



E-ISSN: 2278-4136

P-ISSN: 2349-8234

www.phytojournal.com

JPP 2020; Sp 9(5): 183-189

Received: 15-07-2020

Accepted: 16-08-2020

BS ReddyAssistant Professor, College of
Agriculture, B'Gudi, Yadgir,
Karnataka, India**Shashidhara KK**Assistant Professor Dept. of
Agril. Extension, College of
Agriculture, Bheemarayana
Gudi, Karnataka, India**Chandrashekhara SM**Research Scholar, Department of
Economics, Gulbarga University,
Gulbarga, Karnataka, India**Shivakumara C**Assistant Professor, Department
of Agricultural Economics,
College of Agriculture, Hassan,
Karnataka, India

Innovative approach in grading of pulses introduced through NCDEX in Karnataka

BS Reddy, Shashidhara KK, Chandrashekhara SM and Shivakumara C

Abstract

The study was conducted in APMC, Gulbarga where grading system for tur and bengalgram was introduced on pilot bases since June 2012. The study revealed that 73 percent of respondents received higher price due to sale of graded produce. Among these respondents, 50 of sample farmers opined that they have received 5% higher price for the sale of graded produce followed by 30 and 20 percent respondents received 7% and 10% higher price for the sale of graded produce respectively. The major problems regarding grading of tur and bengalgram were non-availability of information on grade standards and grading facilities at village/hobli level (69.67%), respondents also opined that grade standards specified by authorities/buyers are very high (53.33%). However, they have received higher price for their graded produce (96.67%) compared to neighbor farmers who have sold ungraded produce in the same market. The other major advantages enjoyed by respondents are quickly settlement of trade (90%) followed by Payments received immediately after transaction (96.67%), Marketing cost incurred on handling, cleaning and grading was low (86.67%), Soot was not deducted by trader due to graded produce at APMC grading laboratory (76.67%), Produce is sold within a day with better price due to graded produce (93.33%) due to Price discovery mechanism is very transparent, farmers themselves are quoting price for their graded produce. Farmers benefitted by selling graded produce through E-tendering by way of transparent transactions, lower marketing cost, easy access to pledge loan, immediate payment, better price discovery mechanism, etc. Other side dal millers-cum-traders have benefitted procuring graded produce like higher efficiency in the use of labour, edible oil and raw material, saving in time, reduction in wastage, high recovery percentage etc. 62-65 percent of millers opined that graded produce yielded 80 percent recovery as compared to ungraded produce.

Keywords: Pulses, NCDEX, APMC

Introduction

In Karnataka, there are 146 APMC's and 344 sub market yards. Currently most APMC's are not automated and all the duties are carried out manually. Providing information to farmers, transparency in transaction, and better price realization for farmers are main objectives of Agricultural Marketing System in India. In this regard Information Technology will play vital role and will simplify the work process to a greater extent. Introduction of E-tendering system is one of measure in solving non-transparency in transaction and other mal practices problems faced by farmers during marketing of produce.

Assessment of marketing methods and suggesting a better one for the farmers to overcome the inherent problems in marketing is very important. Generally, the price of tur and bengalgram prevails low in the early post harvest period due to more arrivals in the market and later on prices go up. E-tendering provided synergy among the existing marketing agencies with its improved technology and reach through the online system as it brought a variety of benefits such as price transparency, better price realization for farmers and avoids physical losses during marketing process. The E-tendering system enhanced the efficiency of existing value chain of commodities by developing appropriate platforms for modern spot markets. Many study conducted by Agricultural Universities revealed that growers were able to reduce the marketing cost by 20-30 percent, and the farmers could realize, on an average 5-10 per cent higher price for their produce as compared to traditional method.

