

Research Paper

Assessment of Miller's Preferences on Procurement of Rice Varieties in Tamil Nadu

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Received: 14-06-2021

Revised: 16-08-2021

Accepted: 04-09-2021

ABSTRACT

Rice is the primary staple food crop and serves for more than three billion people in the globe. Thirty rice millers were selected purposively in the study area, to obtain their view on procurement parameters, opinion and preferences on procurement of CO 51. The fineness of rice and keeping quality were the major deciding parameters for procurement by rice millers with a Garrett's score of 31.38. Fineness of rice fetches a premium price in the consumer market besides the keeping quality facilitates the miller to stock the produce for a long time till getting highest price in the market. The preference of the variety CO 51 is due to high milling (68.00 per cent), fineness, resistance to blast and BPH when compared to other varieties. The share of CO 51 was relatively higher in both the districts when compared to other varieties. This would enable the stake holders, University, extension agencies, seed companies and millers to design suitable strategies to motivate and influence the farmers towards desired direction. This message may be taken to farmers to decide the variety for getting premium price. This helps the policy makers in planning the policies related to procurement for the traders.

Highlights

- Perceived advantage of CO 51 had significant influence in adoption of variety and procurement among millers.
- Rice miller's procurement parameters on CO 51 rice plays major role in adoption of CO 51 rice variety.

Keywords: CO 51, Millers, Parameter, Procurement, Rice

Rice is the primary staple food crop and serves for more than three billion people in the globe. The consumption of rice has seen a slight increase over the last decade, The data shows that in the crop year 2018-2019, about 486.62 million metric tons of rice was consumed in worldwide, up from the 437.18 million metric tons in the 2008-2009 crop year (Shahbandeh 2017). The data shows that, majority of Indian states comprising South, West and Eastern parts of country having rice as their staple food and it is cultivated more than 40 million hectares with a production of around 128.44 million tonnes, which contributes about 2.5 per cent of Gross

Domestic Product (GDP). To meet the food demand for growing population, 5 million tonnes additional food is required out of which 2 million tones share is of rice. In Tamil Nadu, total area under rice is 18.30 lakh hectares, production of 58.39 lakh tonnes and with a productivity of 3.19 t/ha during 2014-15 (Indiastat, 2015). Rice cultivation in Tamil Nadu is done in *kuruvai/ Sornavari* (June to September) season and *sambalthaladi* (August to January) seasons. Out of

How to cite this article: Dharmalingam, P., Balasubramaniam, P., Umashankar, K. and Mohanraj, V. (2021). Assessment of Miller's Preferences on Procurement of Rice Varieties in Tamil Nadu. *Economic Affairs*, 66(3): 401-405.

Source of Support: None; **Conflict of Interest:** None



the total 18.30 lakh ha of rice in Tamil Nadu, one third area is cultivated in *kuruvai/sornavari* (June to September) seasons and rest in *sambal/thaladi* (August to January) seasons. The variety CO 51 was introduced as an ideal replacement for the hitherto popular variety ADT 43 in medium slender grain segment (Robin *et al.* 2019). In Tiruvarur and Kancheepuram districts, the area of cultivation with CO 51 multiplied in an exponential manner after it was released during 2013. The present study was taken up with the objective of undertaking a Preference analysis of millers for the procurement of rice varieties in Tamil Nadu.

LITERATURE REVIEW

Dawe, D.C. *et al.* (2008) found that lower milling ratios in the Philippines (0.64) compared to Thailand (0.66) made no difference to differential costs. Many millers in Thailand mentioned that competition had intensified in the past few years because of low interest rates that facilitated new entry and expansion of existing millers. Rice mills produce edible rice and hence, milling is a key step in post-production of rice (Kumar *et al.* 2016). The 95.00 per cent of rice processors are small-scale with low capacity and obsolete mills (GRiSP 2013).

