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Yield Gap Analysis in Onion under Front Line Demonstration in Haveri District

Agriculture

KEYWORDS : Urbanization, Location and Size of Towns

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ABSTRACT

Problems of onion production and their solution at farming situation were studied with the participation of this regard, under technology development and refinement, front line demonstrations on onion was conducted at different locations in Haveri district. These demonstrations focused on increased productivity of onion per unit area and get the feedback from farmers on the performances of onion variety. From the study it revealed that over the years variety Arka kalyan performed superior over local check. The gross returns, net returns and B: C ratio recorded highest in Arka kalyan compared to local. Further the technology index and its adoption index over the local check were also highest in Arka kalyan.

INTRODUCTION

Onion (Allium cepa L.) is one of the important commercial vegetable crops produced in India for both domestic consumption an export purpose India accounts for 16% of the world's area and occupies the second position after China in production with a share of around 14% Karnataka contributes a major area in South India (84,800 ha) and produces 4, 86,130 t of onion annually. The productivity of onion is much low in India than the world average (pandey, 2000: Lawande, 2005) Even in Havri district yield levels are also lower than the state average (Anon, 2008) however, the technology break through has no doubt recorded greater strides in augmenting onion production and productivity .But in sufficient and improper extension activities results in non-adoption of improved package developed at research institutes. Further the replacement ratio of traditional varieties with improved varieties and non-availability of sufficient quantity of quality seeds of improved variety in a time, are the major constraints in onion cultivation. Hence to improve the production of onion, variety Arka kalyan was evaluated with local variety under front line demonstrations.

MATERIAL AND METHODS

Under large scale demonstrations of onion variety Arka kalyan was introduced through front line demonstrations of Krishi Vigyan Kendra, Hanumanamatti from 2005-06 to 2007-08 in different locations of Haveri district . Each demonstration was comprised of 0.4ha Adjacent to this local variety was grown (0.4 ha) for comparison. The recommended package was followed for the crop (Anon, 2007). The data on production cost , input used, monitory returns, technology gap and adoption index were collected and analyzed for the economic feasibility of the recommended technology (Eswaraprasad,et al,1993).

I. Technology gap =(Potential yield) –(Demonstration yield)

II. Adoption index = (Ai/Pi) x 100

Where, Ai=Adoption score obtained by the farming community for i th crop

RESULTS AND DISCUSSION

Yield levels of varieties under front line demonstrations trials and their potential yield was compared to estimate the yield gap. The technology gap shows he gap in the demonstration yield over the potential yield and it was highest in Arka kalyan varity compared to local variety during all the years (Table I). this may be attributed to dissimilarity in the soil fertility status, weather condition and un-aware of educate the farmers more and more about the improved variety and its production technology o reach maximum yield potentiality

In front line demonstrations the adoption of technology was analyzed through adoption index. The adoption index was higher in Arka kalyan variety compared to local. This could be due the high yielding ability an moderately disease resistance for purple leaf blotch with good quality parameters result in better market preference compared to local (Table III). The variety Arka kalyan have shown increased yield over local variety (Table I). These findings are in line with the results of Hiremath et al., (2007). The increment in yield ranged between 25.80 to 32.20 percent. The percent increase in yield over local check was highest (32.20) during 2005-06 compared to local. However variations in the yield of onion in different years might be due to the variations in soil moisture availability, rainfall, and soil type as well as change in the location of demonstrations every year.

The comparative profitability of onion crop has been studied by estimating the additional benefit cost ratio and the results have been presented in table II. The highest gross return, net returns and benefit cost ratio was recorded in improved variety compared to local check. The economic analysis reveal that by adoption of improved variety Arka kalyan with minimal additional cost results in higher additional net returns over local showing its profitability. Similar results on profitability of onion was observed by Hiremath et al (2007).

From the study it reveals that increased yield was due to adoption of improved variety and the technology transferred through front line demonstrations are profitable as well as economically viable.

