

A PRELIMINARY INVESTIGATION ON ETHNOMEDICINAL PLANTS USED BY WANCHO TRIBES OF ARUNACHAL PRADESH, INDIA

Khatwang Wangjen, Shivaji Chaudhry, Satish Chandra Arya and Prasanna Kumar Samal

G.B. Pant Institute of Himalayan Environment and Development,

North East Unit,

Vivek Vihar, Itanagar - 791 113 (Arunachal Pradesh).

Abstract: This study aims to document the traditional medicinal plants used by Wancho tribe of Arunachal Pradesh. The study reveals the use of 13 species of medicinal plants belonging to 12 genera and 12 Families. Wancho tribe in the study area used majority of plant to treat stomach related ailments 33.33%, followed by other common problems like cuts wounds, fracture etc. Due to changes in the religion and modern way of life this knowledge is disappearing fast and needs to be documented.

INTRODUCTION

Arunachal Pradesh with a total geographical area of 83,743 km² is exceptionally rich in biodiversity in its varied agro climatic zone. The state is rich in flora and faunal diversity of both ethnocultural and ecological significance by virtue of having all climatic zones ranging from tropical to snow-clad alpine mountains and has about 82% forest cover. The region is mainly characterized climatically by the occurrence of heavy rainfall, moderate temperature and high relative humidity which favours luxuriant growth of biodiversity in its diverse ecosystem ranging from rivers, streams, ponds and marshy land to dense forest terrestrial rainforest and snow-clad alpine meadow. Almost 50% of the Indian higher plants with medicinal, commercial and ethnocultural significance are concentrated in the forests of Arunachal Pradesh (Tag *et al.*, 2008). India's North East region including Arunachal Pradesh harbours more than 8500 species of Angiosperms which accounts for about 50% of the flora of the country and of both general and ethno medicinal importance (Mao and Hynniewta, 2000). The state of Arunachal Pradesh has been recently cited as hub centre of rare and highly potential medicinal plants mostly used as ethno medicines among the tribes. It forms part of the Himalayan global biodiversity Hotspot with 26 major tribes and about 110 sub tribes who use the biological resources for the sustenance of their livelihood (Murtem, 2000). In recent decades, WIO in its Geneva Declaration has reemphasized the use and significance of the medicinal plants and stressed on the point that about 80% of the global

population are depending on herbal medicines in their rural healthcare system (Anon., 2005).

The Wancho are a tribal people inhabiting the Patkai hills of Tirap in Arunachal Pradesh. They have a population of about 35,000. Their language belongs to the Tibeto-Burman family. Wancho believe in the existence of two powerful deities, *Rang* and *Baurang*. Christianity has gained some followers among the Wancho, many of whom belong to the Baptist or Roman Catholic denominations. Acceptance of Christianity has largely to do with comparative influences from the Nagas of Nagaland as well as changing perspectives on headhunting. However, this has also resulted in the decline in many aspects of their traditional culture, which has strong associations with religion (Subba *et al.*, 2005). The Wancho largely depend on natural resources for their livelihood. They maintain a strong symbiotic relation with their forests. As for example, the people have their own *Piper betel* groves and they take care of them in every possible manner because betel leaves form the integral part of the culture and is economically valuable locally. Timber is another example of dependency on the natural resources. Moreover, there are many ethno botanically important plants which are used in house building, used as wild vegetables, wild fruits, medicinal plants and cultural ceremonies etc. They practice settled agriculture as well as Jhum cultivation like the rest of other tribes do. They have their own forest land for Jhum cultivation and indigenously developed technology for trapping and hunting in the forest. They have a very good knowledge about various plant species. They can

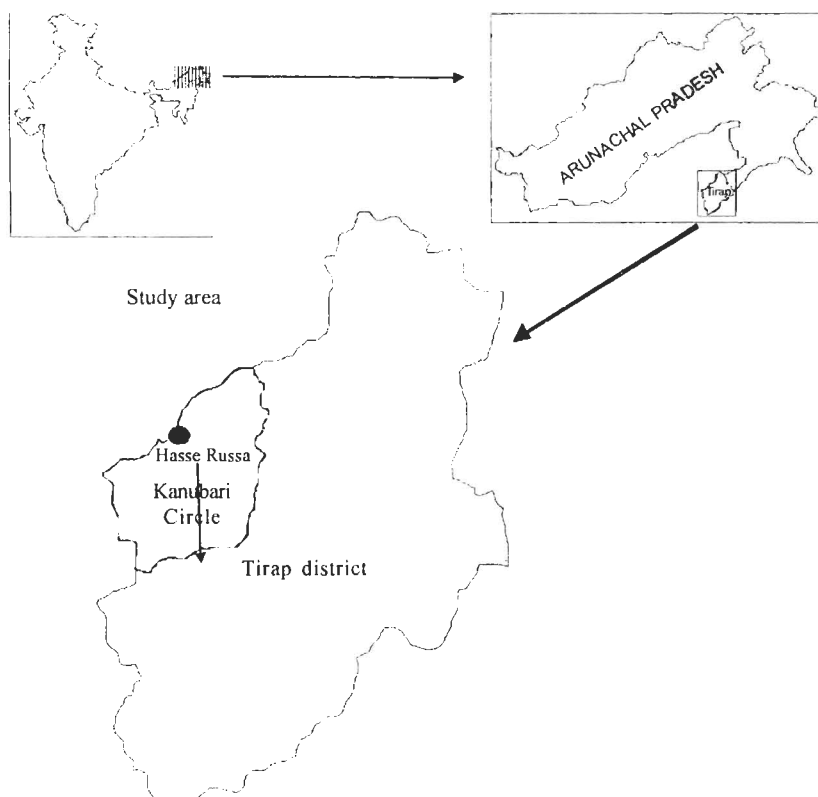


Fig. 1. Map of study area showing Hasse Russia.

identify which are harmful, poisonous and allergic intoxicants, edible or non-edible etc. With the changes in the religious practices and inclination towards modern life the traditional knowledge is disappearing thick and fast and there has been hardly any attempts to decipher the same.

