

STUDIES ON THE SMALL MILLETS AND OTHER RELATED WILD SPECIES OF GRASSES FROM SOUTHERN RAJASTHAN

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During the germplasm collection mission of grasses of Rajasthan, 11 small millets and 21 other related wild species of grasses have been identified and collected from southern Rajasthan. Ethnobotanical information about these small millets have revealed that cultivation area of most of these is under shrinkage. These are indispensable for the drought prone area and hence there is an immediate need to conserve these resources as well as other related wild species of grasses of southern Rajasthan.

Key words : Small millets, wild grasses, south Rajasthan

Small millets are grown in situations where there is a risk of famine. In this context, studies on small millets as well as other minor wild cereals are of immense importance in a state like Rajasthan where famines due to drought occur rather frequently. Southern Rajasthan is tribal dominated region of Rajasthan where small millets still constitute the staple food of poor tribals during famines. Other minor wild cereals also played an important role in the diets of native people of southern Rajasthan.

Aravalli hills of southern Rajasthan are extremely rich in its grass wealth. Energy value of certain important grasses of Aravalli hills have been determined by Katewa and Tiagi (1982, 1984 and 1990). Workers like King (1969), Kanodia and Gupta (1968) and Bhandari (1974) have documented famine food plants through personal collection of information from the desert tribalmen, women and old generation people in western Rajasthan. Being the food of the poorest of the poor segment of the society, little attention

have been paid on these crops of tribal importance. Therefore, an attempt has been made to identify and collect the germplasm of small millets and other minor wild cereals.

An exploration mission for identification and germplasm collection of grasses of tribal dominated districts of southern Rajasthan was undertaken during September and October, 1999 and it was observed that in certain areas, the tribals still cultivate the small millets and their grains are used as supplementary food during scarcity period. Tribal dominated district of this region comprised a major part of the Aravalli system of mountain. The whole area is highly uneven and arid. The tribal economy is mainly pastoral with agriculture practiced only in a limited way because flat terrains are little to make agricultural fields. Because of limited area for agriculture, the tribals use grains of certain minor wild cereals as supplementary food. Ethnobotanical information about such wild cereals was noted. The exploration was undertaken when seeds were physiologically matured. The

Table 1. Small millets and others wild related species of grasses collected from southern Rajasthan

S. No.	Botanical Name	IC No.	Local name	Habitat	Ethnobotanical uses
Small millets					
1.	<i>Brachiaria ramosa</i>	255263	Salki	Common in and along the margins of cultivated fields	Grains are used as famine food.
2.	<i>Echinochloa colonum</i>	255269	Sama	Grow in moist situations	The grains are eaten by the tribals in the famine.
3.	<i>Echinochloa crus-galli</i>	255303	Batda	Commonly found in highly moist areas. Also in water logged conditions	Grains famine food
4.	<i>Echinochloa frumentacea</i>	-	Batti	Grow in moist areas	Grains famine food
5.	<i>Eleusine coracana</i>	255324	Maal/Madua	Cultivated in the field	Grains are eaten in the scarcity period
6.	<i>Panicum miliaceum</i>	255363	Samlie	Cultivated in the field	Grains are eaten in the scarcity period
7.	<i>Panicum paludosum</i>	-		Grow in moist situations	Grains scarcity food
8.	<i>Panicum trypheron</i>	255244		Grow in moist situations	Grains scarcity food
9.	<i>Paspalum scrobiculatum</i>	255325	Kodra	Cultivated in the field	Grains are cooked like rice. Grain flour is used for making bread.
10.	<i>Setaria glauca</i>	255302	Kukarva	Cultivated in the field along with other small millets	The grains are powdered and mixed with the flour of maize to make the breads during scarcity of food grains
11.	<i>Setaria italica</i>	255362	Kura/Kangni	Cultivated in the field	The grains are powdered and mixed with flour of cultivated cereals to make the bread
Other wild related species of grasses					
12.	<i>Acrachne racemosa</i>	55342	Phundalli ghas	Grow in undisturbed areas	Grains are used as famine food
13.	<i>Apluda mutica</i>	255248	Bhangtu/Pamra Bhera	Dominant grass in protected forest areas	Grains are used as famine food
14.	<i>Brachiaria deflexa</i>			Grow in moist situations	Grains are used as famine food
15.	<i>Brachiaria eruciformis</i>	255336	Chawla grass	Grow in cultivated fields	Grains are used as famine food
16.	<i>Brachiaria reptans</i>	255353	Soraya	Grow in moist situations	Grains are used as famine food
17.	<i>Coix lacryma jobi</i>	255253	Jorgadi/Garelo	Aquatic grass	Grain of this grass are mixed with the grains of <i>Zea mays</i> and are used for making porridge. Seeds are eaten after boiling. It is also considered as a good fodder. The grains are ground to flour for making bread during scarcity of food
18.	<i>Dactyloctenium aegyptium</i>	255254	Malicha/makra	Grow in cultivated fields	Grains are used as scarcity food
19.	<i>Dactyloctenium aristatum</i>	255332	Grow on the margins of cultivated fields	Grains are used as scarcity food	Grains are used as scarcity food