TABLE I, Potential yield, yield gaps and adoption index of kharif onion (Mean over locations)

Year	Variety	Potential yield (t/ha)	Demonstration yield (t/ha)	Technology gap (t/ha)	Technology Index	Adoption Score by Respondent (Ai)	Possible Maximum Score (Pi)	Adoption Index (%)
2005-06	Arka kalyan	45.00	20.90	24.10	53.56	04	07	57.14
	Local	20.00	15.80	04.20	21.00	02	07	28.57
2006-07	Arka kalyan	45.00	15.60	29.40	65.30	03	07	42.85
	Local	20.00	12.40	07.60	38.00	02	07	26.57

2007-08	Arka kalyan	45.00	19.20	25.80	57.00	05	07	71.42
	Local	20.00	15.00	05.00	25.00	02	07	28.57

TABLE II, Impact of improved variety Arkakalyan on yield and economics of onion (Mean over locations)

Year	Variety	No of Demon	yield (t/ha)	% Yield Increase over Local	Cost of Cultivation (Rs/ha)	Adoption Cost of Cultivation over Local (Rs/ ha)	Grass Returns (Rs/ha)	Net Returns (Rs/ha)	Additional Net Returns over Local (Rs/ha)	B:C Ratio
2005-06	**Arkakalyan**	10	20.90	32.20	18885	1985	83600	64715	15015	1:3.43
	Local		15.80		16900		63200	49700		1:2.94
2006-07	**Arkakalyan**	10	15.60	25.80	19159	1759	62400	43241	11041	1:2.26
	Local		12.40		17400		49600	32200		1:1.85
2007-08	**Arkakalyan**	25	19.20	28.00	18972	2272	76800	57828	14528	1:3.05
	Local		15.00		16700		60000	43300		1:2.59

TABLE III: Biometric observation on yield and yield attributes of onion as influenced by variety under farm condition (Mean over locations)

Sl No	Particulars	Variety	
		Arkakalyan	Local
i	**Growth parameters**		
	Plant height (cm)	51.40	41.00
	No of leaves/bulb	9.48	7.21
	Leaf length (cm)	34.19	27.95
	Leaf breadth (cm)	0.99	0.84
ii	**Yield parameters**		
	Neck thickness(cm)	1.58	1.38
	Neck length (cm)	6.01	6.53
	Scale :bulb ratio	8.78	9.75
	Bulb length (polar) (cm)	4.29	4.15
	Bulb diameter (equatorial) (cm)	4.33	1.07
	Bulb weight (g/bulb)	31.82	28.07
Iii	**Quality parameters**		
	Total soluble solids	16.67	16.26
	Keeping quality of bulbs	Medium	Low

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iv	**General appearance**		
	Disease reaction to purple leaf blotch	Moderate	Susceptible
	Bulb color & shape	Deep red with attractive rose color, flat globe shaped uniform	Medium red , non-uniform size bulb
	Market preference	Higher price (20% higher)	Lower price

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REFERENCE

ANONYMOUS, 2007, Package of practices or Horticultural crops. University of Agricultural Sciences, Dharwad, University of Agricultural Sciences, Bangalore and Department of Horticulture, Bangalore. | ANONYMOUS, 2008, Potential linked credit plan 2009-10 Haveri district. Published by National Bank for Agriculture and Rural Development, Karnataka Regional Office, Bangalore.pp.5. | ESWARAPRASAD,Y, MANOHAR RAO .M,AND VIJAYABHINANDANA .B,1993, Analysis of on farm and level of technology on oilseed and pulse crop in Northern Telengana Zone of Andra Pradesh Indian journal of Agriculture Economics, 48:351-356 | HEREMATH .S.M, NAGARAJ M.V, AND SHASHIDHAR, K.K, 2007 | Impact o front line demonstrations on onion productivity in farmers field . National seminar on appropriate extension strategies for management of rural resources, held at University of Agricultural Sciences, Dharwad during 18-20 December, 2007, pp. 100. | LAWANDE K.E,2005, Onion improvement-present status and future thrust . | National Symposium on current trends in onion, garlic and seed spices- production, marketing and utilization, held at NRCOG, Rajagurunagar, Pune during 25-27 Novenber,2005.pp.1-11 | PANDEY U.B, 2000, Seed production of onion and garlic constraints and strategies. National Symposium on onion and garlic, production and post harvest management challenges and strategis, held at NRCOG, Rajagurunagar, Pune during 19-21 Novenber, 2000.pp.43-48. |