MATERIALS AND METHODS

Tirap district of Arunachal Pradesh covering an area of 2,362 km² is situated in a unique geographical area bounded by Burma in the South, Assam in the North, Nagaland in the West and Changlang district of Arunachal Pradesh in the East (Dutta and Bhattacharjya, 2008). The total population of the district is 1,00,326 which accounts for 9.19% of the total state population. The density of the population is 42 persons per km² which is the highest in the state. Sex ratio is 911 females per 1000 male and the literacy rate is 42.02% (Anon., 2007). Maximum and minimum winter temperatures were recorded 10°C and 25°C respectively and maximum summer temperature

recorded was upto 35°C. A maximum of 1000-1200 mm of annual rainfall was recorded during July and August with relative humidity of 80-85% (Anon., 2001). The vegetation of Tirap comprises mainly of tropical semi-evergreen forests (Tag *et al.*, 2008). Hasse Russia (Fig. 1) was selected as the study village. The village is one of the prominent villages which falls under Kanubari circle and is inhabited by the Wanchos. The population of the village is 508 with 93 households. People of Hasse Russia have a very good indigenous knowledge system and they know the utility of various plant species. The local people sustain their livelihood through agriculture, ethnoforestry, fishing and hunting activities.

Rao and Jain (1977), Martin and Sempler (1994) field methods were carried out in the present study. Field investigations and collection were carried out with the help of local herbalists of the above mentioned village. A total of 3 herbalists were interviewed for the survey, out of them 1 was male and 2 were females. Open ended questionnaires were

Table -1: Ethnomedicinal plants listing used by Wancho tribe

Species	Family	Vern. name	*Habit	Habitat	Part used	Ailments
<i>Acorus calamus</i> L.	Acoraceae	Wok-kak hing	H	Wetland	Leaves	Stomach ache
<i>Alstonia scholaris</i> L.	Apocynaceae	Tsam tson pan	T	Dry areas	Leaves	Wound healing
<i>Cassia alata</i> L.	Leguminosae	Khatri pan	S	Dry areas	Leaves	Skin disease
<i>Centella asiatica</i> L.	Apiaceae	Lum-loh	H	Shady areas	Whole plant	Stomach ache and dysentery
<i>Chrysanthemum indicum</i> L.	Compositae	Hahkak rangkak	S	Dry areas	Leaves	Pain relief
<i>Erythrina stricta</i> Roxb.	Fabaceae	Shit pan	T	Dry areas	Flower	Scorpion sting
<i>Euphorbia ligularis</i> Roxb.	Euphorbiaceae	Thamran-hingnu	H	Epiphytic	Stem	Bone fracture
<i>Litsea polyantha</i> Juss.	Lauraceae	Ngop	T	Dry areas	Stem	Bleeding stopper
<i>Oroxylum indicum</i> L.	Bignoniaceae	Pan okui	T	Dry areas	Root	Stomach problems
<i>Phlogacanthus curviflorus</i> Wallich.	Acanthaceae	Thamran hingsa	S	Shady areas	Leaves	Cut wounds
<i>Phlogacanthus thrysiflorus</i> Roxb.	Acanthaceae	Ran hing	S	Dry areas	Leaves	Stomach ache and dysentery
<i>Scoparia dulcis</i> L.	Scrophulariaceae	Lumpu panchong	H	Dry areas	Leaves	Jaundice
<i>Tetragium serrulatum</i> (Roxb.) Planch	Vitaceae	Van-huak hing	H	Shady areas	Leaves	Fire wound

Vern-Vernacular, H-Herb, T-Tree and S-Shrub

used along with participant interview method. All the necessary informations regarding the local names, plant parts used and name of the ailments were collected from the herbalists. Herbarium specimens and digital photographs of the plant species were collected and identified using standard taxonomic books like Flora of Arunachal Pradesh, Flora of British India and Flora of Assam and also consulting the regional herbarium of Botanical Survey of India at Itanagar.

RESULTS AND DISCUSSION:

All the plant species were arranged alphabetically with their botanical name, family, vernacular name, habit, habitat, parts used and medicinal uses (Table -1). The study revealed that there are 13 species of plants distributed in 12 genera and 12 families. The habit of plants shows that 41.66% plants belong to herb, 33.33% to shrubs and 33.33% to trees. The habitats of all the plants were also noted and it was found that most of the plants were found in dry

habitats (61.53%), followed by shady areas (23.07%), epiphytic (7.69%) and wetlands (7.69%). The study revealed that 61.53% plant parts used are leaves, 16.66% plant parts are used as stem and flower, root and whole plant contribute 7.14% each. The study also revealed that stomach related ailments accounts for 33.33%, followed by bleeding, cut wounds, jaundice, scorpion sting, bone fracture, skin disease, wounds, fire wounds and pain. Results of the present study reveal that leaf is the most common plant part being used having 8 families followed by flower and bark having 2 families each, root and whole plant body having 1 family each. Stomach ache related problems are the most common ailment which is traditionally cured.

The better access to modern allopathic modes of treatment has resulted in decline in interest of usage of traditional ethno-medicinal plants by the Wanchos. The traditional herbalists have presumption that disclosure of their knowledge would result in loss of efficacy of treatment and therefore reluctant to

disclose the knowledge to the outsiders. However, it is very important to document such knowledge before they totally disappear. The documentation of these species and commercialization through cultivation will not only help to improve the socio-economic status of the Wanchos but also to conserve these species.

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