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A Comparative Study on Consumption Pattern of Millet based FMCG Food Products in Rural and Urban Areas of Telangana

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ABSTRACT: The aim of the present study is to understand the awareness of millet based FMCG food products among urban and rural consumers and to compare and analyse the consumption pattern of urban and rural consumers towards millet based FMCG food products. In order to meet objectives, the data was collected from 120 urban and 120 rural consumers in Telangana state. The data was analysed using Z test. The results revealed that the majority of urban consumers were aware and consume RTC and RTE millet based products during breakfast, lunch and dinner time and majority of the rural consumers were not aware about the RTC and RTE millet based products, they only know and consume millets in grain form and consume by making traditional recepies like ragi jawa, jonna gatka, roti etc mostly during lunch, breakfast, dinner. Frequency of consumption among urban consumers is mostly weekly twice followed by daily and among rural consumers is mostly daily followed by weekly twice. The quantity of purchase of millet based products per month among urban consumers is mostly 1-2.5 kg and among rural consumers is mostly 2.5-5 kg. By application of Z test to consumption pattern data of urban and rural consumers, it was revealed that there is significant difference in the consumption pattern of urban and rural consumers in Telangana.

Keywords: Millet based FMCG food products, consumer awareness, consumption pattern.

INTRODUCTION

Millets have been farmed in North Africa and Central Asia since prehistoric times, however their origins are unknown. The majority of millet is grown in Asia and Africa. Millet is mostly farmed for poultry pasture and bird feed in Europe and the United States. Millet refers to a group of small-grained cereal grasses. Millets do not derive from the same plant species, although they do share some common characteristics. . Millets are divided into two types: major millets and minor millets. Pearl millet, finger millet, and sorghum are among the major millets, while proso millet, foxtail millet, little millet, barnyard millet, and kodo millet are among the minor millets (Bommy and Maheswari 2016). In Srilanka, majority of the people were aware finger millet regardless of gender, ade, educational status. (Jayawardane *et al.*, 2020).

Millets, also known as nutri-cereals, are a "Smart Food" since they are not only nutrient-dense but also target some of the most serious nutritional issues Millets are store house of amazing in their nutrient content and different millets have different features (Kalaiselvi *et al.*, 2017). Pearl millet, for example, is high in iron, zinc, and folic acid, which are not only among the most important micronutrients, but also very necessary for adolescent girls and women. Finger millet has three times the calcium found in milk, which is important for women and babies. Millets are also high in antioxidants and are beneficial in the fight against diabetes and heart disease, both of which are on the rise in India (ICRISAT, 2016).

The agile lifestyles of the people might be seen as evidence of prevailing changes in food preferences. Millets are an ancient grain that is now available in modern forms of Ready to Cook (RTC) and Ready to Eat (RTE) food products as a result of a radical shift in consumer behaviour towards healthier food habits as a result of increasing lifestyle diseases triggering health, nutrition, and fitness consciousness. The most common reason for eating millets in urban India is for health reasons (Potaka *et al.,* 2021).

The value added products of millets are categorised as RTE and RTC foods. Foods that are ready to eat include bakery items like bread and biscuits, snacks like extruded snacks, and popcorn (flakes). Instant food

(noodles, vermicelli, pasta, khichdi, porridge), mixes (idly, dosa, upma), multigrain flour, and beverages are examples of prepared foods (malt drink mix).

According to FAO, the global millet production was 30.5 million metric tons in 2019-2020 and it was increased to 31.1 million metric tons in 2020-2021. India is the largest producer in the world with 13200 ('000MT) *i.e.*, about 42 percent global production followed by Niger, China and Nigeria. The total production of millets in India is about 18.02 million tonne in 2020-2021. India is the 5th largest exporter of millets in the world. In 2020-2021, India exported millets worth US $26.97 million. India majorly export millets to Nepal, UAE and Saudi Arabia.

The Indian government had announced 2023 as the International Year of Millets (IYoM). In addition to increasing domestic and international demand, this would enable people to get wholesome food.

Jowar is the principal food grain crop in Telangana. It is sown both in Kharif and Rabi seasons. According to Agricultural statistics at a glance 2018-19 (Directorate of Economics and Statistics, Government of Telangana), Jowar crop is predominantly grown in the districts of Mahabubnagar, Adilabad, Medak, Rangareddy and Nizamabad. The Bajra crop is predominantly grown in Adilabad, Nizamabad, Mahabubnagar and Karimnagar districts. The ragi crop is predominantly grown in Mahabubnagar, Rangareddy districts. The area under small millet is very low. Among the small millets, foxtail millet is majorly grown in Telangana.

