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Processing, storage, procurement, consumption and Marketing practices of Kodo millet in Tumkur District

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Abstract

Survey on consumption and utilization of millets specially with reference to the kodo millet was taken up in the selected villages of 5 taluks of Tumkur district. Majority of the respondents belong to the age group of 31-40 years (39%) educated upto high school (36%) belong to the small family (45%) having farming experience >10 years, had monthly family income (40%) Rs. 3504-7007 and land holding of 2.5 to 5.0 acres (42%). Forty eight per cent of the farm families cultivated kodo millet in 1-3 acre of land and utilized for consumption (42.59%), selling (27.77%) and for seeds purpose (29.63%) and most of the respondents (93.33%) marketed their produce to local market and few respondents (6.66%) to the Agriculture produce markrt committee (APMC). All the respondents followed the primary operations like cleaning (100%) and dehulling (100%) and only few followed grading (13%) and most of the respondents followed the secondary processing operations like milling (84%), semolina (66%) and flour (80%) of the kodo millet. However, a few followed popping (1%), extrusion (9%) and baking (1%). Storage of minor millets in different containers and bags revealed that most of the respondents stored minor millets in steel box (31.43%). Sixty two percent of the respondents were vegetarian and most of the respondents preferred millets as they are good and healthy (82%) and few of the respondents consumed millets because of availability (5%). Thirty nine percent consumed kodo millet occasionally (39%) followed by weekly (27%) and once in 3 days (26%) respectively in the form of rice, *curd rice, paddu and dosa.* Majority of the respondents (96%) had awareness that daily consumption of millets could prevent the occurrence of diseases and most of them opined that it was good for lowering the blood glucose level (91%).

Keywords: Kodomillet, survey, processing, consumption, Storage

Introduction

India is endowed with hundreds of nutritious crops whose research and development is still poorly addressed; production of millets has numerous securities, such as securities of food, nutrition, fodder, fiber, health, livelihood and ecology. Millets are store house of nutrients in large quantity and long term consumption of millets bring several health benefits of the people. Hence, they can help resist malnutrition (Kalaiselvi *et al.,* 2016) [2]. According to Samuel (2016) [7] small millets such as foxtail millet, little millet, kodo millet, proso millet and barnyard millet, as well as the major millets such as sorghum (great millet), bajra (pearl millet) and ragi (finger millet) are increasingly being included in the food basket of rural and urban households. National Nutrition Monitoring Bureau has reported that the consumption of millets was higher in the states of Gujarat (pearl millet, maize), Karnataka (finger millet), Maharashtra (sorghum) but negligible in the states of Kerala, Orissa, West Bengal and Tamil Nadu where rice is the most consumed cereal (NNMB, 2006). Recent study by NNMB on dietary profile of urban Indians (from the Chennai Urban Rural Epidemiology Study (CURES)) revealed that only 2% of the total calories (6.7 g/d) were contributed by the millets (Radhika *et al.,* 2011) [5]. Minor millets are one of the important food groups that had been moved out of the food basket in recent firms. Despite their superior nutritional qualities and climate resilience cultivation of small millets in India declined from 7.22 million hectares to 2.29 million hectares from 1961 - 2009. A consumer in fast paced environment, the focus on healthy lifestyle is a growing trend. Consumer awareness that ancient grains provide a much better nutritional balance is highly increasing due to their preference for high protein, complex carbohydrate, high fiber and gluten free diet These traits provide to the consumer however they are willing or unwilling participation in millet diet in their day to day life (Kalaiselvi *et al.,* 2016**)** [2]**.**

Small millets are generally coarse and have conspicuous outer coverings that are difficult to remove, increase fibre content and contribute to the coarse texture of grains. Milling, a basic processing operation for grains, is a prerequisite for the development of value added products for urban market such as polished grains, grits and flour for food uses. Mechanised dehusking and polishing of millets

paves the way for this value addition (Nandita Kar, 2007). As some taluks of Tumkur district are producing millets, involved in processing and consuming millets. Hence, the present study was conducted to know the production, processing and consumption pattern of millets in Tumkur district.

