, N.P., Salame, S.P., Wakale, P.K., Rathod, Trupti and Khandvi, R.C. (2017). Constraints severity index of onion growers and their correlation with regards to cultivation, storage and market in Buldhana district of Vidarbha region. *Agric. Update*, 12 (TECHSEAR-10) : 2775-2779.

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BACKGROUND AND OBJECTIVES

Onion is one of the most important bulbus vegetable and it is commonly grown in India from ancient time. It belongs to genus: *Allium* species: *Cepa*.

Total area under vegetable in Maharashtra is 611000 hectares and production is 7504 metric tones. Maharashtra has the largest area under onion and have a bumper production. The area under onion cultivation is 415 lakh ha total production is

4905 metric tonnes. The per cent share in production of all India is 33 per cent. In Maharashtra, Nashik, Jalgaon, Ahmednagar, Pune, Sangli, Satara and Solapur are the major onion growing districts. The Nashik region in Maharashtra account 30 per cent of the total production (National Horticulture Board: 2010-11).

In case of Vidarbha region, it is considered as major vegetable crop. Total area under onion in Vidarbha region is 0.96 lakh ha and total production is 1.57 lakh tonnes. In Vidarbha region Amravati stands first in total production of onion. In case of Buldhana total area under onion cultivation is 2433.6 ha and total Production of 73 metric tonnes. (District Agricultural Office Buldhana: 2010-11)

The present storage capacity for onion is about 4.6 lakh tonnes. This is quite inadequate compared to our total production. Even most of the structures available are traditional and unscientific. If 40 % of the stocks are earmarked for scientific storage the potential for new storage structures is about 12.6 lakh tonnes. However, it has been projected by the Expert Committee on Cold Storage and Onion Storage that about 1.5 lakh tonnes on-farm capacity in production areas and 3.0 lakh tonnes capacity at APMCs and other market places are required in next 5 years. Thus there remains a vast potential to be tapped.

Most of the farmers bring onion directly to the market after harvest as proper storage facilities are not available with them. The present storage capacities are quite inadequate and most of the available units are traditional and unscientific. Fearing losses, farmers usually unload their entire stock within a month of harvest. As a result, during this period prices rule very low due to glut situation. Thereafter, the rise in prices is quite rapid and sometimes wide fluctuations occur leading to dissatisfaction amongst the producers as well as consumers. To improve the situation, GOI desired to create appropriate storage structures for onion, both at farm level as well as at market places. It drew a capital subsidy programme for the infrastructure development in which a pivotal role has been assigned to NABARD for its successful implementation. It has been planned to create a storage capacity of 4.5 lakh tonnes of onion during 1999-2000 and 2000-2001 through capital investment subsidy programme. Subsidy to the extent of 25% of the investment cost subject to a maximum of Rs. 500 per tonne has been proposed to be routed through NABARD for the credit delivery system.

Maharashtra state produces 25-30 % onion of the total production of the country. Maharashtra state contributes about 80-85 % in the total onion export. Out of the total onion production in the state, 10-15% onion production is in kharif season, 30-40% production is in Late Kharif and 50-60% production is in Rabi/Summer season.

The cultivation of onion, in Vidarbha region, is mostly concentrated in six districts viz., Akola, Buldhana, Nagpur, Amravati and Yavatmal. Different varieties and technologies in onion, suiting to the need of the farmer of the region are evolved and recommended by the university to boost up the yield of onions.

RESOURCES AND METHODS

The present study was carried out in Buldhana district of Vidarbha region in Maharashtra state. Out of thirteen Panchayat samiti three Panchayat samiti namely Khamgaon, Buldhana and Nandura were purposively selected because of larger area under onion crop in Buldhana district with exploratory design of social research. The list of villages having cultivation of onion crop was obtained from the office of three Panchayat samiti. Out of the villages included in the list of five villages per Panchayat samiti were selected purposively based on the criterion of maximum area under onion crop. The selected villages were namely Pimprigavali, Pimpalgaonraja, Palashbudruk, Dhorapgaon, Poraj, Deulghat, Ruikhed, Sakhali budruk, Padali, Birsingpur, Nimgaon, Dhanora budruk, Isabpur, Wadali and Narkhed.

From these selected villages, the list of onion growers who grew onion for last three years were obtained from village level worker and from the list obtained proportionate number of farmers per village was selected by adopting proportionate random sampling method. Thus in all 150 onion growers were selected as respondents who constituted the sample for the purpose of present study.

Data were collected by contacting the selected farmers personally on their farms and homes, as per their convenience by using interview schedule. With the help of Sarpanch and village leader was taken for approaching to farmers. The data were collected from all the 150 farmers.

Measurement of constraints severity index :

The oxford Dictionary meaning of the term

constraints is confinement, restriction of liberty or compulsion of circumstances or compulsion put upon the behaviour.

Reading (1971) defined constraints as use of force to influence or prevent as action or quality or state of being compelled to do or not to do something.

Constraints refer to the difficulties faced by farmers while he becomes cultivation, storage and marketing of onion crop practices.

The present study, constraints have been operationally defined as the problems encountered by the respondent with regards to the cultivation, storage and marketing of onion crop practices.

