



A Study of Sorghum Storage and Packaging Cost by APMCs Commission Agents in Marathwada Region

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Abstract

The package must look attractive and “catch the eye” of prospective purchasers, and it should also be easy to open and dispense the product. Value for money in packaging is more important than looking for the lowest price. A cheap but dimensionally variable container could cause more damage during production or an increase of „leakers“ in the market place thereby affects the sale of the product. The main aim of this paper is to study of APMCs Commission Agents and to know Cost of Sorghum Storage and Packaging in Marathwada Region. This study is based on primary as well as secondary data. Researchers selected 195 Commission Agents from 39 APMCs for this study. The primary data has been collected through the questionnaire, schedule and interview method.

Keywords: Packaging, Sorghum storage and Cost of Sorghum storage and Packaging

Introduction

The sorghum is one of the main staple food for the world’s poorest and most food insecure people. Sorghum is important source of feed, fodder and bio fuel. The major sorghum producing Indian states are Maharashtra, Karnataka, Tamil Nadu, Rajasthan and Andhra Pradesh. The growth trend analysis suggests that area under sorghum cultivation in Maharashtra states was shrinking over the period of time. The growth trend analysis of sorghum production in Maharashtra suggests that it was more or less stagnated, but growth trend of sorghum yield suggest that it was growing with a compound growth rate of 1.32 per cent. Year to year fluctuation in area allocated by farmers under sorghum cultivation in the state was very high *i.e.* 16.83 per cent. Promotion of value added products for post rainy season sorghum, through linking farmers to input dealers, credit agencies and end users and providing



financial support and an enabling environment for the processing sector, will lead to a win – win situation, benefiting both the producer / processor and the consumer.

Good packaging is necessary for easy handling, transportation and storage. The sorghum is transported from the field (threshing floor), to the market and warehouse in gunny bags. Good quality gunny bags, either new, or used more than once, with proper treatment, are necessary to avoid spoilage and to protect the sorghum from moisture and insect attack. Packaging and branding are becoming important for the sale of post rainy season sorghum in urban areas, particularly through supermarkets. Post rainy season sorghum is consumed exclusively as food, owing to the higher quality of the grain and hence it commands a significant price premium. Therefore institutional innovations that concentrate on improving post-harvest value addition technologies, establishing more effective and sustainable linkages between farmers and the processed food industry is required.

Losses in grain yield and seed size occur due to premature drying and lodging. Stunted growth and smaller stalks than normal, due to infection result in loss of quality and quantity of fodder. Minimal doses of nitrogen fertilizer and low plant densities reduce charcoal rot; (2) Crop rotation also reduces the disease. Sorghum as a mixed crop also suffers less damage by charcoal rot than sole crop; (3) Moisture conservation practices like wheat straw mulch will provide marginal advantage in checking the disease symptoms; (4) Growing varieties and hybrids resistant to predisposing stress conditions is of more economical value; (5) Soil treatment with Thiram @ 4.5 kg ha⁻¹ at sowing reduces the charcoal rot by 15%.

Literature Review

Gavin Williams (2005) noticed that the increased use of packaging provides a physical barrier between a product and the external environment thereby ensuring hygienic conditions and reducing the risk of product wastage due to contamination. This is particularly important in the case of food and beverage products. In the lifecycle of food products, the highest energy input takes place during the production process. *Narashns and Sunil (2020)* focused that with respect to shelf life, agricultural commodities can be classified as perishables (fruit and vegetable) and durables (grains and pulses). Their shelf life can be increased if preserved with effective technique followed by proper storage. *P Parthasarathy Rao (2011)* suggested that good packaging is necessary for easy handling, transportation and storage. The sorghum is transported from the field (threshing floor), to the market and warehouse in gunny bags. Good quality gunny bags, either new, or used more than once, with proper treatment, are necessary to avoid spoilage and to protect the sorghum from moisture and insect attack.

Methodology

This study is based on primary as well as secondary data. It attempts to investigate APMCs Commission Agents spent on cost of sorghum storage and packaging in Marathwada region. The descriptive and survey method through structured questionnaire and discussion has been adopted for the research. Researchers selected 195 Commission Agents from 39 APMCs for this study 5 commission agents had selected from each APMCs. The primary data has been collected through the questionnaire, schedule and interview method. The primary data has been collected through the questionnaire, schedule and interview method.