Materials and Methods

The Research was carried out in the Department of Food Science and Nutrition, University of Agricultural Sciences, Bangalore, during the period 2018-2021. The present rsearch is aimed to study the consumption pattern of kodo millet in selected villages of Tumkur district.

Survey regarding consumption pattern of millets: Kodo millet is commonly consumed in few villages of the Tumkur district. Therefore the survey was conducted to know the consumption and utilization pattern of the millets with special reference to kodo millet.

Selection of Sample: The sample were selected randomly comprising 100 farm women from the five taluks of Tumkur district (Fig. 1) namely Tiptur, Chikkanayakana halli, Turuvekere, Gubbi and Kunigal (20 farm women from each taluk).

Data collection: Questionnaire to elicit information regarding consumption and utilization pattern of Kodo millet (*Paspalum scrobiculatum*).: A pre-structured questionnaire was developed consisting questions on General information (regarding age, sex, literacy level, monthly income of the family), Land holdings, Production and Marketing, Processing technologies employed, Storage and procurement practices. The survey was carried out by interviewing the farm women in the five selected villages (Plate 1). The data were presented under 6 heads. a) general and personal information, b) production and Marketing of kodo millet, c) processing technologies employed for kodo millet, d) storage and procurement practices adopted for kodo millet, e) Consumption Pattern of millets f) Awareness about nutritional and medicinal importance of millets.
Data was analysed using suitable statistical method.

Plate 1: Data collection

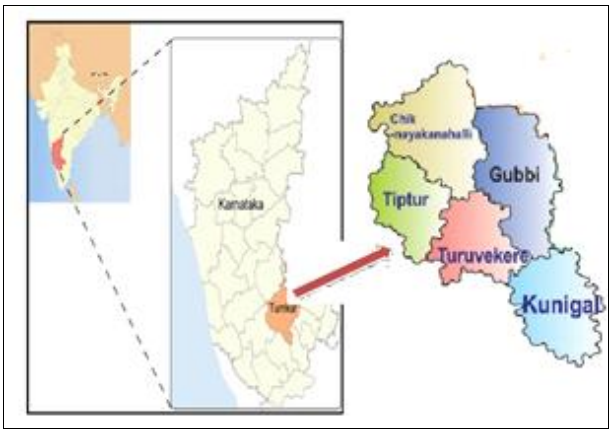

Fig 1: Location of the study area

Results and Discussion

General and personal information

The general and personal information of the respondents contained socio economic background *i.e.*, age, marital status, education status, farming experience, family type, family size, family income and land holding is presented in table 1. Majority of the respondents belonged to the age group of 31-40 years (39%) and few respondents were in the age group >60 years (4%) and all were married (100%). Education is an essential tool that imparts knowledge to improve one's life connected with the adopting new agricultural and other technologies. Among the surveyed respondents 20 per cent, 18 per cent, 36 per cent and 16 per cent had education upto primary, middle school, high school and PUC level. Few of the respondents were graduates (4%) and illeterates (6%). About 73 per cent, 20 per cent and 7 per cent of the respondents had the farming experience >10 years, 5-10 years and 0-5 years. Sixty per cent of the respondents belong to nuclear family and 40 per in the joint family. Respondents having small, medium and large families were 45 per cent, 44 per cent and 11 per cent respectively. Surekha (2012) [9] reported that majority of housewives (38%) in the urban area were belonging to age group of 31-40 years and rural housewives (27%) were in the age group of 51-60 years. Higher percentage of the respondents were from nuclear families (urban 86% and rural 62%) and only 14 per cent and 38 per cent respectively were from urban and rural joint families. The results of the study are on par with the findings of Kalaiselvi *et al*. (2016) [2] who reported the demographic factors of 450 respondents from Coimbatore. The findings are also in line with results of Sahu and Sharma (2018) [6], who revealed that the selected respondents were educated up to primary level, residing in nuclear families of up to five working members, having experience of 11 to 30 years and members of one or more organizations existing in villages.