Many sorts of agricultural commodities are not homogeneous, but instead vary according to a set of quality characteristics. Grading information appears to be relevant to purchasing decisions, but incomplete grades are meant to summarize a variety of quality characteristics, however, these differ in their value according to both the commodity and place in the production chain. This variation across commodities may explain differences in the conclusions drawn by different authors evaluating the welfare consequences of grading services

Corresponding Author:**BS Reddy**Assistant Professor, College of
Agriculture, B' Gudi, Yadgir,
Karnataka, India

Therefore, the focus of growth in rural economy has to shift from production to processing and marketing of agriculture produce. Although, some of the governments have given permission to agencies (e.g. ITC, Cargill etc.) to operate as private mandies, problems related to transparency and fair price discovery persisted. Therefore, NCDEX took the initiative to launch a National Spot Market. The plat form of NCDEX is used for E-tendering. This would help to improve transparency in transaction and better competition among the traders and dal millers. The farmer would stand empowered by virtue of the electronic platform which would extend the reach to buyers across the market. This project is also called as Mandi Modernization Project.

Gulbarga APMC is one of the biggest market in Karnataka and major commodities transacted are tur, bengalgram and other minor pulses. In Karnataka, pulses are mainly grown in northern districts and Gulbarga district alone accounts 60-70% of total pulse production in the state. Gulbarga APMC is adopted E-tendering systems through NCDEX for tur and bengalgram to ensure competitive price for farmers produce. Grading of tur was introduced on pilot basis at APMC yard Gulbarga since 6th June, 2012. An Independent assaying agency NCMSL was appointed for two months to examine assaying of tur by evaluating important characteristics viz. moisture content, broken and damaged grain, foreign matter, weeviled grains, etc.

In view of the above, study was conducted with the following specific objectives.

Study the impact of grading of tur and bengalgram in E-tendering systems through NCDEX Benefits derived by farmers, traders and dal miller through grading system introduced for tur and bengalgram traded in E-tendering systems of NCDEX, and Introduction of grading system at farmers/village level and necessary measures to be followed for bringing graded produce to the market in future.

Methodology

APMC has introduced grading system for the tur and bengalgram in Gulbarga market yard. It was apparent from the discussion with APMC, KSAMB & NCDEX officials, Progressive farmers, Traders and Dal millers, etc. that grading system is need of the day because Gulbarga tur and bengalgram dal were highly demanded due to its taste, aroma, cooking quality, etc. in the national market. The present study pertains to Gulbarga APMC main market yard where grading system for tur and bengalgram was introduced on pilot bases since June 2012. The grading procedure followed for the aforesaid commodities is that the sample is drawn from produce brought by the farmer at the gate entry on random basis. The collected sample produce is sent to grading

laboratory for deciding produce in which grade falls. The results of the graded produce will be sent to the concerned commission agents shop and same will be entered in the E-tendering machine along with the farmer's price for which he is ready to offer produce for sale.

To study the impact of pilot project on grading of tur and bengalgram through E-tendering system, 30 sample farmers were drawn using purposive random sampling methods, who have graded their produce in newly established grading laboratory. The, respondents who have sold their graded produce through E-tendering system were interviewed and opinions were compiled for meaning full results. Further, 10 traders and 10 dal millers were interviewed to elicit required information on grading of tur and bengalgram. To study the impact of grading primary as well as secondary data were used and data pertained to the year 2012-12 (Since June-12). The primary data was collected by using pre-tested questionnaires on quantity of produce graded, price received, produce sold through different market agencies, etc. The secondary data was collected on prices of tur and bengalgram prevailed during the study period.

Tabular and graphical analysis was used to analyze benefit derived by the selected sample farmers, traders and dal millers. Further, pricing pattern, marketing costs and returns, additional income earned by respondents, etc. were also worked out and are presented in tabular form to facilitate easy comparisons.

Results and Discussion

The awareness about grading system introduced in APMC, Gulbarga and additional price received for graded produce is presented in table-1&Fig-1 indicated that 87 percent of the sample farmers are fully aware of grading laboratory established for tur and bengalgram at Gulbarga APMC yard. However, 13 percent of sample respondents are moderately aware about existence of the same. Further, 73 percent of respondents received higher price due to sale of graded produce. Among these respondents, 50 of sample farmers opined that they have received 5% higher price for the sale of graded produce followed by 30 and 20 percent respondents received 7% and 10% higher price for the sale of graded produce respectively. Farmer-respondents are asked to give reasons for selling produce in APMC Gulbarga on NCDEX grading plat form through E-tendering. Expecting good price for the produce, low marketing costs, immediate payment, bank finance against produce/pledge loan facilities and grading facilities by APMC working towards betterment of the farmers were the main reason for participation in selling graded produce through E-tendering at APMC yard, Gulbarga.

