

Awareness of Onion Growers about University Recommended Production Technology of Onion

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ABSTRACT

Onion crop is cultivated in Maharashtra state on large scale. Mahatma Phule Krishi Vidyapeeth, Rahuri had made recommendations for cultivation of onion crop. The study was undertaken to know the awareness of onion growers about university recommended practices for kharif onion crop. Data was collected from Pune district of Maharashtra state. It was found that half (50.77 %) of the respondents belonged to old age, more than two-fifth of them had medium family size (47.69%) and small landholding (43.08%). Majority of the respondents had farming as their major occupation (69.23%), irrigated land (70.77%), no social participation (75.38 %) and medium use of information sources (73.85%). It was found that half (50.77%) of the respondents had moderate awareness about university recommended practices for kharif onion crop. Recommendation wise awareness shows that there was less awareness about different cultivation practices among the majority of the respondents.

Key Words: Awareness, Onion Production Technology

INTRODUCTION

In a developing and highly populated country like India food security assumes greater importance. Vegetables have vital share in the diet of Indian people. Among the vegetables onion assumes greater importance due to its frequent use in daily vegetable recipes, various soups, sauces, salads and variety of other food prepared in kitchen. It has great demand in the market. It is cultivated on large area all over India. India is the second largest producer of onion next to china. In India, the area under onion was 1285 thousand hectares with the production of 23262.3 thousand metric tonnes and productivity of 18.10 MT/ha during the year 2017-18. The major onion producing states are Maharashtra, Madhya Pradesh, Karnataka, Bihar, Rajasthan, Andhra Pradesh, Haryana, West Bengal, Gujarat and Uttar Pradesh. Maharashtra ranks first in onion production with a share of 28.32 per cent. In Maharashtra, onion was cultivated on the area of 507.96 thousand hectares with the annual production of 8854.09 thousand metric tonnes and productivity 17.43 MT/ha during the year 2017-18. (Source Horticulture Statistics at a glance 2018)

Ahmednagar is leading district for

production of onion followed by Nasik and Pune. The productivity of the country is low as compared to other countries like United States of America, Egypt, Iran etc.

Mahatma Phule Krishi Vidyapeeth, Rahuri in the state of Maharashtra has recommended the production technology for onion crop cultivated in kharif and rabi season. Awareness of these technologies among the farmers is essential step in the decision to go for adoption. Hence the research study was undertaken with the objective to know the profile of the farmers cultivating kharif onion crop and their awareness about university recommended technology.

METHODOLOGY

The study was undertaken in Pune district from Maharashtra state. Shirur and Ambegaon tehsils were selected on the basis of area under onion crop. Data were collected from 65 respondents from 8 villages of these two Tehsils. Frequency, Percentage, mean and standard deviation these statistical tools were used to analyze the data. Responses regarding awareness of respondents about university recommendation for onion crop cultivated in kharif season were recorded with the

help of structured interview schedule. Total score for awareness was calculated for each respondent and on the basis of score obtained they were categorized into three categories using mean and standard deviation.

RESULT AND DISCUSSION

Personal and socio-economic characteristics of the onion respondents:

Table 1
Classification of the respondents according to their personal and socio-economic characteristics

Sl. No.	Category	Kharif onion Respondents (n =65)	
		Frequency	Percentage
A	Age		
1	Young (Up to 35 years)	06	9.23
2	Middle (36 to 50 years)	26	40.00
3	Old (50 and above)	33	50.77
B	Size of Family		
1	Small (Up to 5 members)	26	40.00
2	Medium(6 to 10 members)	31	47.69
3	Large (11 and above)	08	12.31
C	Occupation		
1	Farming	45	69.23
2	Agril.+Sub. Occupation	13	20.00
3	Agril.+Business	06	9.23
4	Agril.+Service	01	1.54
D	Land holding		
1	Marginal (Upto 1.00 ha.)	09	13.85
2	Small (1.01 to 2.00 ha.)	28	43.08
3	Semi-medium (2.01 to 4.00 ha.)	20	30.77
4	Medium (4.01 and 10 ha.)	08	12.31
5	Large (above 10 ha.)	00	0.00
E	Type of land		
1	Irrigated	46	70.77
2	Rainfed	06	9.23
3	Irrigated +Rainfed	13	20.00
F	Social participation		
1	No (o score)	49	75.38
2	Medium (1 score)	13	20.00
3	High (more than 1 score)	3	4.62
G	Sources of Information		
1	Low (score upto 10)	9	13.85
2	Medium (score between 11 to 15- Rabi, 11 to 16- kharif)	48	73.85
3	High (Score more than 15- Rabi, more than 16- kharif)	8	12.31