Objectives of the Study

1. To know annual store and equipment use to store of sorghum by commission agents
2. To study of APMCs commission agents and currently used sorghum storage and packaging methods.
3. To evaluate the cost of storage and packaging of sorghum by commission agents

Limitations of the Study

The study has been restricted to one regions of the Maharashtra namely, Marathwada region. Sample of the study has been restricted to APMCs commission agents from four districts in Marathwada. Shortage of time and inadequacy of finance restrict the research to a shorter area.

Results and Discussions

Sorghum Store by Commission agents (on Average per Year)

Table-1 - Average Annual Store of Sorghum by Commission Agents

Sorghum Store (per year)	District wise Number of Commission agents				Total
	Beed	Jalna	Parbhani	Osmanabad	
Below 50 quintals (5 tone)	6 (12.00)	5 (12.50)	9 (15.00)	8 (17.78)	28 (14.36)
50- 100 quintals (5-10 tone)	18 (36.00)	17 (42.50)	19 (31.67)	12 (26.67)	66 (33.85)
100-150 quintals (10-15 tone)	12 (24.00)	11 (27.50)	16 (26.67)	13 (28.89)	52 (26.67)
150-200 quintals	9 (18.00)	5 (12.50)	9 (15.00)	8 (17.78)	31 (15.90)
Above 200 quintals	5 (10.00)	2 (5.00)	7 (11.67)	4 (8.89)	18 (9.23)
Total	50 (100.00)	40 (100.00)	60 (100.00)	45 (100.00)	195 (100.00)

(Source: Field Survey - 2021-22)

Note: The figures in parentheses indicate percentage to column total

Table-1 indicates that about 33.85 per cent commission agents have stock of 50 to 100 quintals of sorghum per year; 26.67 per cent Commission agents have 100-150 quintals of sorghum per annum; 15.90 per cent of Commission agents have stock of 150 to 200 quintals of sorghum per year; 14.36 per cent Commission agents stock Below 50 quintals of sorghum per year; And 9.23 per cent Commission agents stock more than 200 quintals of sorghum per year. It was observed that majority of the Commission agents have store 50- 100 quintals sorghum per year in Marathwada.

Equipment Use to Store Sorghum

All grains, sorghum should be stored in a cool, dark place, preferably in a container with a tight fitting lid, like a jar. The whole kernel survives for many years in a cool dark place in a tight-fitting container

Table-2

Equipment Use to Store Sorghum

Equipment	District wise Number of Commission agents				Total
	Beed	Jalna	Parbhani	Osmanabad	
Plastic bags	24 (48.00)	20 (50.00)	25 (41.67)	20 (44.44)	89 (45.64)
Metal box	12 (24.00)	11 (27.50)	16 (26.67)	13 (28.89)	52 (26.67)
Traditional bags	14 (28.00)	9 (22.50)	19 (31.66)	12 (26.67)	54 (27.69)
Total	50 (100.00)	40 (100.00)	60 (100.00)	45 (100.00)	195 (100.00)

(Source: Field Survey - 2021-22)

Note: The figures in parentheses indicate percentage to column total

Data indicated in the table-2 that 45.64 per cent of Commission agents use plastic bags to store sorghum; followed by 26.67 per cent of Commission agents used Metal box for store sorghum; 27.69 per cent Commission agents had used Traditional bags to store sorghum. It was noticed that in all districts most of Commission agents was used plastic bag to store sorghum.

Place of Sorghum Store

The sorghum should be stored in a cool, dark place, preferably in a container with a tight fitting lid, like a jar. The whole kernel survives for many years in a cool dark place in a tight-fitting container. In table-3 shows that place of Sorghum store by Commission agents.

Table -3 - Place of Sorghum store by Commission agents

Place of Storage	District wise Number of Commission agents				Total
	Beed	Jalna	Parbhani	Osmanabad	
At own warehouse	7 (14.00)	6 (15.00)	9 (15.00)	8 (17.78)	30 (15.38)
At adat shop	18 (36.00)	16 (40.00)	28 (46.67)	14 (31.11)	76 (38.97)
At market committee warehouse	17 (34.00)	15 (37.50)	14 (23.33)	16 (35.56)	62 (31.79)
At government warehouse	8 (16.00)	3 (7.50)	9 (15.00)	7 (15.56)	27 (13.85)
Total	50 (100.00)	40 (100.00)	60 (100.00)	45 (100.00)	195 (100.00)