It was found that 40 per cent of the respondents had the monthly family income of Rs 3504-7007, 32 per cent had Rs 1051-2101 and only 5 per cent had the family income Rs 1050 and below. This is according to the modified BG Prasad's social classification, 2019. Majority of the respondents were having the land holding of 2.5 to 5.0 acres (42%), while 33 per cent of respondents had the land holding upto 2.5 to 5.0 acres and only 5 per cent had >10

acres. Surekha (2012) [9] also revealed that in rural area majority of housewives were belonging to monthly family income of Rs < 10,000 (68%).

Table 1: Socio-Economic Background of Farm women

Sl. No.	Particulars	Farm women of Talukas (N=100)					Number	Percentage
		Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
1	**Age group (years)**							
	20-30	7	0	1	6	1	15	15
	31-40	8	4	12	8	7	39	39
	41-50	3	8	6	4	10	31	31
	51-60	1	7	0	1	2	11	11
	>60	1	1	0	1	1	4	4
2	**Marital status**							
	Married	20	20	20	20	20	100	100
	Unmarried		-					
3	**Educational status**							
	Illiterate	3	1	0	1	1	6	6
	Primary	3	2	4	5	6	20	20
	Middle school	4	4	1	4	5	18	18
	High school	7	8	9	7	5	36	36
	PUC	3	4	5	2	2	16	16
	Degree	0	1	1	1	1	4	4
4	**Farming experience**							
	0-5		2	2	1	2	7	7
	5-10			8	6	6	18	20
	>10	20	18	10	13	12	73	73
5	**Type of family**							
	Nuclear	16	11	12	15	6	60	60
	Joint	4	9	8	5	14	40	40
6	**Size of the family**							
	Small (2-4)	16	10	8	7	4	45	45
	Medium (4-6)	2	9	11	12	10	44	44
	Large (>6)	2	1	1	1	6	11	11
7	**Income of the family (Rs.)**							
	7008 and above	0	2	6	1	1	10	10
	3504-7007	4	5	10	12	9	40	40
	2102-3503	3	4	0	4	2	13	13
	1051-2101	10	8	4	2	8	32	32
	1050 and below	3	1	0	1	0	5	5
8	**Land holdings (acres)**:							
	Upto 2.5 acres	8	5	1	13	6	33	33
	2.5 to 5.0 acres	12	7	11	5	7	42	42
	5.0 to 10 acres	-	7	4	2	7	20	20
	>10.0 acres	-	1	4	-	0	5	5

Production and Marketing of kodo millet

Production and marketing of kodo millet including cultivation, harvesting, utilization, marketing, selling cost and marketing information is presented in the table 2. Majority of the respondents (48.28%) cultivated the kodo millet in 1-3 acre of land and least number of respondents (1.72%) cultivated in >6 acre of land. A surveyed 40.74 per cent, 29.63 per cent, 16.67 per cent and 12.96 per cent respondents harvested kodo millet <1 quintal, 1-3 quintal, 3-5 quintal and >5quintal respectively. The women revealed that the kodo millet utilized for consumption, selling and for seeds purpose (42.59%, 27.77% and 29.63% respectively). Majority of the respondents (93.33%) marketed their produce to local market and few respondents (6.66%) to the APMC. 31.58 per cent and 26.32 per cent of the respondents sold their produce kodo millet just after harvest for Rs 30-40 and Rs 40-50/Kg respectively, while during off season 15.79 per cent and 26.32 per cent of the respondents sold the produce kodo millet for Rs 40-50 and Rs 50-60 respectively.

