Varietal Preference of Sorghum Growers

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ABSTRACT

The present study was conductedin Mangalwedha and Mohol. tahasils of Solapur district of Maharashtra state since it had highest areas and production of sorghum crop. The findings of the study revealed that a cent percent of respondents given preference to production per hectare followed by fodder production of sorghum crop. It was also observed that sorghum variety M-35-1 stands first in the varietal preference even though there were better varieties released and recommended by the Agricultural Universities. So, the research institutions should consider characteristics of M-35-1 while developing newer varieties in future varietal development programmes. The variables - age and varietal preference found to be negative and non-significant relationship. The land holding,area under sorghum crop and annual income were exhibited positive and significant relationship between their varietal preferences. The other characteristics viz., education, source of information, risk orientation and source of seed had depicted positive non-significant relationship with their varietal preference. It is, therefore suggested that those variable shad shown positive and significant relationship with varietal preferencemay taken into consideration while planning the varietal development programmes in future.

Key words: *PerceivedAttributes, Varietal Preference,Response Priority Index,Correlation etc.*

INTRODUCTION

Sorghum is the fourth most important cereal crop in the world following wheat, rice and maize. Besides, being a major source of staple food for human beings, it also serves as an important source of fodder, animal feed and industrial raw material.It is used in various forms, similar to rice. It is used as cooked food, malted, flour for dosa and making chapatti or roti, popped, semolina etc. It is a very good dry and green fodder and a good concentrate feed for cattle and poultry. Raw material is used in starch industries. It is used in production of alcohol, similar to corn, and used for preparation of sorghum syrup (20-25% sugar) from sweet sorghum varieties. It is also used for production of Jaggary. It contains high amount of aconitic acid, which prevents the crystallization of sugar. It contains 72.6% carbohydrate, 10-12% protein, 3% fat, 1.6% mineral and contains more quantity of fibbers.

Sorghum is used in different ways as a human food, fodder, poultry feed and industrial raw materials. It has medicinal value in human diet and associated with lower risk and several diseases, including coronary heart diseases, blood pressure, stroke, cancer and type 2 diabetes. The main uses of sorghum are for preparing bhakari ,papad, cookies and other preparations. The feeds, concentrates and roughages from sorghum are required for maintenance of livestock and also to harness possible increase in animal milk. Different varieties of sorghum are used for these purposes such as CSV-05, CSH-15R, CSH-19R, Mauli, Phule Anuradha, Phule Vasudha, M-35, Phule Revati, Phule Suchitra, Phule Rohini, Phule Panchami, PKV Kranti, etc.

The sorghum crop is facing the problem of climate change. Besides this climate change there are many reasons as stated above for low productivity of sorghum. Amongst these, use of non-recommended and traditional variety is one of the major reasons for low productivity. Therefore, to know the use and preference of given by sorghum

growers to the different sorghum varieties.

With this backdrop, the present study was undertaken with the specific objectives-

1. To know the perceived attributes of sorghum crop
2. To study the varietal preferences of sorghum growers.
3. To ascertain the relationship between personal and socio-economic characteristics of sorghum growers with varietal Preferences

METHODOLOGY

The study was conducted purposively selected Solapur district as it has highest production sorghum in Maharashtra state. Solapur district comprises of 11 tahsils. The study was conducted in two tahsils i.e. Mangalwedha and Mohol as it has highest area under Sorghum cultivation. The list of villages having highest area under Sorghum was obtained from Taluka Agriculture Officer, and 10 villages were selected from both tahsils depending upon highest area under Sorghum crop. With the help of Taluka Agriculture Officers, Circle Agriculture Officer and Agricultural Assistant list of Sorghum growers was prepared for these 10 villages. According, Sorghum growers were selected by proportionate random sampling method from Mangalwedha and Mohol tahsil of Solapur district. Thus, total 130 respondents were selected for the study purpose. Response Priority Index was of sorghum growers were calculated by using following formula

Response Priority Index

$$(RPI)_i = \frac{\sum_{j=1}^{k} f_{ij}.\, X_{[(k+1)-j]}}{\sum_{i=1}^{1}\sum_{j=1}^{k} f_{ij}}$$

Where,

RPI_i = Response Priority Index for i^{th} constraint,

f_{ij}= Number of responses for the j^{th}priority of the i^{th} constraint

(i=1, 2……, l; j= 1,2,3 …..k),

$\sum_{j=1}^{k} f_{ij.}$= Total number of responses for the i^{th}constraint,

k = Number of priorities,

$X_{[(k+1)-j]}$=Scores for the j^{th} priority,

$\sum_{i=1}^{1}\sum_{j=1}^{k} f_{ij}$=Total number of responses to all constraints.

RESULTS AND DISCUSSION

1. Perceived attributes

Table 1

Distribution of the sorghum growers according to their preference in given to the attributes of Sorghum crop

Sr. No	Attributes of sorghum variety	Respondents(N=130)		
		Frequency	Percentage	Rank
1.	Production per hectare	130	100.00	I
2.	Fodder production	116	89.23	II
3.	Pest and disease resistance	86	66.15	III
4.	Size of grains	97	74.61	IV
5.	Color of grains	72	55.38	V
6.	Quality of *bhakari*(Softness)	95	73.07	VI
7.	Maturity duration	80	61.53	VII
8.	Quality of *hurada*	73	56.15	VIII
9.	Time of Flowering	79	60.76	IX
10.	Resistant to lodging	56	43.07	X

ResultsinTable-1Indicated thata centpercent of respondentsgivenpreference to Production per hectare. This was followed by the respondents had gavevariety preferred on the basis of attributesviz., fodder production(89.23%) followed by size of grains (74.61 %), quality of Bhakari (73. 07 %),pest and disease resistance (66.15 %) and maturity duration (61.53 %).