Data from Table 1 indicates that half (50.77%) of the respondents belonged to old age group followed by middle (40.00%) and young age (9.23 %) respectively. 47.69 per cent of them had medium size of family. Two-fifth (40.00%) of the respondents belonged to small family while 12.31 per cent of them had large family. It was further observed that 69.23 per cent of the respondents had farming as their major occupation followed by 20.00 engaged in agriculture and other subsidiary occupation. Very meager per cent of them were involved in business (9.23%) and service (1.54%) along with the agriculture. 43.08 per cent and 30.77 per cent of the onion growers belonged to small and

semi-medium landholding, respectively. None of the respondent had large land holding. Majority (70.77%) of them had irrigated land. Three-fourth (75.38%) of the respondents had no social participation while only one-fifth (20.00%) of them were involved in different organizations. Majority (73.85%) of the respondents belonged to the category of medium use of information sources. However, nearly equal per cent of them had low (13.85%) and high (12.31%) use of information sources. These findings are similar with the findings of Kumari Anop *et al.* (2019)

Awareness of the respondents about the university recommended practices of kharif Onion crop

Table 2

Classification of the respondents according to their awareness about recommendations of onion crop

Sl. No.	Category	Kharif onion Respondents (n =65)	
		Frequency	Percentage
1	Low (Score upto 2)	26	40.00
2	Medium (Score 3 to 8)	33	50.77
3	High (Score above 8)	6	9.23
	Total	65	100.00

Mean: 4.78

S.D. 3.04

Table 2 reveals that half (50.77%) of the respondents belonged to the medium category of awareness about recommendations made for onion crop grown in kharif season. Two-fifth (40.00%) of the respondents had low awareness while nearly one-tenth (9.23%) of them belonged to high

awareness. Result indicates that most of the respondents had less awareness about the university recommended practices. The results are similar to the results of Singh *et al.* (2011)

Recommendation wise awareness of respondents

Table 3

Classification of the respondents according to their recommendation wise awareness about onion crop grown in kharif season

Sl. No.	Recommendations	Awareness (n=65)	
		Yes	No
1.	To obtain good yield, for absorption of micronutrients, efficient use of nutrients and to have economic benefits from onion crop cultivated on light soils of Western Maharashtra, Spraying of Phule Grade-II B 0.3% (3% Iron, 5% Zinc, 0.5% Manganese, 0.5% Boron, 0.5%Cu) along with the recommended fertilizer dose (100:50:50) after 35 and 55 days is recommended.	22 (33.85)	43 (66.15)
2.	To obtain good yield from seed production, for absorption of micronutrients and to have economic benefits from onion crop cultivated on medium deep soils of Western Maharashtra, after planting of onion <i>got</i> Spraying of Phule Grade-II B 0.3% (3% Iron, 5% Zinc, 0.5% Manganese, 0.5% Boron, 0.5%Cu) along with the recommended fertilizer dose (100:50:50) after 55 and 65 days is recommended.	25 (38.46)	40 (61.54)

