



Full Length Article

Unconventional wild fruits and processing in tribal area of Jawhar, Thane District

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ABSTRACT

Tribal people from Jawhar region consuming wild fruit resources like Bhokar, Kakad, Aliv, and Pendhra. They have their own processing methods for preservation like salting, drying, pickle making. Due to unhygienic conditions these preserved products may spoil. It is essential to train SHG group or tribal women for preservation of wild fruits and uplift their economy by market products. Four types of fruits were used for pickle preparation and one fruit of Aliv used for drying method. This study will focus on green economy and establishment of wild fruit orchard.

Key word: Diversity, distribution, *Primula*, Arunachal Pradesh, threats and conservation.

INTRODUCTION

Aborigines consume a main staple diet and it is supported with supplementary wild foods. These species are consumed by various communities depending on the local availability. Various preparations of plant species are prepared and sold in tribal markets. Tribals and local communities have accurate knowledge of wild food resources due to their long association with nature. Jain and Sinha (1988) reported food resources from Indian aborigines. Nene (2004) reported 300 diverse plant species belonging to 90 families utilized as food resources during famine. It includes herbs, flowering stalks, leaves, seeds, kernels, fruits, tubers, etc. Usually these wild species are not in cultivation. Tribal communities in Maharashtra depend upon agricultural food grains. It is insufficient to maintain their families. To make up for the shortage of food grains they have to depend on wild food plants to supplement their diet. Kulkarni and Kumbhojkar (1992) gathered information on unconventional wild fruits plants with appropriate methods/recipes from Mahadeo koli tribe of Western Maharashtra. These wild food plants play an important role in the dietary pattern (Chitre *et al.*, 1983). These tribals consume 144

Non-conventional food resources which are playing major role in nutritional point of view (Kulkarni, 2006).

Tribal communities consume wild tubers, rhizomes and corms either in raw or baked or boiled or roasted form. Tender shoots and petiole strips of Wild banana *Kauder (Ensete superbum)* are chewed. These are previously cooked in salt water. It is believed to suppress hunger for several days. Similarly, Halunda (*Vigna capensis*) is supposed to stimulate the hunger (Nilegaonkar *et al.*, 1985). Efforts were also made to explore the nutritive potential of wild edible tubers, rhizomes, leafy vegetables and wild fruits which supplement several nutrients particularly calcium and carotenoids. Such unconventional wild edible plants are resources of fats, proteins, rich source of micro-nutrients and trace elements (Vartak and Kulkarni, 1987; Kulkarni *et al.*, 2003).

This indicates that food resources in general and fruits in particulars are consumed in different forms by tribal communities of Jawhar. They are using crude method for processing of fruits as pickles or salting for preservation. Present work is carried out at Jawhar for processing of

fruits. Which is potential for market avenue (Joshi *et al.*, 2013).

MATERIALS AND METHODS

Jawhar tahsil of Thane district in Maharashtra is a hilly area lies between 19° 43' and 20° 5' north latitude and 72° 55' and 73° 20' east longitude. The average rainfall of area is above 3000 mm. Survey and traditional preservation practices of wild fruits were undertaken in Villages like Vanganpada and Ramkhind. Demonstration of pickle preparation from wild fruits was shown to SHGs (self help groups). More than 50 women are actively participated for training having different age groups. The fresh wild fruits collected by the women's from surrounding forest. Tribal people using wild plant species for food, fodder, shelter and medicine for human and animal. Some of the underutilized wild edible food plants have great potential for adding nutrition to basic diet. Studies on nutritional value of wild edible plant species are significantly considered. It may help to identify ancestral knowledge of food resources. Some of the underutilized wild edible food plants have great potential in proximate chemicals like Protein, Carbohydrates, Vitamins and Minerals.

Few of wild food resources are available in abundance during particular season. Proper preservation and processing methods need to be standardized on low cost, user friendly preservation and scientific processing techniques for year round availability for consumption.

Food processing

Various recipe preparations from wild fruit

1. Pickle preparation from Bhokar

(*Cordia dichotoma* Forst. f.)