This finding is consistent with the finding of Borthakuret al. (2014).

2. Varietal Preference

Table 2
Distribution of Sorghum growers according to their Varietal preference.

Sr.	Name of Variety	Preferences given (frequency and percent)						
		1	2	3	4	5	6	Rank
1.	M-35-1	130 (100	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	I
2.	*Phule Revati*	0 (0.00)	63 (48.46)	61 (46.92)	5 (3.84)	1 (0.76)	0 (0.00)	II
3.	*Dagadi / Dadar*	0 (0.00)	61 (46.92)	7 (5.38)	58 (44.61)	4 (3.07)	0 (0.00)	III
4.	*Phule Vasudha*	0 (0.00)	5 (3.84)	46 (35.38)	34 (26.15)	36 (27.69)	9 (6.92)	IV
5.	*Phule Mauli*	0 (0.00)	1 (0.76)	10 (7.69)	24 (18.46)	57 (43.84)	37 (28.46)	V
6.	*Yashodhara*	0 (0.00)	0 (0.00)	8 (6.15)	8 (6.15)	31 (23.84)	83 (63.84)	VI

The datain Table-2 depicted that the respondents gave first prefer to M-35-1 (100.00 per cent)sorghum variety for cultivation followed by Phule Revati (48.46 per cent), Dagadi/Dadar (46.50 per cent) a local variety. Phule Vasudha (35.38 per cent) was preferred at forth position. PhuleMauli(43.84 percent)andYashodhara(63.84)werepreferred by the respondents at fifth and sixth positionsrespectively.

3. Response Priority Index

The response priority index for the different sorghum varieties was s measured by considering the preferences given by the respondents.

Table 3
Response priority index of sorghum growers according to their varietal preference given

Sr. No.	Variety	Response Priority Index (RPI)	Percent frequency	Average response	Rank
1.	M-35	1.00	29	223	I
2.	*Phule Revati*	0.76	22	169	II
3.	*Dagadi*	0.64	18	142	III
4.	*Phule Vasudha*	0.54	15	121	IV
5.	*Phule Mauli*	0.33	9	74	V
6.	*Yashodhara*	0.23	7	51	VI
	Sum	4.00	100	780	

From the Table -3 It is observed that RPI of the M-35-1 variety was 1.00 followed by Phule Revatiwith 0.76. The RPI of the Dagadivariety was 0.64 followed by Phule Vasudha with 0.54. The RPI of the varieties Phule Mauli and Yashodhara was 0.33 and 0.23respectively.

Table 4
Relationship between personal and socioeconomic characteristics of sorghum growers with their varietal preference:

Sr. No.	Independent variables	Correlation coefficient (r)
1.	Age	-0.031^{NS}
2.	Education	0.058^{NS}
3.	Family Size	0.179^{NS}
4.	Land Holding	0.116**
5.	Area under sorghum crop	0.041**
6.	Source of information	0.107 ^{NS}
7.	Annual Income	0.180**
8	Risk Orientation	0.004 ^{NS}
9.	Source of Seed	0.151 ^{NS}

** = *Significant at 1 per cent level of probability* * = *Significant at 5 per cent level of probability*
NS = Non – Significant

1. Age and Varietal preference

The Table-4 indicates that the relationship between age and varietal preference of sorghum growers was negative and non-significant (r = -0.031) at 0.01 per cent level.

2. Education and Varietal preference

It was observed from Table-4 that the education and varietal preference of respondents had positively non-significant (r =0.058) at 0.01 per cent level.

3.Family size and Varietal preference

The relationship between family size of respondents and varietal preference of sorghum growers was found positive and non-significant (r=0.179) at 0.01 per cent level.

4.Land holding and varietal preference

The data in the Table-4 revealed that there was a positive and highly significant correlation (r=0.116**) between land holding and varietal preference.

5.Area under sorghum crop and Varietal preference

The correlation coefficient (r=0.041**) indicated that the relationship between area under sorghum crop and varietal preference of the respondents was positive and highly significant.

6.Source of information and Varietal preference

The relationship between respondent's source of information and varietal preference of sorghum growers was found to be positive and non-significant (r=0.107) at 0.01 per cent level.

7. Annual income and Varietal preference

The relationship between annual income and varietal preference of sorghum growers was found to be positive and significant (r=0.180) at 0.01 per cent level.

8..Risk orientation and Varietal preference

The variable risk orientation of the respondents exhibited positive and non-significant (r = 0.004) relationship with their varietal preference.

9. Source of seed and Varietal preference

The relationship between respondent's source of seed and varietal preference of sorghum growers was found to be positive and non-significant (r=0.151) at 0.01 per cent level.

CONCLUSION

The finding of present investigation revealed that a cent percent of respondents given preference to production per hectare followed by fodder production of sorghum crop. It was also observed that sorghum variety M-35-1 stands first in the varietal preference even though there are

better varieties released and recommended by the Agricultural Universities. So, the research institutions should consider characteristics of M-35-1 while developing newer varieties in future varietal development programmes. The variable age and varietal preference found to be negative and non-significant relationship. The land holding, area under sorghum crop and annual income were exhibited positive and significant relationship between their varietal preference. The selected other characteristics viz., education, source of information, risk orientation and source of seed had exhibited positive non-significant relationship with their varietal preference. It is , therefore suggested that those variable had shownpositive and significant relationship with varietal preferencemay taken into consideration while planning the varietal developmentprogramme in the study areas.

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