3	<p>The yield targeted equations of major nutrients (i.e. N, P and K) for optimal yield of onion seeds (i.e. 400 to 450 Kg ha⁻¹) in medium deep black soils is recommended with and without FYM for balance nutrition and maintaining soil fertility .</p> <table border="1" data-bbox="289 384 998 590"> <thead> <tr> <th data-bbox="289 384 722 432">With FYM (20 t ha⁻¹)</th> <th data-bbox="722 384 998 432">Without FYM</th> </tr> </thead> <tbody> <tr> <td data-bbox="289 432 722 480">FN=0.55XT- 0.65XSN-2.42XFYM</td> <td data-bbox="722 432 998 480">FN=0.66XT-0.77XSN</td> </tr> <tr> <td data-bbox="289 480 722 529">FP₂ O₅ =0.28 xT-3.01xSP-.20xFYM</td> <td data-bbox="722 480 998 529">FP₂ O₅ =0.33xT-3.63xSP</td> </tr> <tr> <td data-bbox="289 529 722 590">FK₂O = 0.28xT-0.11XSK-0.80xFYM</td> <td data-bbox="722 529 998 590">FK₂O =0.31xT-0.13xSK</td> </tr> </tbody> </table> <p>Where FN:Fertilizer Nitrogen FP₂ O₅: Fertilizer Phosphorus FK₂O: Fertilizer Potash T : Targeted Yield SN:Soil Nitrogen SP:Soil Phosphorus SK : Soil Potash FYM: Farm Yard Manure</p>	With FYM (20 t ha ⁻¹)	Without FYM	FN=0.55XT- 0.65XSN-2.42XFYM	FN=0.66XT-0.77XSN	FP ₂ O ₅ =0.28 xT-3.01xSP-.20xFYM	FP ₂ O ₅ =0.33xT-3.63xSP	FK ₂ O = 0.28xT-0.11XSK-0.80xFYM	FK ₂ O =0.31xT-0.13xSK	05 (7.69)	60 (92.31)
With FYM (20 t ha ⁻¹)	Without FYM										
FN=0.55XT- 0.65XSN-2.42XFYM	FN=0.66XT-0.77XSN										
FP ₂ O ₅ =0.28 xT-3.01xSP-.20xFYM	FP ₂ O ₅ =0.33xT-3.63xSP										
FK ₂ O = 0.28xT-0.11XSK-0.80xFYM	FK ₂ O =0.31xT-0.13xSK										
4	<p>The good quality dehydrated iron flakes with higher yield and rehydration ratio (1 : 6) can be prepared from CV <i>Phule Safed</i> by adopting following process</p> <ul style="list-style-type: none"> - Cutting the onion slice into 2. 5 to 3. 5 mm - Pre treating the slices with 0. 2% KMS and drying at 55°C for 8 to 9 hours - Packing of flakes in laminated pouches for storage up to 90 days at ambient temperature. (2015-16) 	06 (9.23)	59 (90.77)								
5	<p>Spraying of Herbicide oxyfluorfen23. 5% EC@ 7. 5 ml + Quizalofop-ethyl 15% EC @ 10ml per 10 lit. of water at 25 days after transplanting and one hand weeding at 45 DAT is recommended for efficient weed control in onion.</p>	05 (7.69)	60 (92.31)								
6	<p>Spraying of 19:19:19 water soluble fertilizer @ 0. 5% at 30 & 45 days after transplanting along with basal dose of fertilizer (50:50:50 N,P₂O₅ and K₂O₅) is recommended for obtaining higher green top onion yield and higher monetary returns.</p>	32 (49.23)	33 (50.77)								
7	<p>Four sprays of 75% SP acephate @ 8.0 g or 20% SP acetamiprid @ 2. 5 g per 10 lit. of water at an interval of 15 days after observing population at economic threshold level (20 thrips/plant) are recommended for control of onion thrips.</p>	19 (29.23)	46 (70.77)								
8	<p>Application of 60% recommended fertilizer dose (100:50:50 NPK Kg/ ha.) in water soluble form in 10 equal weekly splits starting from transplanting through micro sprinkler is recommended for higher yield, insufficient use of water and nutrient for onion on medium deep black soil.</p>	18 (27.69)	47 (72.31)								
9	<p>Application of water at 75% of crop evapotranspiration at 3 days interval through drip is recommended for efficient water use and higher yield of onion seed in medium black soil.</p>	21 (32.31)	44 (67.69)								
10	<p>In a zinc deficit soils of Western Maharashtra it is recommended to give 20 kg of Ferrous Sulphate with the recommended fertilizer dose (100:50: 50 N,P ,K + 10 tonnes of compost per ha.)</p>	13 (20.00)	52 (80.00)								