Table 1. (Contd.)

20.	<i>Echinochloa stagnina</i>	-	-	Grow in moist situations	Grains are used as scarcity food
21.	<i>Eleusine indica</i>	255290	Chitki/Malwari	Grow along the margins of cultivated fields	Grains are used as scarcity food
22.	<i>Eragrostis tremula</i>	-	Chirri ghas	Drought tolerant grass	Grains are used as scarcity food
23.	<i>Eriochloa procera</i>	-	-	Grow in moist and shady places	Grains are used in the famine
24.	<i>Hackelochloa granularis</i>	-	Majri Hankli	Grow in grassland fields	Grains are used as famine food
25.	<i>Ischaemum rugosum</i>	255249	-	Grow in rice field	Grains are used as famine food
26.	<i>Panicum sumatranse</i>	255361	-	Forest grass	Grains are used in the scarcity period by the tribals
27.	<i>Panicuin psilopodium</i>	-	Grow in moist situations	Grains are used as scarcity food	
28.	<i>Paspalidium geminatum</i>	255331	Kuri	Grow in grassland fields	Grains are used as famine food
29.	<i>Paspalidium geminatum</i>	-	Kahli	Aquatic grass	Grains are used as famine food
30.	<i>Sehima nervosum</i>	255297	Heren	Grow on hillocks	Grains are used as famine food
31.	<i>Setaria verticillata</i>	255306	Jhetudi	Prefers to sow in soil having high organic matter	Grains are used as famine food
32.	<i>Urochloa panicoides</i>	255329	Sanwal/Kuri	Grow in cultivated fields	Grains are used as famine food

passport data were recorded at the site of collection. Specimens of each small millet species and wild cereals have been preserved in the Agrostological Herbarium of the Department of Botany, M. L. Sukhadia University, Udaipur.

Small millets and other minor wild cereals collected from the tribal dominated districts of southern Rajasthan are presented in Table 1. The small millets (which are of course cultivated to some extent by the hill tribes on limited terrain) are used as scarcity food by the tribals of the area. Hill tribes store the grains of these millets and other wild cereals in air tight earthen pots for use in distressed conditions. The grains of these millets are eaten either after boiling in water or by making chapatis from the flour of the grains. The grains of these small millets and other wild cereals, being nutritionally superior to rice and wheat provide cheap proteins, minerals and vitamins to the poor tribals where the need for such ingredients is the maximum. Their nutritional superiority over wheat and rice is

further confirmed by the ethnobotanical information from the tribals that "One chapati from the grains of these millets is sufficient to quench their hunger for whole day". This fact about their nutritional superiority was further confirmed by taking interviews of many tribals about their nutritional significance from different localities of the region. Some tribals are of the opinion that one chapati of these millets is equivalent to three chapatis of wheat.

Practically devoid of grain storage pest, the small millets have indefinite storage life. The untapped grain yield potential coupled with nutritional superiority makes these small millets potential future food crops particularly in the tribal dominated rainfed area of Rajasthan.

In southern Rajasthan, there are still some unexplored areas and there is an urgent need to retrieve the genetic diversity under natural conditions. This requires significance in Rajasthan state which is faced with chronic drought. Besides

cultivated landraces, there is a need to collect related wild species also. This is especially relevant with small millets, where very little of the available vast natural variations have been explored, studied and utilized. Further, there is an immediate need to conserve the genetic resources of small millets, since areas under these crops are gradually depleting in the state of Rajasthan.

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