MATERIALS AND METHODS

For this study Kancheepuram and Tiruvarur districts were selected for the study, in these districts, the area of cultivation with CO 51 multiplied in an exponential manner after it was released during 2013. Besides Tiruvarur district, Kancheepuram district also had higher estimated area coverage based on seed distribution from the University. The CO 51 seeds distributed from TNAU to Kancheepuram district were 6,517 kg and Tiruvarur, 3,942 kg. Fifteen rice millers in each respective selected district, comprising totally thirty millers were interviewed with the objective of knowing the expectations, trend and suggestions from the millers view point that might give valid insight for farmers on the rice production. Data were collected on the procurement parameters from the rice millers in both Kancheepuram and Tiruvarur district. The data were collected and analyzed with statistical software SPSS. Garrett's Ranking Technique was applied to study the preference of millers on procurement of varieties. The technique was used

to rank the preference mentioned by the millers on different factors and aspects of the procurement. It is used to find the most significant factor, which had influenced the millers in their procurement process. Founded on the Garret's Ranking technique, the study had the millers rank on different procurement parameters and outcome based on their preferences thereby converting into score value and rank with the help of the following formula:

$$\text{Percent position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

R_{ij} = Rank given for the i^{th} variable by j^{th} respondents

N_j = Number of variable ranked by j^{th} respondents

With the help of Garrett's Table, the percent position estimated is converted into scores by referring to the table given by Garret and Woodworth (1969). Then for each procurement parameter, the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered to be the most important procurement parameter.

RESULTS AND DISCUSSION

The preferences that are considered for procurement by the rice millers will be of immense use at the farmer's level. In order to trace the marketing channel and its preferences for procurement of CO 51, a survey was made rice millers.

(I) Area of operation

The capacity of the rice mill varied from mill to mill. Based on their requirement, the mill owners try to procure from different places or other districts besides their native district. Hence the area of operation was considered for the study.

From the table 1, in both the districts majority of the millers are operating in 2 to 3 districts Kancheepuram (73.33 per cent) and Tiruvarur district (53.34 per cent). However, besides their native district Kancheepuram, 20 per cent of Kancheepuram millers operate in Tiruvallur, Vellore, Tanjavur and Tiruvarur districts. But, majority of Tiruvarur millers used to procure from the neighboring districts namely Nagapattinam and Tanjavur besides Tiruvarur.

Table 1: Distribution of millers according to their area of operation (n= 30)

Sl. No.	Categories	Kancheepuram district (n= 15)		Tiruvarur district (n= 15)		Total millers (n=30)	
		No.	Per cent	No.	Per cent	No.	Per cent
1	One district	1	6.67	9	60.00	10	33.33
2	2-3 districts	11	73.33	5	33.33	16	53.34
3	>3 districts	3	20.00	1	6.67	4	13.33
	Total	15	100.00	15	100.00	30	100.00

Table 2: Quantity of rice varieties procured by the Rice millers at Kancheepuram during 2015-16 to 2017-18 (tonnes)

Sl. No.	Varieties	2015-16 (tonnes)	2016-17 (tonnes)	2017-18 (tonnes)	Total (tonnes)	Per cent share
1	CO 51	37200	39340	45600	122140	38.57
2	NLR 34449	29400	30950	29400	89750	28.35
3	ADT 37	22940	22750	25550	71240	22.50
4	BPT 5204	10400	10900	12200	33500	10.58
	Total	99940	103940	112750	316630	100.00

Table 3: Quantity of rice varieties procured by the Rice millers at Tiruvarur during 2015-16 to 2017-18 (tonnes)

Sl. No.	Varieties	2015-16 (tonnes)	2016-17 (tonnes)	2017-18 (tonnes)	Total (tonnes)	Per cent share
1	CO 51	7240	7275	9550	24065	25.30
2	BPT 5204	6280	4500	4700	15480	16.27
3	CR 1009 Sub 1	5770	6478	8070	20318	21.36
4	ADT 46	1090	900	1425	3415	3.59
5	ADT 45	3290	2970	4730	10990	11.55
6	ADT 51	700	700	500	1900	2.00
7	TKM 9	1800	2200	2300	6300	6.62
8	ADT 43	850	600	500	1950	2.05
9	IR 20	2100	2600	2950	7650	8.04
10	ASD 16	700	700	850	2250	2.37
11	CO 43	200	250	350	800	0.84
	Total	30020	29073	35925	95118	100.00

(II) Variety wise volume procured during past three years

Based on the survey, totally four varieties namely CO 51, NLR 34449, ADT 37 and BPT 5204 were procured by the mills in Kancheepuram district and totally eleven varieties were procured in Tiruvarur districts.