11	For the control of fruit fly alternate three spraying s of Fipronil 5 S.C. 15 ml or Profenophos 50 E.C. 10 ml or Carbosulphon 25 E.C. 10 ml per 10 lit. of water for one ha. is recommended.)	27 (41.54)	38 (58.46)
12	A Set plantation technique of onion is recommended for achieving early maturity (75 days), higher bulb production and profitability of kharif onion.	03 (4.62)	62 (95.38)
13	Four sprays of the fungicide Tebuconazole @ 0.1% along with this sticker @ 0.1% at 10 days interval is recommended for the control of purple blotch and collectotrichum blight in kharif onion. The first spray should be given as soon as the disease appears.	26 (40.00)	39 (60.00)
14	To improve the seed production capacity of Kharif onion it is recommended to plant onion set produced by set production technology and stored for two and half month on 15 th November. It is also recommended to do the mulching with sugarcane trash.	04 (6.15)	61 (93.85)

(Figures in parenthesis indicates percentage)

Table 3 shows that one-third (33.85%) of the respondents were aware about spraying of Phule Grade-II B with the recommended fertilizer dose after 35 and 55 days of planting for the onion crop cultivated on light soils in Western Maharashtra. However, two-third (66.15%) of them had no awareness regarding spraying of Phule Grade-II B. It is observed that 38.46 per cent of the respondents had awareness about the similar recommendation regarding spraying of Grade-II B but for the onion grown on medium soils. Most of the respondents had no awareness regarding application of major nutrients according to the yield targeted equations for onion seeds in medium deep black soils (92.31%), preparation of dehydrated iron flakes (90.77%) and spraying of herbicide oxyfluorfen and quizalofop-ethyl for control of weed in onion (92.31%).

These finding are in line with the findings of Kumari Anop *et al.* (2019).

Nearly half (49.23 %) of the respondents were aware about spraying of 19:19:19 water soluble fertilizer after transplanting with basal dose of fertilizer for obtaining higher green top onion yield. Majority (70.77 %) of the respondents had no awareness regarding spraying of acephate for control of thrips. 72.31 per cent of them were unaware about application of 60 per cent recommended fertilizer dose in water soluble form. Nearly two-third (67.69%) of the respondents had no awareness regarding application of water through

drip in medium deep black soil. Regarding application of Ferrous Sulphate in zinc deficit soils four-fifth (80.00%) of the respondents were unaware about it. 41.54 per cent of the respondents had awareness about control of fruitfly. Two-fifth (40.00%) of the respondents were aware about the spraying of Tebuconazole for the control of purple blotch and blight. Most (95.38%) of the respondents had no awareness about recommendation of set plantation technology for achieving early maturity and higher bulb production. Similarly most (93.85%) of them were unaware regarding planting onion set through set production technology and storing it for improving the seed production capacity and also mulching with the sugarcane trash. The findings are similar to the findings of Kiruthika (2013)

The awareness about these recommendations among the respondents is poor the reason may be in study area one National Research Center for onion and Garlic is working so the nearby farmer adopted their suggestion Second the study area is onion cultivating area so the representative of different seed and plant protection companies visiting the farmers field regularly and convincing them about seed, cultivation practices as well as application of insecticides and pesticides. The farmer get the advisory services at their field so farmer may have poor aware about university recommendations.

CONCLUSION

MPKV, Rahuri had made various recommendations for the onion crop grown in kharif season regarding fertilization, irrigation practices, weed control, pest management, post-harvest management etc. Awareness about these recommendations among the respondents is poor. Hence, it is necessary to take efforts for creating awareness among the onion growers about

recommended cultivation practices. It is recommended that Krishi Vigyan Kendra from the same region should organize awareness campaign and conduct the result demonstrations / Front Line Demonstration in consultation with Agricultural University.

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