Table 2: Production and Marketing of kodo millet in the study area

Sl. No.	Particulars	Farm families (N=100)					Number	Percentage
		Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
1	**Cultivation**						(n=58)	
	< 1 acre	9	2	5	4	6	26	44.83
	1-3 acre	4	12	2	2	8	28	48.28
	4-6 acre	0	2	0	1	0	3	5.17
	>6 acre	0	1	0	0	0	1	1.72
2	**Kodo millet harvested**						(n=54)	
	< 1 quintal	8	0	5	5	4	22	40.74
	1 - 3 quintals	4	5	1	1	5	16	29.63
	3-5 quintals	0	5	0	1	3	9	16.67
	>5 quintals	0	7	0	0	0	7	12.96
3	**Utilization**						(n=54)	
	Consumption	5	15	1	4	5	23	42.59
	Selling	3	10	3	2	2	15	27.77
	Seeds	4	12	1	1	3	16	29.63
4	**Marketing**						(n=15)	
	Local market	0	11	2	7	8	14	93.33
	Near own farm	0	0	0	0	0	0	0
	Main Road near village	0	0	0	0	0	0	0
	APMC	2	0	1	0	0	1	6.66
5	**Selling cost**						(n=19)	
	Just after harvest							
	Rs 30-40	1	0	2	1	2	6	31.58
	Rs 40-50	0	5	0	0	0	5	26.32
	During off season							
	Rs 40-50	1	0	1	1	0	3	15.79
	Rs 50-60	0	5	0	0	0	5	26.32
7	**Market Information source.**						(n=58)	
	Yes	12	17	5	7	14	55	94.83
	No	1	0	2	0	0	3	5.17

Most of the respondents (94.83%) were getting the market information through mobile app, radio, TV and news paper and 5.17 per cent respondents were unaware about the market information. Sahu and Sharma (2018) [6] reported that the respondents were cultivating kodo millet (94.12%), little millet (97.37%) and finger millet (91.30%) for sole domestic consumption only.

Majority of the produce of kodo millet (94.49%), little millet (96.50%) and finger millet (92.20%) was used for domestic consumption, while rest was for sale. The findings of Joshi *et al.* (2019) [1] revealed that majority of the respondents (88%) were cultivating kodo millet for sole domestic consumption while 8 per cent of them were growing kodo for both domestic consumption and marketing purposes. Only 4 per cent of kodo producers were involved in kodo cultivation as cash crop. However, none of the kodo producers were growing the kodo for sole marketing purpose. Patil and Sankangoudar (2019) [4] reported the minor millets are grown by respondents in Yadwad and Garag villages of Dharwad taluk. In Yadwad almost all respondents (99.67%) had grown foxtail millet (Navane) and 43.00 per cent had grown little millet (Savi). In Garag cent per cent of respondents grew little millet (Savi) and one third (33.33%) per cent of respondents had grown foxtail millet (Navane).

Processing technologies employed for kodo millet

Processing technologies adopted for kodo millet is presented in Table 3. From the table it is evident that the majority of respondents follow cleaning (95%) and drying (90%) and only few follow the washing (20%) before storage of the millet. Cent per cent followed the cleaning (100%) and dehulling (100%) while few respondents followed grading (13%) primary processing operations before consumption. Most of the respondents also went for secondary processing techniques like milling (84%), converting into semolina (66%)) and flour (80%) preparation of the kodo millet, where as few respondants followed secondary processing operations like popping(1%), extrusion (9%) and baking (1**%**).

These findings of the study are on par with the results of Surekha (2012**)** [9] who reported that cleaning of millet was followed by almost all the selected families (urban and rural areas of Parbhani district) irrespective of income group before storage. However, majority of the respondents (60%) preferred washing of millet before consumption. Results of the present study are in line with the Kulkarni *et al.* (2018) who observed that majority of the respondents used millet as whole grains (61%), while 39 per cent of the respondents used millet in the form of rice. Selvi and Malathi (2019) [8] reported that 80 per cent of the respondents from Peraiyur taluk of Madurai district of Tamil Nadu used millet flour, while 5 per cent of them took in germinated form and 10 per cent used as malted millet flour and none of them had used either popped or flaked millets.

Table 3: Processing technologies employed for kodo millet

Sl. No.	Particulars	Farm families of Taluks (N=100)*					Number	Percentage
		Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
1	**Before storage**							
	Cleaning	19	19	17	20	20	95	95
	Washing	11	1	6	0	2	20	20
	Drying	17	19	19	16	19	90	90
2	**Before consumption**							
	Primary processing:							
	Cleaning	20	20	20	20	20	100	100
	Grading	2	1	5	3	2	13	13
	Dehulling	20	20	20	20	20	100	100
	Secondary processing							
	Washing	17	2	11	5	7	42	42
	Roasting	12	0	3	3	1	19	19
	Milling	19	18	18	9	20	84	84
	Semolina	17	18	15	4	12	66	66
	Flour	19	19	16	6	20	80	80
	Flaking	0	0	0	0	0	0	0
	Popping	0	1	0	0	0	1	1
	Extrusion	0	1	5	0	3	9	9
	Baking	0	1	0	0	0	1	1

