



Traditional Knowledge of Indigenous millets belong to the Tribe Paniceae (Poaceae, Panicoideae) used by the Tribal communities of Attappady (Palakkad Dt.) in Kerala

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ABSTRACT

Attappady village in Palakkad district is known as the millet capital of Kerala State. The present study is aimed to document the millets of the tribe Paniceae of Poaceae and their traditional uses by the tribal communities of Attappady village. Three tribal communities such as Irulas, Mudugas and Kurumbas are living in the region. There are many settlement colonies in Attappady village, in these some of the colonies of Chemmannoor, Kavundikkal, Kunnanchala, mele abbannoor, Moolakomb and Kollamkadavu colonies of Attappady villages are using millet farming includes the tribe Paniceae. The survey was carried out in the settlements of Irulas, found that the short duration millets of tribe Paniceae such as little millet (*Panicum sumatrense* Roth ex Roem. & Schult.), Barnyard millet (*Echinochloa frumentacea* Link), Foxtail millet (*Setaria italica* (L.) P. Beauv.), Kodo millet (*Paspalum scrobiculatum* L.), Pearl millet (*Pennisetum glaucum* (L.) R.Br.) and Brown top millet (*Brachiaria ramosa* (L.) Stapf) are cultivated by the tribal settlements. The study revealed that these tribes have authentic information and knowledge on the cultivation practices, nutritional and medicinal properties of the millets, thus including them in their daily diet. Presently the Government of Kerala encourages the tribal farmers to market the cultivated millets in the urban areas which has drastically improved the cultivation and production of millets in the State.

Keywords: Millets, Paniceae, Tribal communities, Attappady, Kerala

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INTRODUCTION

Attappady is a tribal taluk, located in Palakkad district of Kerala State, India covering an area of 734.62 km². There are mainly three communities of tribals such as Irulas, Mudugas and Kurumbas are seen in Attappady. In Irular tribal community people's hamlets are Chemmannoor, Kavundikkal, Kunnanchala, mele abbannoor, Moolakomb and Kollamkadavu. They cultivate the crops belongs to the tribe *paniceae* are Pearl millet, Foxtail Millet, Barnyard millet, Kodo millet, Little Millet, Proso millet. Research data shows millet reduces blood sugar levels and enhance insulin responsiveness. Millets can be cultivated quickly, can withstand drought conditions, and have long storage life without being harmed by insects [3]. It is thought that millet grains are ideal for both home and commercial utilization (8). The Scientific world is promoting the use of millets because of the fiber, carbohydrate and mineral rich content. The National Agricultural Innovation Project's (NAI Millets Value Chain 2006) and the Initiative for Nutritional Security via Intensive Millet Promotion's (INSIMP 2011–12) the execution in sixteen states aim to increase the market for millet-based meals (11). India ranks among the top producers of millet (5). The primary aim of this study was to gain insight in to the dietary habits of people in Attappady regarding the consumption of Millets. Additionally, to explore the impact of millet consumption particularly on women and children. Furthermore, the study aimed to document the traditional knowledge and best practices related to Millets (belongs to the tribe *paniceae*)

MATERIAL AND METHODS

The research area Attappady is a well-known forest area and a millet village in Kerala. The tribal communities are lives in Hamlets (Ooru). There are three major communities such as Kurumba, Muduga

and Irula. Major tribal hamlet is Irula (approximately 149, source ITDP Attappady). Data was collected during a variety of time periods. Data for this research study were gathered using a mixed methodology, observation, interviews, and deep discussions, among these methods used to gather qualitative data. We have concentrated the study of Irula tribal people, by using questionnaire methods, farm visiting, field work etc. They collected traditional seeds for their farms and also preserve seeds for further upcoming seasons. Some tribal farmers did not view agriculture as only an economic endeavor, but rather as a means of survival.

RESULT AND DISCUSSION

We have studied this particular area by understanding the farming methods of millets belongs to the tribe *Panicaceae*. For this we got permission from Forest Department and Scheduled caste & Scheduled Tribal Department, Government of Kerala for entering the Forest range and interact with tribal communities. First, we visited the hamlets of each Irular hamlet leaders (Ooru Moopan), by the help of Scheduled Tribe Promoters Athira and Hareesh, then we visited millet farms. We used Questionnaire method for our study. They were using Malayalam mixed with Tamil as their communicative language and they have also used a language without script of their own Irular communities. Little millet (*Panicum sumatrense* Roth ex Roem. & Schult.), Barnyard millet (*Echinochloa frumentacea* Link), Foxtail millet (*Setaria italica* (L.) P. Beauv.), Kodo millet (*Paspalum scrobiculatum* L.), Pearl millet (*Pennisetum glaucum* (L.) R.Br.) and Brown top millet (*Brachiaria ramosa* (L.) Stapf) are the millets belongs to the tribe *Panicaceae* they are using for their cultivation crop. Ragi (*Eleusine coracana*, belongs to the tribe *Eleusineae*) cultivation is the major portions of the field in Attappady. In Irula tribe we used a questionnaire method about the millet cultivation and their food habits. They all were using millets every week mixed with their daily meals. They also added, the present generation doesn't know about the importance of these millets. They also added they consume food items which are prepared from millets before going to work and they don't feel hunger till evening. Nowadays most of the new generation tribals are using ration rice for their food which is received free of cost from the government. So, they are not interested in cultivation of millet crops. They also added over consumption of this free polished rice, they would become unhealthy and disease prone. Recently there are farmers-based, Government under taking companies in Attappady, which help the farmers, they buy millets directly from farmers and are sold to the market. This will increase the number of millet farmers of the tribal community and also increase in their profit. In this way millet cultivation is protected from alienation. Millets collected from Attappady belongs to the tribe *Panicaceae* (from Table 1)

Barnyard Millet-It is known as Indian Barnyard millet. The earliest millet species to be cultivated is barnyard millet. *Echinochloa esculenta*, also known as Japanese barnyard millet, and *Echinochloa frumentacea*, also known as Indian barnyard millet, are the two primary species of Barnyard millet. The Billion Dollar Grass is another name for Indian barnyard millet. (2). This crop, has several uses. In terms of nutrition, it's a good source of highly absorbable protein and an outstanding quantity of dietary fiber. The low and long digestion of the carbohydrates found in barnyard millet renders it a natural gift.

