

Research Article

Results of front line demonstrations of rice in Navsari district of Gujarat

■ K.A. SHAH, B.M. TANDEL, PRABHU NAYAKA AND C.K. TIMBADIYA

ARTICLE CHRONICLE :

Received :

30.01.2014;

Revised :

09.04.2014;

Accepted :

18.04.2014

SUMMARY : Problem of rice production and their solutions at farming circumstance were studied with the involvement of farmers. In this regard, front line demonstrations on rice were conducted at different locations in Navsari district. These demonstrations focused on increased productivity and replacement of old variety with promising high yielding new variety NAUR-1 and get the feedback from farmers on the performance of rice variety. Study, revealed that over the years, NAUR-1 variety was superior over local check. The net returns (Rs. 42433/ha) and B:C ratio (1:2.42), extension gap (1.15 t/ha) and technology index (78.33 %) were also highest in NAUR-1 as compared to local variety.

How to cite this article : Shah, K.A., Tandel, B.M., Nayaka, Prabhu and Timbadiya, C.K. (2014). Results of front line demonstrations of rice in Navsari district of Gujarat. *Agric. Update*, 9(2): 229-231.

KEY WORDS :

Front line demonstrations, Technology index, B: C ratio, NAUR-1

BACKGROUND AND OBJECTIVES

Rice (*Oryza sativa*) is one of the important food crop produced in India in terms of both area, production and consumer preference. In the Gujarat state rice occupies about 7 to 8 per cent of the gross cropped area of the state and accounts for around 14 per cent of the total food grain production. It is grown on average about 6.5 to 7.25 lakh hectares of land comprising nearly 55 to 60 per cent of low land (Transplanted) and 40 to 45 per cent of upland (drilled) rice. The total production of rice in the state is about 9.0 to 10.5 lakh tons with a productivity of 1500 to 1800 kg/ha. The productivity of irrigated rice is nearly 2 tons/ha whereas that of unirrigated rice nearly 1 ton/ha (Mehta *et al.*, 2010). However, the technological breakthrough has no doubt recorded greater strides in augmenting rice production and productivity. But the insufficient and improper extension activities are the major factors resulting in non- adoption of improved package of practices developed at

university research institutes. Further, the replacement of traditional varieties with improved varieties and non- availability of sufficient quantity and quality seeds of improved variety in a time, which is the most important input. With this view, the present investigation was undertaken to evaluate the performance of rice variety NAUR-1 with local variety through front line demonstrations.

RESOURCES AND METHODS

The present study was conducted at Krishi Vigyan Kendra, Navsari, Gujarat, in the adopted villages of Navsari district operational area of KVK for four years (2009-10, 2010-11, 2011-12 and 2012-13). The materials used for the study comprised of NAUR-1 and local variety as a check. In total, 2306 demonstrations in 468.68 hectares area in different locations and different villages were conducted. Materials for the study with respect to front line demonstrations and farmers practices are given in Table A. The data on the production cost and monetary returns were

Author for correspondence :

B.M. TANDEL

Krishi Vigyan Kendra,
NAVSARI (GUJARAT)
INDIA

Email: hariombhupi@gmail.com, hariombhupi@nau.in

See end of the article for authors' affiliations

Table A: Front line demonstrations and farmers practices

Sr.No.	Operations	Existing farmers practices	Improved practices on demonstrations
1.	Variety	Use of local/own seeds	NAUR-1 Improved and high yielding developed by NAU, Navsari
2.	Seed rate	40 kg/ha	25 kg/ha
3.	Seed treatment	No seed treatment	Seed treatment with captan
4.	Method of sowing	Random planting	Japanese method
5.	Fertilizer application	Imbalanced fertilizer application with low FYM application	N:P:K @ 100-30-00 kg/ha FYM - 15 t/ha
6.	Weed management	Hand weeding	Use pre emergence weedicide butaclor
7.	Pest and disease management	Non- adoption of IPM and IDM practices	Adoption of IPDM practices

collected from frontline demonstrations plots for working out the economic feasibility of improved variety. Along with this data on local practices commonly adopted by the farmers were also collected. Recommended package of practices were followed for the varieties. The technology gap, extension gap and technology index were calculated as suggested by Eswaraprasad *et al.* (1993) and Samui *et al.* (2000).

OBSERVATIONS AND ANALYSIS

From the data presented in Table 1, it is inferred that demonstration yield of NAUR-1 variety performed better than local variety. The NAUR -1 recorded the yield of 4.41 t/ha as compared to local variety 3.84 t/ha. The per cent increase in yield over respective local was 35.53 and 34.16 for NAUR-1 and local varieties, respectively. The yield

Table 1: Productivity of rice, yield gaps and technology index of rice cultivation in Navsari district