(Source: Field Survey - 2021-22)

Note: The figures in parentheses indicate percentage to column total

It was pointed from table-3 that 38.97 per cent majority of Commission agents store sorghum at adat shop; 31.79 per cent of Commission agents store sorghum at market committee warehouse and only 15.38 per cent Commission agents store their sorghum at own warehouse . 13.85 per cent of Commission agents store sorghum at government warehouse. It is conclude that most of Commission agents store their sorghum at adat shop

Table-4 - Commission agents spent on store of sorghum (Per Annum for Per Quintal)

Spent on Storage (in Rs.)	District wise Number of Commission agents				Total
	Beed	Jalna	Parbhani	Osmanabad	
No spent	6 (12.00)	5 (12.50)	9 (15.00)	8 (17.78)	28 (14.36)
Below Rs 100	14 (28.00)	12 (30.00)	18 (30.00)	13 (28.89)	57 (29.23)
Rs 100-300	18 (36.00)	13 (32.50)	16 (26.67)	14 (31.11)	61 (31.28)
Rs 300-500	9 (18.00)	6 (15.00)	8 (13.33)	5 (11.11)	28 (14.36)
Above Rs 500	3 (6.00)	4 (10.00)	9 (15.00)	5 (11.11)	21 (10.77)
Total	50 (100.00)	40 (100.00)	60 (100.00)	45 (100.00)	195 (100.00)

(Source: Field Survey - 2021-22)

Note: The figures in parentheses indicate percentage to column total

It was analysed from table-4 that 14.36 per cent Commission agents were not spent any cost on storage of sorghum; 29.23 per cent of Commission agents had less than Rs. 100 spent on sorghum storage; 31.28 per cent of Commission agents had spent between Rs 100 to Rs 300 on sorghum store; 14.36 per cent of Commission agents were spent on sorghum storage at Rs 300 to Rs 500 and only 10.77 per cent of Commission agents were spent on sorghum storage at more than Rs 500. It was observed from above table that most of the Commission agents spent on sorghum storage less than Rs 100-300 for per annum per quintal.

Table-5

Commission agents Spent on Packaging of Sorghum (Per Annum/Per Quintal)

Spent on Packaging (in Rs.)	District wise Number of Commission agents				Total
	Beed	Jalna	Parbhani	Osmanabad	
No spent use old bag	6 (12.00)	5 (12.50)	9 (15.00)	8 (17.78)	28 (14.36)
Below Rs. 50	15 (30.00)	12 (30.00)	18 (30.00)	10 (22.22)	55 (28.21)
Rs. 50-100	19 (38.00)	15 (37.50)	19 (31.67)	13 (28.89)	66 (33.85)
Rs 100-300	7 (14.00)	6 (15.00)	8 (13.33)	9 (20.00)	30 (15.38)
Above Rs 300	3 (6.00)	2 (5.00)	6 (10.00)	5 (11.11)	16 (8.21)
Total	50 (100.00)	40 (100.00)	60 (100.00)	45 (100.00)	195 (100.00)

(Source: Field Survey - 2021-22)

Note: The figures in parentheses indicate percentage to column total

It was analysed from table-5 that 33.85 per cent Commission agents were not spent Rs. 50-100 packaging of sorghum; 28.21 per cent of Commission agents had spent Below Rs. 50 on sorghum packaging; 15.38 per cent of Commission agents had spent Rs 100-300 on sorghum packaging; 14.36 per cent of Commission agents had No spent use old bag on sorghum packaging. 8.21 per cent of Commission agents had spent Above Rs 300 on sorghum packaging. It was concluded that most of the Commission agents spent on packaging of sorghum less than Rs. 50-100 for per annum per quintal.

Conclusion

With the above discussion it was conclude that packaging has become very good for food grain storage is a worldwide application option as safe and high quality packaging. Most of Commission agents were used plastic bag to store sorghum. The fact that most of the



commission agents in Marathwada are suffering from the problem of sorghum storage has led to the conclusion that there is a favorable market potential for aseptic packaging to sorghum storage in the Marathwada region. It was also concluded that most of the Commission agents spent on packaging of sorghum less than Rs. 50-100 for per annum per quintal and most of the Commission agents spent on sorghum storage less than Rs 100-300 for per annum per quintal.

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