*Multiple responses

Storage and procurement practices adopted for kodo millet

Table 4 depicts the storage and procurement practices of minor millets. The information regarding the storage of minor millets in different containers and bags revealed that 31.43 per cent, 15.24 per cent, 35.24 per cent and 17.14 per cent of the respondents stored minor millets in steel box, aluminium box, polyethylene covers and gunny bags respectively, while only 0.95 per cent of the respondents stored in other container like madki. Most of the respondents stored minor millets whenever needed (80.80%), where as only 19.19 per cent of the respondents stored the minor millets for a year.

Surekha (2012) [9] reported that majority of group IV income preferred to store millets in steel container (84.51%) followed by group III (53.34%). However, very few respondents from group I (9%) and group II (5%) preferred to store in polyethylene pouch and also reported that maximum per cent of group III (60%) preferred to procure millet as and when required followed by group II (44%) and group I (40%). However maximum per cent of group IV respondents (50%) preferred to procure millets monthly. The whole grain millets were stored in gunny bags by majority of the respondents (73.4%) while the rest used earthen pots for the storage of these grains. Millet flour and malted millet flour were stored either in plastic container or polypropylene bag (Selvi and Malathi, 2019) [8].

Table 4: Storage and procurement practices of minor millets

Sl. No.	Particulars	Farm families of Taluks (N=100)					Number	Percentage
		Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
1	**Storage of millets***							
	Steel box	5	6	9	5	8	33	31.43
	Aluminum box	0	1	4	7	4	16	15.24
	Polyethylene covers	9	14	4	8	2	37	35.24
	Gunny bags	7	2	3	0	6	18	17.14
	Any other	0	0	0	0	1	1	0.95
2	**Time of storage**							
	Yearly	7	2	1	3	6	19	19.19
	Whenever needed	12	18	19	17	15	81	80.80

*Multiple responses

Consumption pattern and frequency of consumption of millets

Food habits and reason for consumption of millets is presented in Table 5. The results revealed that 62 per cent of respondents were vegetarian while 38 per cent of the respondents were non-vegetarian. Majority of the respondents (82%) opined that they consume millets as they are good and healthy and few of the respondents (5%) consume millets because of their availability, while 14 per cent and 21 percent of the respondents consume due to their traditional practice and as they are nutritious.

The findings of the study are in line with the results of Kalaiselvi *et al*. (2016) [2] who reported awareness and consumption of Millets among 450 respondents in Coimbatore city. The study conducted by Selvi and Malathi (2019) [8] showed that the respondents were aware of benefits of millet consumption and yet the respondents were not actually consuming millets because of reasons like lack of purchasing capacity, drudgery involved in preparation of millet products and non availability of millet products in the

market. The results of Patil and Sankanagoudar (2019) [4] reported that more than one fourth of respondents perceived it as ideal weaning food that provides nutrition to children followed by prevention of occurrence of diseases and improvement in blood production.

Table 5: Food habits and reason for consumption of millets*

Particulars	Farm families of Talukas (N=100)					Number	Percentage
	Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
Vegetarian	20	20	8	3	11	62	62
Non vegetarian	0	0	11	17	10	38	38
Good and Healthy	19	12	17	16	18	82	82
Nutritious	7	5	4	3	2	21	21
Availability	0	2	0	2	1	5	5

*Multiple responses

Frequency of kodo millet and other millets consumption by farm families is shown in Table 6. Cent per cent of the respondents consume finger millet daily. Incase of little millet, 8 per cent, 9 per cent, 38 per cent and 42 per cent of the respondents consumed daily, once in 3 days, weekly and occasionally. None were consuming barnyard millet either daily and once in 3 days while 7 per cent and 8 per cent of the respondents consuming this millet weekly and occasionally and 85 per cent of the respondents never consumed. Majority of the respondents were consuming foxtail millet occasionally (40%) followed by weekly (23%) and once in 3 days (21%) where as, only 6 per cent were consuming daily and 10 per cent of the respondents never consume this millet. Incase of kodo millet most of the respondents were consuming occasionally (39%) followed by weekly (27%) and once in 3 days (26%) respectively while only 5 per cent were consuming kodo millet daily and 3 per cent of the respondents were not consuming this millet. Except finger millet the respondents were not consuming other minor millets. It may be due to drudgery in cleaning and processing of millets and easy accessability through PDS of rice and wheat.