Table 1: Opinion of sample farmers on grading of tur and bengalgram

SI No.	Opinions	Percent	No. of Respondents
1.	Aware of grading system introduced in APMC yard, Gulbarga	86.67	26
2.	Total sample farmers participated in Grading system	100.00	30
3.	Received higher price due to grading of their produce	73.33	22
4.	10 % additional price received due to grading of their produce	20.00	06
5.	7 % additional price received due to grading of their produce	30.00	09
6.	5 % additional price received due to grading of their produce	50.00	15
7.	No. of sample farmers sold graded produce through E-tendering	100.00	30

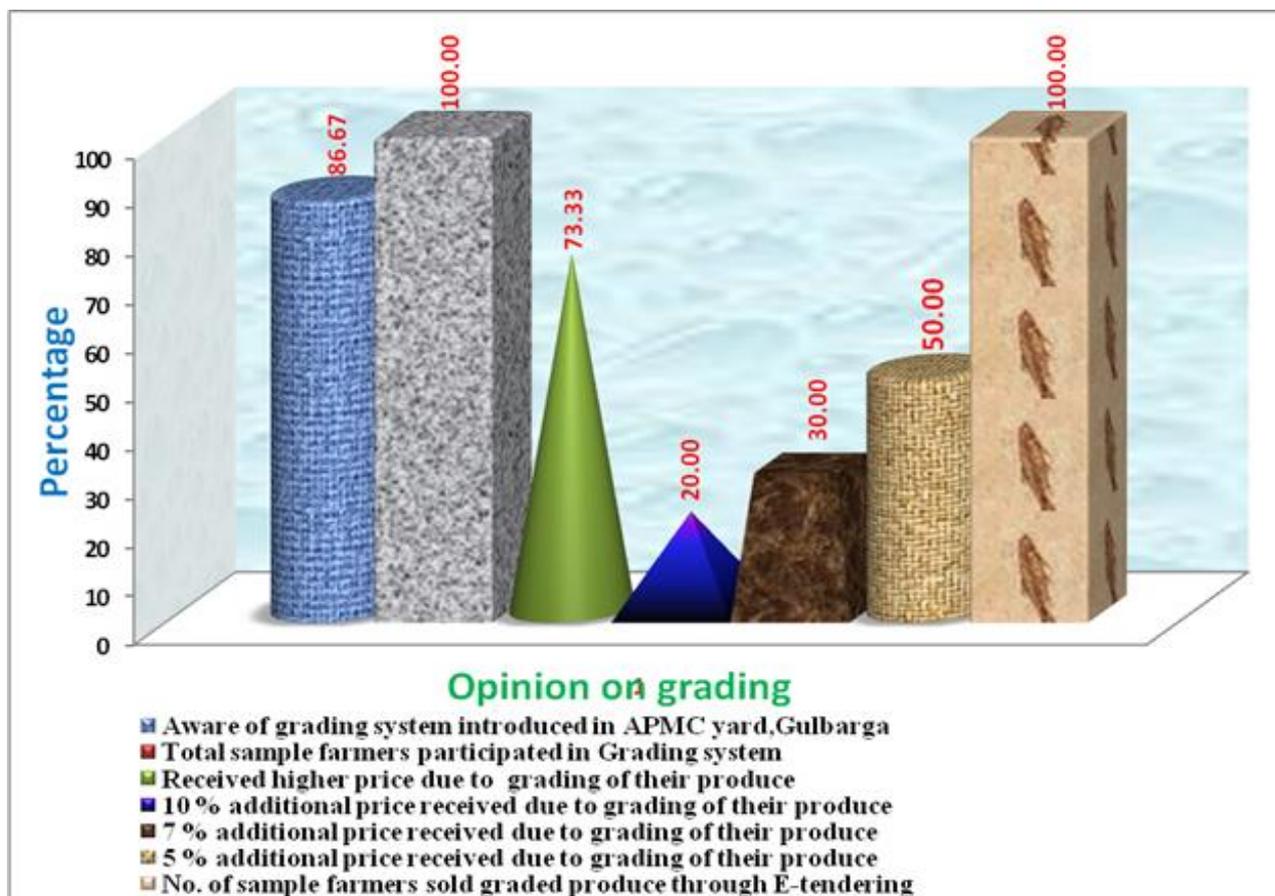


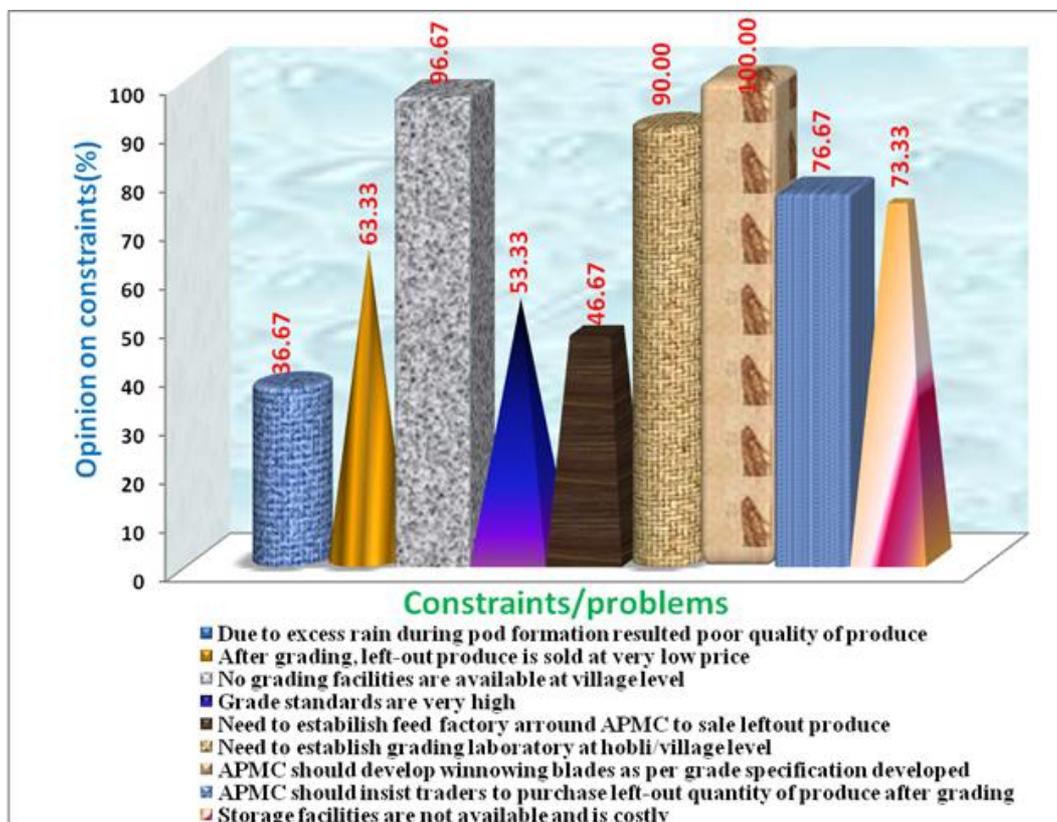
Fig 1: Awareness and opinion of grading system introduced at APMC Yard, Gulbarga

Table-2 presents problems faced by sample farmers for grading of tur and bengalgram. It could be seen from the table that excess rain and cold climate during pod formation stage resulted poor quality produce as opined by 37 percent of respondents. Further, 63 percent of respondents reported that after grading, whatever left-out produce of poor quality is available was sold at very low price. They have also expressed major problems regarding grading of tur and bengalgram were non-availability of information on grade standards and grading facilities at village/hobli level (69.67%), they also feel that grade standards specified by authorities/buyers are very high (53.33%). Further, 46.67% and 90.00% of respondents are opined that there is need to establish feed producing factory in and around APMC and grading laboratory at village level along with training programme to be organized respectively. The other most important constraints are non-availability of winnowing blades of the harvesting machine as per the grade specified by the grading laboratory established at APMC (100%) and buyers/dal millers are not purchasing left-out produce along with graded produce, which is forcing farmers to sale left-out produce at very low price (76.67%). The overall opinion of the respondents revealed that Awareness programmes on grading of tur and bengalgram should be organized by the concerned agencies viz. Market Committee and Marketing Board collaboration with line department, Agricultural Universities, MYIRADA and other NGO's to encourage the farmers to make use of grading platform available for sale of tur and bengalgram. To reach out a larger section of growers the aforesaid agency should disseminate comparative prices