Foxtail millet-It is the oldest-cultivated millet. It has a low water requirement, so the cultivation does not affect any drought conditions. It grows in a very short period of time; that's why it has been easily cultivated throughout the year. It matures in 60-70 days. The caryopsis is very similar to the rice grain. Caryopsis contains an outer husk that will be removed when it is used. It is rich in dietary fiber and minerals. It also promotes immune system.

Kodo millet- It is the minor millets, it is well recognized for having the strongest tolerance to drought and for producing a good yield in a shorter growing season, ranging from 80 to 135 days [13, 14]. Flavonoids, antioxidant chemicals, and polyphenols can all be found in good amounts in kodo millet [7].

Little millet-Phosphorus is abundant in little millet and is useful for promoting a weight loss, regrowth of cells, and the production of energy following physical activity [15]. Little millet is also known as "cool food" due to its cooling properties when ingested in the summer [9]. It treats the majority of gastrointestinal issues and aids in the prevention of constipation. Its noteworthy high fiber content facilitates the passage of food and waste through the digestive tract [19] and helps lower body fat deposits [8].

Pearl millet -After rice, wheat, corn, barley, and sorghum, pearl millet (*Pennisetum glaucum* (L.) R. Br.) is the sixth-most significant cereal crop [14]. In developing nations, pearl millet has the enormous potential to eradicate micronutrient deficiencies [12, 16]. Consultative Group for International Agricultural Research for Millets (2016) states that 50% of the millet production is the pearl millet, which serves to be a source of food and income to 90 million people. One meal of a biofortified high-iron type can meet between 50 and 100 % of the daily requirement for iron, which is adequate to overcome iron deficiency in both men and women as well as children (6). Additionally, millets shown impressive effects on human diabetics by lowering their glycemic index when consumed in the form of millet-based chapatti [15].

Proso millet- Proso millet, also called hog millet, broomcorn millet, and common millet in different parts of the world, is one of the major tiny millets. Vavilov (All Russian Scientific Research Institute of Plant Industry 1926) proposed that proso millet originated in China, whereas Harlan [17] conjectured that proso millet was likely domesticated in China and Europe. Proso millet has a short growth cycle of six to twelve weeks, needs little water for development. Northern China, Mongolia, the Republic of Korea, southeast Russia, Afghanistan, Pakistan, India, and southern Europe are among the regions where proso millet is farmed.

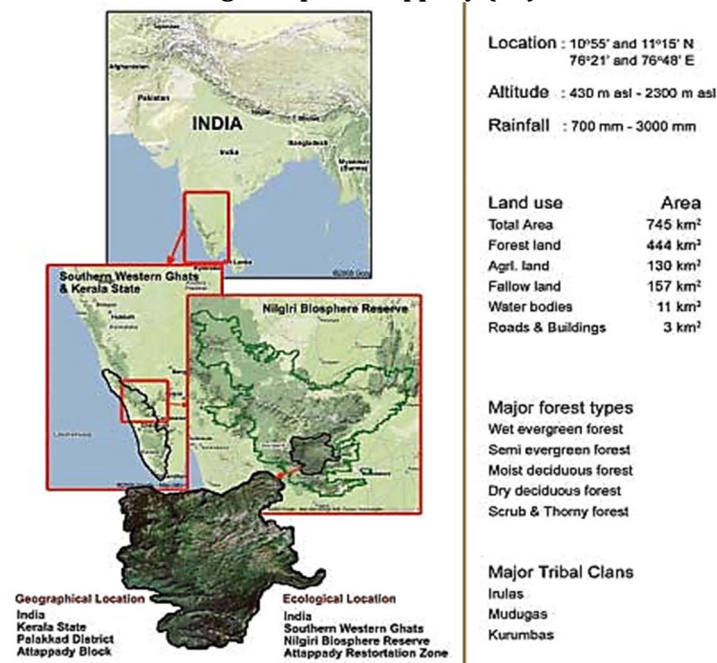
Types of Millets (belongs to the Tribe *Paniceae*) grown in Kerala (table 1)

Sl. No	Millet	Scientific Name	Local Name (Malayalam)
1	Barnyard Millet	<i>Echinochloa frumentacea</i>	Kuthiravali
2	Foxtail Millet	<i>Setaria italica</i>	Thina
3	Kodo Millet	<i>Paspalum scrobiculatum</i>	Varagu
4	Little Millet	<i>Panicum sumatrense</i>	Chama
5	Pearl Millet	<i>Pennisetum glaucum</i>	Kambu
6	Proso Millet	<i>Panicum miliaceum</i>	Panivaragu

Fig 1. Millets Farm field visit in



Fig 2 Map of Attappady (20)



CONCLUSION

Attappady the millet village of Kerala has a majority of tribal and indigenous people; they are using millet in their diet from the knowledge they got from their ancestors. By using these millets in their diet, they are disease free. Millets are appropriately referred to as nutriceals since they are nutritious, climate-smart crops likewise, the Government of India designated 2018 as the "Year of Millets" and the FAO Committee on Agriculture (COAG) forum designated 2023 as the "International Year of Millets" in an effort to mainstream millets, capitalize on their superior nutritional value, and encourage their cultivation.

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