Selvi and Malathi (2019) [8] also reported that the majority of the millets consumed monthly once while kodo millet, finger millet and barnyard millet were consumed twice in a month by 17per cent, 30 per cent and 17 per cent respondents respectively. Sorghum was consumed weekly once by 28 per cent respondents. Little millet, foxtail millet, barnyard millet and proso millet were consumed occasionally by cent per cent of respondents. Patil and Sankanagoudar (2019) [4] revealed that, none of the respondents consumed millets daily. About 84 per cent of growers 87.23 per cent and 69.05 per cent of non growers of same village and different village respectively consumed millets occasionally. Surekha (2012) [9] reported that Jowar was consumed by all the selected families both in urban and rural area (100%) daily as a staple food. In urban area barnyard millet was consumed weekly by 48 per cent and occasionally by 52 per cent. On the other hand, 55 per cent of rural families consumed it weekly and 27 per cent occasionally. Pearl millet (Bajra), finger millet (Ragi) and Italian millet (Rala) are the other millets consumed by both urban and rural families occasionally by a very few respondents.

Table 6: Frequency of consumption of kodo millet and other millets by farm families

SI. No.	Millet	Frequency of consumption (N=100)				
		Finger millet (Ragi)	Little millet (Saame)	Barnyard millet (Oodalu)	Foxtail millet (Navane)	Kodo millet (Haraka)
1	Daily	100 (100)	8 (8)	0	6 (6)	5 (5)
2	Once in 3 days	0	9 (9)	0	21(21)	26 (26)
3	Weekly	0	38 (38)	7 (7)	23(23)	27(27)
4	Occasionally	0	42 (42)	8 (8)	40 (40)	39 (39)
5	Never	0	3 (3)	85(85)	10 (10)	3 (3)
	Total	100 (100)	100 (100)	100 (100)	100 (100)	100 (100)

Note: Figures in parentheses indicate percentage

Form of the consumption of millets

Form of the consumption of millets is shown in Table 7. The findings revealed that the cent percent of the respondents preferred to consume finger millet in the form of *mudde* and *roti* while 23 per cent and 35 per cent of the respondents consumed it in the form of *ambali* and *dosa*. Ambali is a fermented food prepared with butter milk respondents reported to prefer this during summer.

Table 7: Form of consumption of millets

SI. No.	Millet	Form of consumption*(N = 100)											
		Mudde	Roti	Ambali	Dosa	Idli	Paddu	Bisibelebath	Kichadi	Upma	Pulav	Curd rice	Payasa
1	Ragi (Finger millet)	100	100	23	35	0	0	0	0	0	0	0	0
2	Saame (Little millet)	0	31	10	36	40	40	0	10	15	38	0	43
3	Oodalu (Barnyard millet)	0	0	5	0	0	0	0	0	0	15	0	10
4	Navane (Foxtail millet)	0	0	0	0	0	10	30	20	30	39	0	49
5	Haraka (Kodo millet)	0	20	7	23	15	27	0	0	0	0	35	0

*Multiple responses

Majority of the respondents consumed little millet in the form of *dosa* (36%), *idli* (40%), *paddu* (40%), *pulav* (8%) and *payasa* (43%) while most of the respondents consumed kodo millet in the form of *curd rice* (35%) followed by *paddu* (27%) and *dosa* (23%). Respondents preferred to consume the foxtail millet in the form of *payasa* (49%), *pulav* (39%), *bisibele* bath (30%) and *upma* (30%). Barnyard milet is consumed in the form of *pulav* and *payasa* by 15 per cent and 10 per cent of the respondents.

