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Plants used as Agricultural seasons indicator by *Mao Naga* tribe, Manipur, India

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The paper presents four plants used as an agricultural season indicator by *Mao Naga* tribe of Manipur, India. Agriculture is the main occupation of the tribe and they have a unique way of knowing plantation season for different crops by observing the flowering of some plants. The indicator plants are peach (*Prunus persica*), wild cherry (*P. carmesina*), camel foot (*Bauhinia purpurea*) and dancing girl (*Mantisia spathulata*). The information on plants used as season indicators may help understanding the global warming and climate change in recent years. There is a need for involving interdisciplinary research to unveil the mystery of folklore science for the prosperity of mankind.

Keywords: *Mao Naga* tribe, Manipur, Indicator plants, Agricultural seasons
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Since time immemorial plants have been used by mankind for food, shelter, cloths and medicines. Plants have been also used as an indicator for air and water pollution[1,2], in prospecting for metals in soil[3-5], etc. Ethnobotanical uses of plants by various ethnic groups from North eastern India has been reported by many workers[6-10]. However, so far there is only a single report on the uses of some plants as indicator for plantation seasons by *Pnar* tribe of Meghalaya from North eastern India[11]. The present paper reports four plants as indicator of season for plantation of different crops in the field by *Mao Naga* tribe of Manipur.

The *Mao Naga* tribe inhabits the northern hills of Senapati district of Manipur in North east India. According to 1991 census the tribe has a population over 90,000. Their villages comprising of about 100 - 300 houses are located on hilltops. They are settled as agricultural community and practice both terrace and wet paddy field cultivation. In olden days, the tribe has no trade with the outside world and hence, there was no other source of food supply except from their fields. Therefore, agriculture was the main occupation for the tribe. Failing to plant or sow crops at the right season may results in famine for the whole community and so it was very important to plant crops at the right season. For this the tribe has a unique way of knowing the right time of plantation by observing carefully some plants flowerings. The agricultural practices of the tribe are considered to be most advance among the various *Naga tribes* in North-east India.

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Folkore of *Mao Naga* tribes

The *Mao Naga* tribe has no script of their own; therefore, there is no written record or literature. However, their precious knowledge of folklore-botany have been transmitted orally from generation to generation and preserved within their own tradition and cultural environment. There is a belief among the *Mao* tribe that the plants grazed by cow are non-poisonous and can be eaten by human beings, adequately expressed their dependence on the plant wealth in their day-to-day life. The different uses of plants by the *Mao Naga* tribe of Manipur have been described elsewhere[8,9].

Materials and method

The information on plants used as agricultural season indicators by *Mao Naga* tribe was gathered by interviewing village elders. The plants materials collected and identified with the help of Assam herbarium, Botanical Survey of India, Eastern Circle, Shillong. The plants are enumerated alphabetically below with botanical name followed by family name in bracket and local name in *Mao* language in inverted commas. The folklore associated with the plant is narrated in detail.

Season Indicator plants

1 *Bauhinia purpurea* L. (Caesalpinaceae), *Levo sii*

The plant is also commonly known as *Camel foot* for its leaf shape that looks like a Camel foot. When the plant starts flowering the people knew that it is the appropriate time to sow rice, millet, etc. in *jhum* fields (Fig. 1).

2 *Mantisia spathulata* (Roxb.) Schult. (Zingiberaceae), *Ohrai kama*

The plant is also commonly known as *Dancing girl* (Fig. 2). It is rare and endemic to North east India. The plant flowers during the month of May and it is said that the flowering time of the plant is so constant. According to the folklore of the *Mao* tribe it is told that *M. spathulata* whether rain or drought it will flower when its time comes every year. Therefore, it is believe that *M. spathulata* always flower on time regardless of the weather. In olden days and even today when the plant start flowering it is assumed by the villagers that it is time for transplantation of rice seedling sown in *jhum* on wet paddy field.

3 *Prunus carmesina* Hara (Rosaceae), *Pfuva sii*

This wild cherry is common in the hills of Manipur. The plant flowers in the month of March. The flower bloom first and then followed by new leaves (Fig. 3). The villagers by observing the plant in flower know that the warm season has come and it is time to plant crops such as pulses, cabbage, potatoes, etc. in the farm or *jhum* field.

4 *Prunus persica* Stockes (Rosaceae), *Mikria sii*

This is the common peach plant found in villages, kitchen garden and farm. It flowers in the month of March (Fig. 4). When the plant blooms, the people are conscious that it is time for plantation of main vegetables, such as potato, cabbage, etc. It is also the time for sowing of rice in *jhum* field, which will used as seedlings and transplanted to the wet paddy field. It is commonly practiced from the last week of May to second week of July. According to the *Mao* legend that at a certain time in olden days *Mao* villagers did not like the rituals of Makhel village chief who is the Head of all the *Mao* tribe in religious matters (Makhel village is consider by most of the present *Naga* tribes in Manipur and Nagaland as their ancestral village). The chief plays a very important role in agricultural activities. He performs rituals and guides the people for plantation of crops in different seasons. It is said that the village chief was driven away to a distant village called *Shizechile* in the far eastern part of the present *Mao* country. The *Mao* people, as a result, forgot the planting seasons of crops and there was famine for 7 consecutive years. The people were therefore, in great trouble. At this critical position, the new village chief sent some village elders to '*Shizechile*' village where the deposed chief had settled, to request him to tell them the different seasons of plantation. The folklore goes on to say that when the village elders approached the exile village chief he refused to tell them, and even the elders of that village refused to tell them too. It so happened that a young lady from *Mao* tribe who had married to a man in the village saw the *Mao* elders roaming helplessly in the village. She felt pity for them but could not tell them the season directly, so while carrying and rocking her child she sung a song in which it tells that when the peach flower it is time for sowing main vegetable crops, such as potato, cabbage, etc. and goes on to narrate the different seasons in her song. It is said thus, the village elders learned from the song the different seasons for plantation and went back to their village. That was how the *Mao* people averted from the great confusion and famine that had affected the people for 7 consecutive years.

Figs. 1-4—*Bauhinia purpurea* L; 2. *Mantisia spathulata* (Roxb.) Schult; 3. *Prunus carmesina* Hara; 4. *Prunus persica* Stockes

Conclusion

From the above observation, it revealed that the tribe has learned to live with nature and they were able to read the designs of nature like an open book. The information on plants used as season indicators may help understanding the global warming and climate change in recent years. There is a need for involving interdisciplinary research to unveil the mystery of folklore science. However, unfortunately, much of the valuable folklore science is getting eroded due to the rapid modernization which has made the people less dependent on nature in their day-to-day activities. It is high time, therefore, efforts should be made to record the rich knowledge of folklore science of the different tribes in the entire North eastern India which may unfold a vast wealth of scientific knowledge for the prosperity of mankind.

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