of graded and ungraded produce through mass media to attract all categories of farmers. There is need to encourage farmers by providing incentives like 2-5% premium price for their produce, who brought graded produce for sale in the market and who is ready to go for grading of his produce in the grading laboratory established at APMC yard, Gulbarga. The study also indicated the advantages of grading of their produce, who has undergone grading of their produce in grading laboratory of APMC and is presented in table-3&graph-3. All the respondent-farmers revealed that they have received higher price for their graded produce (96.67%) compared to neighbor farmers who have sold ungraded produce in the same market yard. The other major advantages enjoyed by respondents are quickly settlement of trade (90%) followed by Payments received immediately after transaction (96.67%), Marketing cost incurred on handling, cleaning and grading was low (86.67%), Soot was not deducted by trader due to graded produce at APMC grading laboratory (76.67%), Produce is sold within a day with better price due to graded produce (93.33%). Further, respondents-farmers are in opinion that Government should provide storage facilities at free of cost as expressed by 83.33 percent of respondents followed by godwons should be established at hobli/village level (80%) and grading should be made mandatory for all the produce sold in APMC yard and this facilities should be given at free of cost. Aforementioned section revealed that in all the APMC yard grading laboratory should be established and grading facilities should be given at free of cost and the farmers who wish to sale graded produce should be encouraged.

Table 2: Problems faced by sample farmers for grading of Tur and Channa

SI No.	Problems/Constraints	Percent	No. of Respondents
1.	Due to access rain during pod formation resulted poor quality of produce	36.67	11
2.	After grading, left-out produce is sold at very low price	63.33	19
3.	No grading facilities are available at village level	96.67	29
4.	Grade standards are very high	53.33	16
5.	Need to establish feed factory around APMC to sale left-tout produce	46.67	14
6.	Need to establish grading laboratory at Hobli/Village level	90.00	27
7.	APMC should develop winnowing blades as per grade specification developed	100.00	30
8.	APMC should insist traders to purchase left-out quantity of produce after grading	76.67	23

**Fig 2:** Problems faced by sample farmers for grading of Tur and Bengalgram**Table 3:** Advantages of grading system introduced at APMC, Gulbarga as opined by sample farmers

SI No.	Advantages and suggestions	Percent	No. of Respondents
1.	Grading system should be made mandatory for all the produce arrived in a market	86.67	26
2.	Received higher price compared to ungraded produce	96.67	29
3.	Settlement of trade and payment was very quick	90.00	27
4.	Payment was received immediately after transaction	96.67	29
5.	Marketing cost incurred on handling, cleaning and grading was low	86.67	26
6.	Because of grading, no shoot is deducted by trader	76.67	23
7.	Because of grading produce was sold within a day with better price	93.33	28
8.	Storage facilities are not available and is costly	73.33	22
9.	Govt/APMC should provide storage facilities at free of cost	83.33	25
10.	Storage facilities and pledge loan should be available at Village level	73.33	22
11.	Rural gowdons should be established atleast Hobli/Village level	80.00	24