Surekha (2012) [9] reported that majority of the respondents both in urban (50%) and in rural (43%) area preferred to consume millet in the form of cooked rice. Selvi and Malathi (2019) [8] reported that *Porridge* was the conventional millet based product prepared by majority of respondents (43.3%) followed by kali (16.7%), roti (11.6%), health mix (8.4%), dosa (6.6%) and dessert (3.4%). Majority of the respondents (77.5%) prepared the Indian sweet like sweet appam exclusively from millet rice, while 10 per cent of them used millet rice for *kesari bath* preparation and 12.5 per cent for *payasam* preparation.

Among growers 70 per cent of respondents consumed little millet (Savi) as rice and 40.00 per cent of respondents consumed it as *upma*, only 20.00 per cent of respondents consumed it as *paddu.* Foxtail millet (Navane) was consumed in the form of *holige* (sweet prepared during festival), more than half of the respondents (56.67%) consumed in the form of rice followed by 41.67 per cent in the form of upma (Patil and Sankanagoudar, 2019) [4].

Awareness about nutritional and medicinal importance of millets

Awareness about nutritional and medicinal importance of millets is depicted in Table 8. The results showed that majority of the respondents opined that millets are good for health (69%), gives high satiety value (48%), they are rich in nutrients (36%) and good for digestion (30%) while few respondents opined that they are good for acidity (8%) and rich in dietary fibre (17%). Majority of the respondents (96%) had awareness that daily consumption of millets could prevent the occurance of diseases. With regard to awareness about nutritional and medical importance of millets respondants knew that it was good for lowering the blood glucose level (91%), good during fever (26%), good for reducing the cholesterol level(25%) while 11 per cent of the respondents said that it was good for correction of anemia.

Findings of the Surekha (2012) [9] revealed that 67 per cent and 38 per cent of urban respondents and 41 per cent and 24 per cent of rural respondents, were aware about the nutritional and medicinal importance respectively. Alekhya and Shravanthi (2019) also observed that out of 100 respondents interviewed 57 per cent were consuming millet based products for health benefits followed by 26 per cent for taste, 13 per cent for loosing weight and 4 per cent respondents for other reasons like habituated from child hood, new product preference etc.

Table 8: Awareness about nutritional and medicinal importance of millets*

Sl. No.	Particulars	Farm families (N=100)					Number	Percentage
		Tiptur	CN Halli	Gubbi	Turuvekere	Kunigal		
1	**Awareness about nutritional importance of millets***							
	Good for health	19	20	12	11	7	69	69
	Good for digestion	10	10	1	5	4	30	30
	Good for acidity problem	2	2	0	3	1	8	8
	High satiety value	15	0	11	8	14	48	48
	Rich in nutrients	15	5	6	4	6	36	36
	Rich in dietary fibre		6	3	7	1	17	17
2	**Awareness about the role of millets in prevention of diseases? Yes / No**							
	Yes	20	19	18	19	20	96	96
	No	0	1	2	1	0	4	4
3	**Awareness about medicinal value of millets***							
	Correction of anemia:	4	4	1	2	0	11	11
	During fever	15	6	1	3	1	26	26
	Lowers cholesterol Level	6	10	1	6	2	25	25
	Lowers glucose level	19	16	18	19	19	91	91

*Multiple response

Now a days people are realizing the nutritional and health advantages of underutilised minor millets which have tiled the way for increasing millet production that has been declining due to focusing on crops of cereal like rice and wheat. The study reveals that while Kodo millet holds significant nutritional and economic value, its potential remains underutilized due to gaps in awareness, infrastructure, and market linkages. Traditional processing and storage methods are still widely practiced, but they often result in post-harvest losses and quality degradation. Procurement is largely localized, and farmers face challenges in accessing broader markets due to a lack of organized channels and price fluctuations. Consumption patterns indicate that Kodo millet is gradually regaining popularity as a health food, yet awareness campaigns and value-added product development are needed to boost demand. To improve the millet value chain in Tumkur District, interventions such as improved processing technologies, modern storage solutions, farmer education, direct market linkages, and policy support are crucial. Strengthening these areas could enhance the livelihood of millet farmers and promote sustainable agricultural practices in the region.

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