Table 1: Area, Production and productivity of millet crops in Telangana (2019-2023).

Crop	Trait	2019-20	2020-21	2021-22	2022-23	2023-24
Jowar	Area (lakh hectares)	0.88	0.91	0.69	0.68	0.56
	Production (lakh tonnes)	1.24	1.56	1.17	1.20	1.04
	Productivity (Kg/hectare)	1407	1711	1697	1758	1853
Bajra	Area (lakh hectares)	0.09	0.10	0.04	0.04	0.06
	Production (lakh tonnes)	0.10	0.09	0.04	0.12	0.11
	Productivity (Kg/hectare)	1158	930	1011	2952	1833
Ragi	Area (lakh hectares)	0.02	0.01	0.01	-	-
	Production (lakh tonnes)	0.03	0.01	0.02	-	-
	Productivity (Kg/hectare)	1581	1343	1647	-	-
Small millets	Area (lakh hectares)	0.01	0.00	0.00	0.01	-
	Production (lakh tonnes)	0.02	0.00	0.00	0.01	-
	Productivity (Kg/hectar)	1711	0	0	1048	-

Taking the above mentioned information into account, the present study is undertaken to understand the awareness of urban and rural consumers towards millet based FMCG food products and comparison of consumption pattern of urban and rural consumers towards millet based products with the following objectives:

1. Level of awareness of urban and rural consumers towards millet based FMCG food products.
2. Compare and analyse the consumption pattern of urban and rural consumers towards millet based FMCG food products

MATERIALS AND METHODS

The present study was conducted in the year 2021-22 with the objective to analyse the awareness level and consumption pattern of consumers towards millet based FMCG food products. Multi-stage random sampling technique was used to select the districts, mandals, villages and consumers for the study. For selection of urban consumers, Hyderabad is taken as study area because economically well developed urban area in Telangana compared to other urban areas with cosmopolitan culture. The study was carried out in six zones of Hyderabad. Two localities from each zone were randomly considered from each locality 10 households were selected.

For selection of rural consumers, Nalgonda, Rangareddy, Mahaboobnagar and Medak were selected. one mandal each was selected and from each mandal, one village was selected and from each village 30 households were selected. Hence, the sample of 120 urban households and 120 rural households were selected and total sample size of the study is 240.

The data required for the study has been collected by personal interview from the respondents of the selected area. The collected data has been analyzed by using percentages, frequencies and Z test.

RESULTS AND DISCUSSION

Awareness of respondents towards millet and millet based products in study area

Table 2: Awareness of respondents towards millets.

Are you aware about millets	Urban	Percentage	Rural	Percentage
Yes	**100**	**83**	**120**	**100**
No	20	17	0	0
	120	100	120	100

Table 3: Awareness of sample respondents towards different forms of millet based FMCG food products.

Sr. No.	Forms	Urban	Percentage	Rural	Percentage
1.	RTC	102	85	65	54.16
2.	RTE	100	83.33	50	41.66
3.	Grain	90	75	120	100
			81.11		65.27

The Table 2 shows the awareness of sample respondents towards different forms of millet based FMCG food products in study area. It was observed that in case of urban respondents, 85 percent aware RTC form millet based FMCG food products, 83.33 percent aware RTE form and 75 percent aware grain form. In case of rural respondents, 100 percent aware grain form, 54.16 percent aware RTC form and 41.66 percent aware RTE form.

From the above mentioned percentages in Table 2, it was inferred that the awareness of rural respondents towards millet based FMCG food products is lower compared to awareness of urban respondents even though the rural consumers were more aware about different millets compared to urban consumers.

Compare and analyse the consumption pattern of urban and rural consumers towards millet based FMCG food products

Consumption of millet based products among urban and rural consumers. From the consumer data, it was observed that 83.33 percent urban sample were consuming millet based products while only 64.16 percent of rural sample were consuming.

Form of consumption. With regard to the various forms of millet products, most of the urban consumers are consuming millets mostly in both RTE and RTC forms (56%), as staple food grains (21%), only RTC (13%) and RTE (10%) and most of the rural consumers consuming millets mostly as staple food (80%), both RTC and RTE (9%), only RTC (8%) and RTE (3%) in ascending order of consumption.