Ingredients required

Sr.	Ingredient	Quantity
1	Bhokar	1 kg
2	Fenugreek seeds	20 gm
3	Mustard seeds	70 gm
4	Red chili powder	40 gm
5	Salt	70 gm
6	Asafetida	20 gm
7	Oil	300

Preparation of Spice Mix

20 gm Fenugreek seeds (coarsely ground), 70 gm Mustard seeds (split de-skinned), 40 gm Red chilli powder, 35 gm Salt, 20 gm Asafoetida

Method of preparation of pickle from Bhokar fruits

Collect the fresh fruits from forest area. Wash and dry them with a cloth. Remove the stem and make a cross slit on the top. Take a chop stick, dip it in salt, stick it in the fruit through the slit and scrape the seed out of the fruit. Once the gum berry is deseeded, apply salt inside using the chop stick. Repeat this process for all the fruit. Prepare spice mix by combining together the ingredients mentioned. Add 2-3 table spoon of oil to the spice mix to get crumb like consistency. This will help spice mix stick to the fruits. Fill 3/4th of the fruits with the spice mix through the slit. Make sure there is no or little spice on the outer skin of fruit. Keep the remaining spice mix for further addition. Heat the oil in a bowl. Increase the oil quantity if needed (Once the fruits are cooked in oil, we are going to add remaining spice mix to it. If oil quantity is not sufficient, the pickle might turn dry.) Add stuffed fruits to it. Cover it with a lid and let the fruits simmer for 40-45 minutes on a very low flame. Keep checking and stirring occasionally. Once the fruits are fully cooked, let them cool naturally. The pickle is ready to eat. Stored it in cool and dry place and avoid the direct sunlight.

2. Kakad (*Garuga pinnata* Roxb.) pickle preparation

Ingredients required

Sr.	Ingredient	Quantity
1	Kakad	1kg
2	Fenugreek seeds	12 gm
3	Mustard seeds	70 gm
4	Red chili powder	40 gm
5	Salt	150 gm
6	Asafetida	30 gm
7	Oil	250 ml
8	Turmeric powder	20 gm
9	Coarsely grinded cloves, black pepper, fennel seeds	20gm



Fig.1: Bhokar (*Cordia dichotoma* Forst. f.)



Fig. 2: Bhokar pickle



Fig.3: Kakad, (*Garuga pinnata* Roxb.)



Fig.4: Kakad pickle



Fig. 5: Aliv (*Meyna laxiflora* Robyns)



Fig.6: Aliv Pickle



Fig.7: Pendhra (*Tamilnadia uliginosa* (Retz.) Tirveng. & Sastre)



Fig. 8: Pendhara pickle



Fig. 9: Dried ripe Aliv (*Meyna laxiflora* Robyns) preparation

Preparation of fruits

Collect the fresh fruits from the Kakad plants. Wash it and dry the fruits. Prick the all fruits with the help of wooden toothpick.

Method of preparation of pickle from Kakad

Apply some quantity of turmeric and salt keep in sunlight for 5-6 hr. Heat the half quantity of oil in pan and add all the coarsely grounded spices, red chilli, and turmeric powder and prepare seasoning.

Remove the pan from gas and pore on the fruits which are prepared by applying salt and turmeric powder followed by partially sundried. Heat remaining quantity of oil and cool it for some time and pore in the glass jar containing the fruits. Take care that all pieces of fruits cover with oil to avoid the spoilage of pickle during storage. Keep the bottle in cool and dry place. Avoid the direct sunlight.

3. Aliv (*Meyna laxiflora* Robyns) Pickle preparation

Ingredients required

Sr	Ingredient	Quantity
1	Aliv	1kg
2	Fenugreek seeds	12 gm
3	Mustard seeds	70 gm
4	Red chili powder	40 gm
5	Salt	150 gm
6	Asafetida	30 gm
7	Oil	250 ml
8	Turmeric powder	20 gm
9	Coarsely grinded cloves, black pepper, fennel seeds	gm

Preparation of fruits :-

Collect the fresh fruits from the Aliv plants. Wash it and dry the fruits. Cut it in to 8 halves longitudinally and remove the seeds. Mix the fruit pieces with 3% salt thoroughly and kept for drying on clean cloth in sunlight for 2-3 days. Use these pieces for pickle preparation after rehydration with water.