Year	Area	No. of Demo.	Variety	Potential yield kg/ha	Yield (t/ha)		% increase over local check	Extension gap (t/ha)	Technology gap (t/ha)	Technology index (%)
					Demo	Farmers practices				
2009-10	31	126	NAUR-1	6	4.12	3.15	30.79	0.97	11.85	79.00
	31	126	Local	6	3.70	2.85	29.82	0.85	6.15	68.33
2010-11	27.04	93	NAUR-1	6	3.86	2.75	40.00	1.10	12.25	81.66
	27.04	93	Local	6	3.73	2.73	36.63	1.00	6.27	69.66
2011-12	131.6	658	NAUR-1	6	4.44	3.25	36.60	1.18	11.75	78.33
	131.6	658	Local	6	4.01	3.15	27.30	0.86	5.85	65.00
2012-13	44.7	275	NAUR-1	6	5.20	3.85	35.06	1.35	11.15	74.33
	44.7	275	Local	6	3.93	2.75	42.90	1.18	7.43	82.55
Mean	-	-	NAUR-1	6	4.41	3.25	35.53	1.15	11.75	78.33
	-	-	Local	6	3.84	2.87	34.16	0.97	6.42	71.38

Table 2: Economics off rice production under FLD in Navsari district

Year	Variety	Yield (t/ha)		Cost of cultivation (Rs/ha.)		Net returns (Rs/ha.)		B:C ratio	
		Demo	Farmers practices	Demo	Farmers practices	Demo	Farmers practices	Demo	Farmers practices
2009-10	NAUR-1	4.12	3.15	14320	13000	31000	28750	2.29	2.30
	Local	3.70	2.85	12500	11250	28640	26000	2.16	2.20
2010-11	NAUR-1	3.86	2.75	12720	10800	45120	27700	3.54	2.56
	Local	3.73	2.73	12500	9800	38055	25690	3.04	2.62
2011-12	NAUR-1	4.44	3.25	23950	21000	53256	51000	2.25	2.42
	Local	4.01	3.15	25530	23500	48156	46800	1.18	1.99
2012-13	NAUR-1	5.20	3.85	24680	23000	40357	38890	1.63	1.69
	Local	3.93	2.75	26230	24350	22957	21000	0.87	0.86
Mean	NAUR-1	4.41	3.25	18918	16950	42433.2	36585	2.42	2.24
	Local	3.84	2.87	18680	17225	34452	29872.5	1.81	1.91

improvement in NAUR-1 variety is due to effect of high yielding to other varieties.

Results from Table 1 revealed that yield of the front line demonstrations and potential yield of the crop was compared to estimate the yields which were further categorized into technology and extension gaps. The technology gap showed and it was highest in NAUR-1 (11.75 t/ha) compared to the local variety (6.42 t/ha). This could be due to lack of awareness about the improved variety and its seed availability. Hence, to narrow down the technological gap, it needs to educate the farmers more and more about the improved variety especially NAUR-1.

In advance higher extension gap of 1.15 t/ha was recorded in variety NAUR-1 compared to local variety (0.97 t/ha), which emphasized the needs to educate the farmers through various extension means for adoption of improved variety NAUR-1 to reverse wider extension gap.

The technology index showed the feasibility of the variety at the farmer's field. The lower the value of technology index more is the feasibility. Table 1 revealed that the technology index was minimum in local variety (71.38 %) and 78.33 per cent for NAUR-1 this variety suggesting the superiority and better performance of both varieties compared to local.

The year wise economics of both varieties of rice production under front line demonstrations were estimated and the results have been presented in Table 2. The economic analysis of the data over the year revealed that NAUR-1 variety recorded highest net returns (Rs. 42433/ha) and B:C ratio (1:2.42) compared to local variety.

The present study observed that wide yield and

management gaps existed between research recommendation and farmer's practices. However, the yield levels under FLD was better than local rice variety and performance of this variety could be further improved by adopting recommended management practices.

Hence, it can be concluded from the study that increased yield was due to adoption of variety NAUR-1 and conducting front line demonstrations of proven technologies yield potentials of crop can be increased to greater extent. This will subsequently increase the yield as well as the livelihood of the farming community.

Authors' affiliations :

B.M. TANDEL AND PRABHU NAYAKA, Krishi Vigyan Kendra, NAVSARI (GUJARAT) INDIA

C.K. TIMBADIYA, Krishi Vigyan Kendra, TAPI (GUJARAT) INDIA

REFERENCES

Eswaraprasad, Y., Manohar Rao, M. and Vijayabhindana, B. (1993). Analysis of on farm and level of technology on oilseed and pulse crop in Northern Telengana Zone of Andhara Pradesh. *Indian J. Agric. Eco.*, **48**: 351-356.

Mehta, Autul M., Pathak, A.R., Prajapati, K.S., Mahwana, M.G., Bhva, N.P., Patel, S.G., Saiyad, M.R., Patel, Kishore, H., Chauhan, C.B., Bhalani, G.K., Dodiya, J.F., Patel, R.C., Chauhan, N.P., Patel, V.J., Desai, M.U. and Patel, B.J. (2010). MRRS Technical Bulletin No 1/2010. "Rice research at a glance-pp.35".

Samui, S.K., Maitra, S., Roy, D.K., Mondal, A.K. and Saha, D. (2000). Evaluation of front line demonstration on ground nut (*Arachis hypogea* L). *J. Indian Soc. Coastal Agric. Res.*, **18**(2):180-183.

9th
Year
★★★★★ of Excellence ★★★★★