The 150 selected respondents were asked to indicate against each constraint whether constraints faced or not faced by them. The weightages given to these response categories were 2 and 1, respectively. Ranking of each of the constraint was worked out from the opinion of 150 respondents then mean score was calculated and rank was done accordingly.

$$\text{Constraints severity index} = \frac{\text{Obtained constraints severity score}}{\text{Obtainable constraint severity}}$$

Further the classification of constraints were done taking into consideration constraint index and forming three categories I. e. Low, Medium and High. The respondents were categorized on the basis of mean and standard deviation.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads :

Constraints severity index :

Farmers according to constraints faced by recommended cultivation practices of onion cultivation :

On the basis of data from the table 1 revealed that near about half of the respondents (46.66%) were observed in medium constraint level. However, 43.33 per cent of the respondents had low constraint level and 10 per cent of the respondents had high constraint level.

On the basis of result obtained during the present investigation, it was concluded that the various constraints

Table 1: Distribution of the respondents according to their constraints severity index

Sr. No.	Category	Respondents(n=150)	
		Frequency	Percentage
1	Low (Upto 33.34)	65	43.33
2	Medium (33.35 to 66.66)	70	46.67
3	High (Above 66.66)	15	10.00
	Total	150	100.00

Table 2: Distribution of the respondents according to their constraints encountered by them in cultivation of onion

Sr.No.	Constraints	Frequency (n=150)	Percentage
A)	Input Supply		
1.	Inadequate availability of improved seed and seedlings in time	83	55.33
2.	Inadequate availability of FYM	41	27.33
B)	Technical Constraints		
	Irregular supply of electricity	80	53.33
C)	Financial Constraints		
1.	High cost of improved variety seeds, fertilizers and insecticides	24	16.00
2.	Inadequate sources of finance for agriculture	32	21.33
D)	Labour constraints		
1.	Non-availability of labour at the time of transplanting and harvesting	28	18.66
2.	High wages of labour	33	22.00
E)	Storage Constraints		
1.	Non availability of storage facilities	50	33.33
F)	Market constraints		
1.	Low price to onion crop	97	64.66

can differ from area to area as well as crop to crop. Therefore, in case of onion growers, the maximum number of respondents (46.67%) were found in the medium constraints level as compared to other *i.e.* low (43.33%) and High (10%). It was concluded that in onion cultivation, storage and marketing practices the farmers still have some difficulties of onion growers.

Constraints analysis of onion growers at different stages while cultivation, storage and marketing practices of onion crop. This data collected and categorized as input supply, technical, financial, labour, storage and marketing constraints.

It is observed from table 2 that in case of input supply constraints 55.33 per cent farmers faced with non availability of improved seeing at proper time followed by inadequate availability of FYM (27.33%). As regard the technical constraints 53.33 per cent farmers faced with irregular supply of electricity.

In case of financial constraints 21.33 per cent respondents faced the problem with irregular supply of Agril. Loans at time of planting of seedling, transporting, purchasing the fertilizer, pesticides and insecticides followed by high cost of improved variety of seeds, fertilizers and insecticides (16.00%)

In case of labour constraints majority of the respondent faced the problem of high wages of labour (22.00%) followed by non-availability of labour at the time of transplanting and harvesting (18.66%). As regard

to storage constraints 33.33 per cent of the respondents faced the problem with non availability of proper storage facilities. In case of marketing constraints (64.66%) of respondents faced the problem of low price to onion.

By and large, it could be concluded that the analysis of these constraints would call for the attention Administrator of the Department of agriculture and other departments for planning systematic efforts to overcome these constraints so as to maximize the production of onion and ultimate benefit to farming community.

It is evident from table 3 that among the selected variables education, land holding, area under onion crop, annual income, experience in onion cultivation, social participation, socio-economic status, sources of information, extension contact, irrigation potentiality, market orientation, knowledge and adoption were positively and significantly correlated with constraints at 0.01 level of probability. Where as economic motivation was positively and significantly correlated with constraints at 0.05 level of probability.

Therefore, the null hypothesis was rejected for these characteristics stating that there exists a significant relation between these characteristics and constraints possessed by onion growers about cultivation, storage and marketing practices. The variable age and family labour did not show any significant relation with constraints of onion growers. The null hypothesis for this variable was therefore accepted. The logical reasoning

Table 3: Co-efficient of correlation of selected characteristics of the respondents with their constraints severity index about recommended cultivation, storage and marketing practices of onion crop.

Sr.No.	variable	'r' value
1.	Age	-0.1246
2.	Education	0.4205**
3.	Land holding	0.5224**
4.	Area under onion crop	0.5031**
5.	Annual Income	0.5113**
6.	Family labour	-0.0960 NS
7.	Onion cultivation experience	0.7113 **
8.	Social participation	0.2592**
9.	Socio-economic status	0.5981**
10.	Sources of information	0.4650**
11.	Extension contact	0.4452 **
12.	Irrigation potentiality	0.4166 **
13.	Economic motivation	0.197*
14.	Market orientation	0.6806 **
15.	Knowledge	0.7805**
16.	Adoption	0.6542**

* and ** indicate significance of values at P=0.05 and 0.01, respectively

NS = Non-significant

behind this may be that these variables had no influence on acquisition of constraints and it might be that irrespective of age and family labour of onion growers they sought the constraints about recommended onion cultivation, storage and marketing practices.

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