Method of pickle preparation from Aliv

Apply some quantity of turmeric and salt keep in sunlight for 5-6 hr. Heat the half quantity of oil in pan and add all the coarsely grounded spices, red chilli, and turmeric powder and prepare seasoning. Remove the pan from gas and pore on the fruits which are prepared by applying salt and turmeric powder followed by partially sundried. Heat remaining quantity of oil and cool it for some time and pore in the glass jar containing the fruits. Take care that all pieces of fruits cover with oil to avoid the spoilage of pickle during storage. Keep the bottle in cool and dry place. Avoid the direct sunlight on it.

4. Dried ripe Aliv (*Meyna laxiflora* Robyns) preparation

Ingredients required

Sr.	Ingredient	Quantity
1	Ripe Aliv pieces	1 Kg
2	Salt	20gm

Preparation of fruits

Collecting the fruits from forest area. Washing the fruits with clean water and wipe with clean cloth. Slice it in to 8 longitudinal sections.

Procedure

Apply equally salt on all parts of slices. Kept for drying on clean cloth for drying. Stored in clean plastic bags.

5. Pendhra (*Tamilnadia uliginosa* (Retz.) Tirveng. & Sastre) pickle preparation

Ingredients required

Sr.	Ingredient	Quantity
1	Pendhra fruits	1 Kg
2	Dried mango pieces	100gm
3	Anardana	50 gm
4	Pickle masala	250gm
5	Red chilli powder	100gm
6	Turmeric powder	50gm
7	Mustard dal	200gm
8	Salt	150gm
9	Oil	250 ml

Preparation of fruits

Collect the fresh fruits from the Pendhra plants. Wash it and dry the fruits. Cut it in to 4 halves longitudinally and remove the seeds. This halves boiled in water.

Procedure

Dried mango pieces boiled in small quantity and prepare paste from it. Boiled the oil very well Take large vessel add pendhra fruits and all above ingredients and half quantity of boiled oil (add after cooling 500gm) and mixed well with spoon. After cooling filled it in clean, aseptic glass jar, add remaining oil and try to cover the entire surface with oil, to avoid the contamination of fungus and moulds. Cover with clean and tied lid. Placed in cool place. Avoid direct sun light.

RESULTS AND DISCUSSION

Jawhar is very known tribal block of Thane district. Farming system of Jawhar area is mainly depending upon the rain water (Rainfed agriculture). Major crops under cultivation are Rice, Finger millet, Proso millet and minor crops includes Niger, Black gram and Pigeon pea etc. Hilly area of Jawhar is rich for wild food resources. Tribal communities collect wild fruits, vegetables, nuts,

berries, tubers and leafy plants from surrounding forest area and fulfil their nutritional requirement. Traditional knowledge is existing from long association with nature. Now days their living and consumption pattern has been changed and these valuable food resources becoming rare and extinct due to over-exploitation.

In present investigation of food processing tribal women collected wild fruits of Aliv, Bhokar, Kakad, and Pendhra from forest. Fifty SHGs (Self help groups) women have given proper training before pickle preparation. All the essential ingredients like Salt, Oil, Mustard Dal, Turmeric, etc. were properly add for its quality. Proper procedure for its preparation has been carried out.

Unconventional fruits and vegetables have nutritional values and consumed by tribal people from India either raw or processed (Vartak and Ghate, 1994, Ghate *et al.* 1997, Agrahar-Murugkar and Subbulakshmi 2005, Kulkarni, 2007). Processing of these fruits will be an additional benefit to local people for strengthening tribal economy. This leads to new planation on their farm/kitchen garden/ community forest land, which will be a continuous supply of raw material to small scale industry of pickle preparation or SHG groups. Naturally employment generation in tribal area will be ultimate aim of the present study.

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