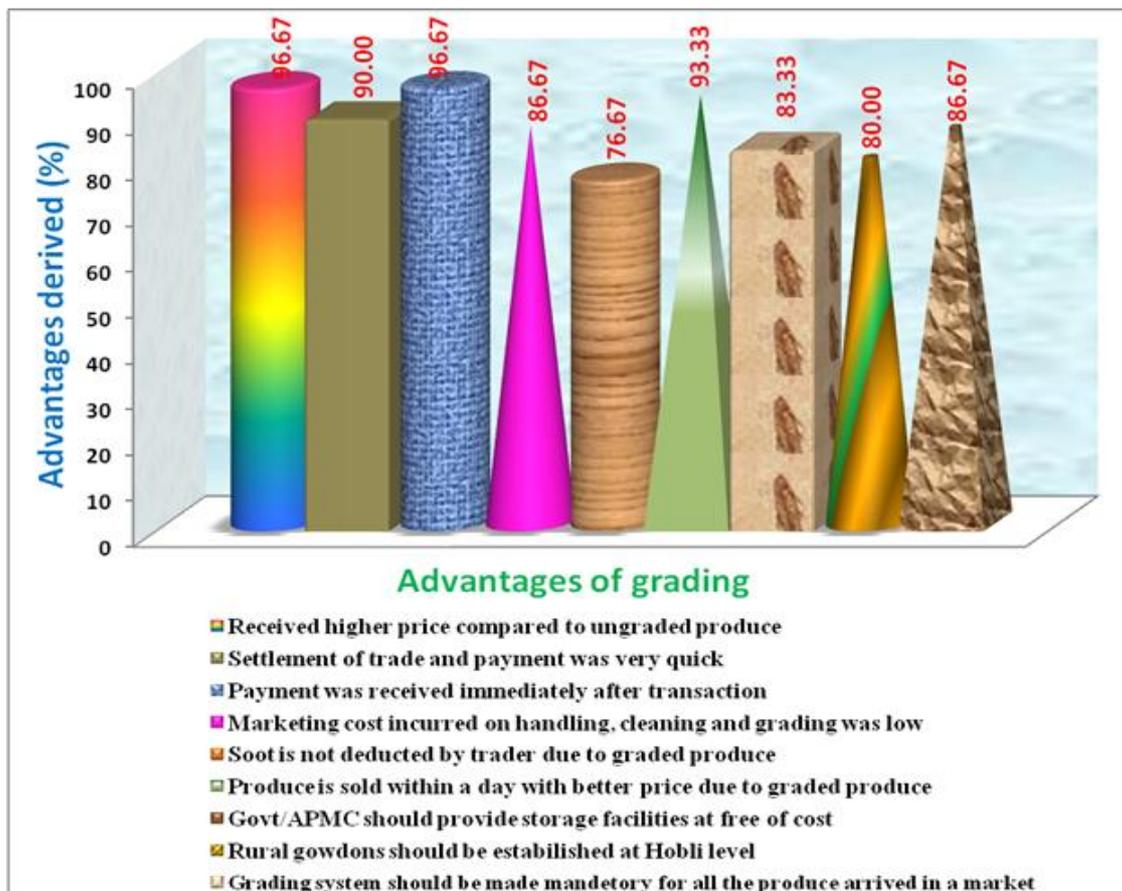


Fig 3: Opinion of respondents on advantages of grading system introduced at APMC, Gulbarga

Opinion of Traders and Dal millers

Dal millers are the most important buyers for the tur and bengalgram in Gulbarga APMC yard in addition to government agency who procure aforesaid produce at minimum support price as per the government MSP policy. The study on impact of grading system introduced on pilot basis has to be studied in a symmetric way from the point of

producers and consumers. The details of constraints faced by respondent-farmers and benefits derived were studied in the above sections. Further, it is equally important to know the acceptance of grade standards by dal miller/consumer. In this regard 10 each of traders 10 dal millers were interviewed to elicit required information.

Table 4: Advantages of grading system introduced at APMC, Gulbarga as opined by trader/dal millers

Sl. No.	Opinions of traders and dal millers	Percent	No. of Resp -ondents
1.	Purchase of graded produce requires less number of labours		
a.	in handling the produce	95.00	19
b.	in cleaning of produce	100.00	20
c.	in soaking produce in water	95.00	19
d.	in drying, packing, etc.	90.00	18
2.	Consumer is going to get dal at cheaper rate	100.00	20
3.	Recovery percentage will be around 80% instead of 60% for ungraded produce	90.00	18
4.	Better market for Gulbarga dal in the national market	100.00	20
5.	Saving of labour, time and edible oil used in processing of dal	100.00	20
6.	Wastage can be minimised	85.00	17
7.	Use of unscientific blades in harvesting machine leads to poor quality produce	75.00	15
8.	No need to go for sortex machine which required huge investment	85.00	17
9.	Encourage for establishment of feed factory for utilising left-out tur produce	100.00	20
10.	Need to advise farmers to utilise left-out produce as a cattle feed	85.00	17
11.	Farmer brings graded produce, Gulbarga dal will capture foreign market	90.00	18