Among the various RTC forms of millets, mixes of idly and dosa were highly consumed and among the RTE products, biscuits and cookies were consumed highly when compared to other forms among urban consumers. But millet flour and biscuits were highly consumed among rural consumers.

Time period of consumption of millets and millet based FMCG food products in study area.

Table 4: Time period of consumption.

Sr. No.	Time period	Urban	Rural
1	<1 year	28	15
2	1-5 years	53	29
3	5-10 years	12	25
4	>10 years	7	8

Frequency of consumption of millets and millet based products

Table 5: Frequency of consumption of millets and millet based products.

Sr. No.	Frequency of consumption	Urban	Rural
1.	Daily	23	31
2.	Weekly twice	44	20
3.	Once in a week	15	10
4.	Once in a fortnight	11	5
5.	Once in a month	4	7
6.	Occasionally	3	4

Millet and millet based products consumption time of the day

Table 6: Consumption time of the day.

Sr. No.	Consumption time	Urban	Rural
1.	Breakfast	49	21
2.	Lunch	15	28
3.	Dinner	20	19
4.	Evening	6	2
5.	any time	10	7

Quantity of millet based products purchased per month by sample households in study area

Table 7 : Quantity of millet based products purchased per month.

Sr. No.	Quantity purchased per month	Urban	Rural
1.	< 0.5 kg	8	7
2.	0.5 – 1 kg	35	9
3.	1 -2.5 kg	38	31
4.	2.5 -5 kg	17	19
5.	> 5 kg	2	11

Statistical Analysis. Two sample Z test to analyse the comparison of consumption patterns of rural and urban consumers towards millet based FMCG food products.

H_0: There is significant difference in consumption patterns of millet based FMCG food products among urban and rural consumers.

H1: There is no significant difference in consumption patterns of millet based FMCG food products among urban and rural consumers.
food products among urban and rural consumers.

The hypothesis is formulates id tested by using Z test at significance 0.05 level two tailed test. Two sample Z test is being performed by using the formula

$$Z = \frac{\overline{X1} - \overline{X2} - \Delta}{\sqrt{\frac{\sigma 1^2}{n1} + \frac{\sigma 2^2}{n2}}}$$

Table 8: Values of the two sample Z test.

	Urban	Rural
Time period of consumption of millets and millet-based products		
Mean	25	19.25
Standard Deviation	20.70	9.53
Z test critical value	1.96	
Calculated value	0.50	

	Urban	Rural
Frequency of consumption of millets and millet-based products		
Mean	23	31
Standard Deviation	15.29	10.60
Z test critical value	1.96	
Calculated value	0.50	

	Urban	Rural
Consumption time of the day of millets and millet-based products		
Mean	49	21
Standard Deviation	17.04	10.64
Z test critical value	1.96	
Calculated value	0.51	

	Urban	Rural
Quantity of millet based products purchased per month		
Mean	20	15.4
Standard Deviation	16.01	8.35
Z test critical value	1.96	
Calculated Z value	0.56	

Assuming that the confidence interval is 95%
Conclusion: Z value approach
If Z value is > +1.96 or < -1.96, reject H_0
If Z value is < +1.96 or > -1.96, accept H_0
As we got Z values 0.50, 0.51 and 0.56, we accept the H_0. This implies that there is a significant difference in the consumption patterns of millet based FMCG food products among urban and rural consumers.

CONCLUSIONS

The current study revealed that the even though the awareness of different type of millets is high among rural consumers , the awareness towards millet based FMCG food products is very low compared to urban consumers. This implies that millet based FMCG firms should focus on rural markets by creating awareness about millet based FMCG food products and their health benefits. And do appropriate promotional strategies to make acceptance and availability at affordable prices of millet based FMCG food products among rural people. There is a significant difference in consumption pattern of millet based FMCG food products among urban and rural consumers.

FUTURE SCOPE

With the raising consciousness towards health among people, expectation and requirement for supplements and new products is also increasing day-by-day in the market. According to this perspective, we can see that millets and ancient grains, have become popular again due to their nutritional value and other health advantages. To encourage and boost their production and consumption by the public, millets have received a lot of attention from various government-based agriculture institutes over the past 20 years and GOI introduced the year 2023 as international year of millets.

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Conflict of Interest. None.

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