From the table 2 shows that, Kancheepuram district the millers were able to procure CO 51 at a higher rate when compared to other varieties during the three consecutive years. There was a linear increase in procurement of CO 51 from 37200 tonnes during 2015-16 to 45600 tonnes during 2017-18. There was a quantum jump of 23 per cent increase in procurement of CO 51 rice variety among traders, this show their shift in the preference on CO 51 procurement. This signifies that the variety was

highly adopted and being cultivated by farmers on a large scale. The variety, NLR 34449 stands next to CO 51, followed by ADT 37 and BPT 5204. Except ADT 37, all the other varieties belong to medium slender grain type category which is used for direct consumption. The variety, ADT 37 possesses short bold grain type suited for *idly* making.

In Kancheepuram district, the major share was by the variety CO 51 (38.57 per cent) followed by NLR 34449 (28.35 per cent), ADT 37 (22.50 per cent) and BPT 5204 (10.58 per cent). This clearly showed that the rice variety CO 51 was procured and milled in large quantity.

From the table 3 and Fig. 3, in Tiruvarur district, the varietal spectrum is very broad when compared to Kancheepuram district. Totally 15 varieties were procured by the millers in Kancheepuram and

Tiruvarur districts. There is always a specific region for CR1009 Sub1 due to the presence of coastal tail end region where it is prone to submergence. Even then, the rice variety CO 51 was procured at a higher rate every year (7240 mt during 2015-16, 7175 mt during 2016-17 and 9550 mt during 2017-18) with a growth of 20.00 per cent. The next variety was CR1009 Sub1 followed by BPT 5204, ADT 45, IR 20, TKM 9, ASD 16, ADT 51, ADT 43 and CO 43. The variety CR1009 Sub1 is predominantly used for idly making besides ASD 16. The variety TKM 9 is a red rice type which is marketed in Kerala. The other varieties like CO 51, ADT 45, ADT 43, CO 43, ADT 46 are suited for direct consumption. The spectrum of varieties received by mills at Tiruvarur district is so wide that it has 11 rice varieties. Even when there is a wider spectrum, the share of CO 51 is 25.30 per cent followed by CR1009 (21.36 per cent) and BPT 5204 (16.27 per cent). The miller's preference for CO 51 is due to its fineness and high milling return. In the present study, the share of CO 51 was relatively higher in both the districts when compared to other varieties. This may be attributed to the reason that the variety was also adopted in other seasons namely *samba/ thaladi* and *navarai* (Tamil Nadu state Department of Agriculture, 2019-20). Hence the total quantity procured at the millers level is so high even though it was originally recommended for *kuruvai/ sornavari* and *navarai* season. The preference of the variety CO 51 is due to high milling (68.00 per cent), fineness, resistance to blast and BPH (Brown Plant Hopper) when compared to other varieties.

(III) Parameters of procurement

Rice millers fix certain parameters in their perspectives to decide for their procurement. The parameters were collected with ranks and Garrett's Ranking Technique was used to analyze and rank the parameters of the rice millers. The results are presented in Table 4.

The fineness of rice and keeping quality were the major deciding parameters for procurement by rice millers with a Garrett's score of 31.38. Fineness of rice fetches a premium price in the consumer market besides the keeping quality facilitates the miller to stock the produce for a long time till getting highest price in the market.

Table 4: Garrett's ranking for parameters of procurement of millers in Kancheepuram and Tiruvarur district (n= 30)

Sl. No.	Parameters	Garrett's Score	Rank
1	Low broken rice	93	I
2	Quicker returns	87	II
3	High milling	55	III
4	Whiteness of rice	45	IV
5	Fineness of rice	31	V
6	Keeping quality of rice	31	V

The price of rice is directly proportional to aging of rice as it has good cooking qualities like taste. Whiteness of rice was the next preferred parameter by the millers with a Garrett's score of 45. This was followed by high milling outturn (score 55), quicker returns (score 87) and low broken rice (score 93). The findings are corroborate with findings of Dauda, S.M. 2012.

CONCLUSION

This study presented a snapshot of trader's preferences on rice varieties for procurement. The results shows that, more than half of the millers (53.34 per cent) are operating in 2 to 3 districts, The miller's preference for CO 51 due to its fineness and high milling return. The fineness of rice and keeping quality were the major deciding parameters for procurement by rice millers with a Garrett's score of 31.38. Fineness of rice fetches a premium price in the consumer market besides the keeping quality facilitates the miller to stock the produce for a long time till getting highest price in the market. The price of rice is directly proportional to aging of rice as it has good cooking qualities like taste. Preference of rice millers for any variety is fineness and keeping quality. This message may be taken to farmers to decide the variety for getting premium price. This helps the policy makers in planning the policies related to procurement for the traders.

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