The table-4 reveals the advantages derived by trader/dal millers at Gulbarga APMC. It is clear from the table that dal millers have took maximum advantages in the farm of efficiency in the use of labour, edible oil and raw material, saving in time, reduction in wastage, high recovery percentage etc. Further, as opined by dal miller, graded produce is shown 80 percent recovery compared to ungraded produce (62-65%). They have also opined that efficiency in

processing will help in selling dal at reasonable price to the consumer and paying remunerative price to the farmers. The grading laboratory established in APMC will help dal millers and traders to capture larger market share in dal market of the country. Due to aforesaid advantages, even dal millers are ready to pay higher price to the farmers for procuring graded tur and bengalgram.

Conclusion

E-tendering provided synergy among the existing marketing agencies with its improved technology and reach through the online system as it brought a variety of benefits such as Price discovery mechanism is very transparent, farmers themselves are quoting price for their graded produce. Awareness on quality characteristics/grade specification of tur and bengalgram are needed to be created by concerned agencies to reach all categories of farmers in Gulbarga district meet the grade specifications. After grading of the produce, the left-out quantities of tur and bengalgram were sold at very low price. Farmers benefitted by selling graded produce through E-tendering by way of transparent transactions, lower marketing cost, easy access to pledge loan, immediate payment, better price discovery mechanism, etc. Dal millers –cum-traders have benefitted procuring graded produce like higher efficiency in the use of labour, edible oil and raw material, saving in time, reduction in wastage, high recovery percentage etc. Graded produce is shown 80 percent recovery as compared to ungraded produce (62-65%) and are also ready to go for establishing feed manufacturing unit if authority permits. Hence, Awareness programmes on grading of tur and bengalgram should be organized by the Market Committee and Marketing Board in collaboration with Line Department, Agricultural Universities, NGO's to encourage the farmers to make use of grading platform available for selling graded tur and bengalgram. To reach out a larger section of growers the aforesaid agency should disseminate comparative prices of graded and ungraded produce through mass media to attract all categories of farmers. Further, it is necessary to encourage farmers by providing incentives in the form premium price (2-5% higher price) for their produce, who bring graded produce for sale in the market and who is ready to go for grading of his produce in the grading laboratory established at APMC yard, Gulbarga. It is necessary to establish more number of grading laboratory at the village/hobli level and training on grade standards needs to be emphasized. Sophisticated instruments required in determining precisely the qualitative characteristics of redgram and bengalgram crops must be provided to all the markets. Along with the instruments, technically skilled staff must be provided to operate these instruments. A uniform set of grade specifications must be followed for the commodities in all the markets, so as to inject confidence among the producers of the commodities of specified grade and to get the premium prices. This would go a long way in making the agricultural marketing more organized.

References

1. Agillon, Sardido AL. Grading and standardization of farm products in the Philippines, *Journal of Agriculture Economics and Development*. 1979; 9(1): 96-104.
2. Avinash CS, Reddy BS. Comparative economic efficiency of modern and traditional redgram processing mills in Karnataka. *Indian Journal of Economics and Development*. 2014; 2(5):103-111.
3. Balappa Shivaraya. Production, marketing and processing of redgram in Gulbarga district-An economic analysis. M.Sc. (Agri) Thesis. University of Agricultural Sciences, Dharwad, 1997.
4. Balappa Shivaraya, Hugar LB. A study of integration of markets for onion and potato in Karnataka State. *Agricultural Marketing*. 2002; 44(3):30-32.
5. Balappa SR, Hugar LB. Trends and variations in arrivals and prices of vegetables in Northern Karnataka. *Indian Journal of Agricultural Marketing*. 2002; 16(2):11-17.
6. Balappa SR, Hugar LB. An economic evaluation of onion production and its marketing system in Karnataka. *Agricultural Marketing*. 2003; 46(2):22-26.
7. Basavaraj A. Financial analysis of KSFC. An internship report. Department of Management, Central University of Karnataka, 2012, 106.
8. Dikshit AK, Reddy BS, Manohar NS. Demographic changes in small ruminant population in India: Some inferences from different livestock regions. *Indian Journal of Animal Sciences*. 2012; 82(2):187-193.
9. Dixit AK, Singh MK, Reddy BS, Manohar NS. Potential of wastelands for mixed farming system in India. *Range Management and Agroforestry*. 2012; 33(2):118-122.
10. Dixit AK, Singh MK, Roy AK, Reddy BS, Narendra Singh. Trends and contribution of grazing resources to livestock in different states of India. *Range Management and Agroforestry*. 2015; 36(2):204-210.
11. Humbarwadi B, Narasimhan MK. How scientific grading helps to save time and labour of Market functionaries – A case study of cotton. Research paper, Research wing of Karnataka. Agricultural Marketing Board, Bangalore, Annual Publication. 1981, 25-28.
12. Goudappa SB, Reddy BS, Chandrashekhar SM. Farmers perception and awareness of crop insurance in Karnataka. *Indian Research Journal of Extension Education*. 2012; 12(2):218-222.
13. Goudappa SB, Surekha S, Reddy BS. Participation of farm women in decision-making process on agricultural operations in Yadgir district of Karnataka. *Rajasthan Journal of Agricultural Extension*. 2012; 10(2):103-108.
14. Hugar LB, Balappa Shivaraya, Yeriswamy J. Dynamics of consumer behaviour in vegetable marketing. *Indian Journal of Marketing*. 2001; 31(9-10):27-33.
15. Manohar NS, Dixit AK, Reddy BS. Market Integration and Price Behavior in Maize Market: A Case Study of Rajasthan. *Indian Journal of Agricultural Marketing*. 2012; 26(1):123-130.
16. Narendra Singh, Dixit AK, Reddy BS, Surendra BK. Instability in Rice production in Gujrat: A decomposition analysis. *Asian Journal of Economic and Empirical Research*. 2014; 1(1):6-9.
17. Narendra Singh Manohar, Dikshit AK, Reddy BS. Marketing pattern of maize an insight household survey results in India: A case study. *International Journal of Retailing & Rural Business Perspectives*. 2013; 2(1):52-56.
18. Reddy BS, Amrutha T, Joshi, Suresh Patil, Hiremath GM. Marketing of pulses in N-Spot E-auction and Spot market E-tendering system-A case study of Gulbarga market. *Indian Journal of Agricultural Marketing*. 2013; 27(4):123-130.
19. Reddy BS, Chandrashekhar SM, Dikshit AK, Manohar NS. Price trend and integration of wholesale markets for onion in metro cities of India. *Journal of Economics and Sustainable Development* 2012; 3(7):120-129.
20. Reddy BS, Rajeshwari BN, Goudappa SB, Chandrashekhar SM. Market variability and price integration in major Banana markets of India. *International Research Journal of Agricultural Economics and Statistics*. 2012; 3(2):192-196.
21. Savita K Patil, Hugar LB, Reddy BS. Efficiency of paddy farms in India: An empirical evidence of TBP area of

- Karnataka state. *Journal of Economics and Sustainable Development*. 2012; 3(6):43-52.
22. Shashidhara KK. Adoption of eco-friendly technologies by cotton growers. *Indian Research Journal of Extension Education*. 2012; 112(4):217-221.
 23. Shashidhara KK, Manjunath L. Adoption of eco-friendly management practices by vegetable growers of North Karnataka. *International Journal of Agricultural Sciences*, 2008; 4(2):480-484.
 24. Shivakumara C, Reddy BS, Satihal DG, Suresh S Patil. Production performance and mortality rate under sheep and goat farming in Karnataka. *Journal of Experimental Zoology India*. 2016; 19(1):1481-1484.
 25. Veena B, Reddy BS, Sunand Sharan. Effect of incorporation of soy flour on the quality of papad. *Journal of Biology, Agriculture and Healthcare*. 2012; 2(5):119-126.
 26. Vinayak SS, Reddy BS. Technological interventions for optimum use of resources under pulses production in Karnataka. *Indian Journal of Economics and Development*. 2015; 3(11):1-8.
 27. Wader LK, Praduman Kumar. A study on Quality and Non-quality characteristics influencing price of cotton marketing in Karnataka. *Agricultural Economics Research Review*. 1996; 9(1):13-20.