



ETHNO BIOLOGICAL STUDIES ON HONEY AMONG THE KANIKKARS OF AGASTHIYAMALAI BIOSPHERE, PECHIPARAI FOREST RANGE OF WESTERN GHATS

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ABSTRACT

Honey is an energy rich medical product produced by honey bees. There are different species of Honey Bees. Honey Bees include Stinged Bee is commonly known as Indian Honey Bee, *Apis cerana sub species indica* and stingless Honey Bee *Trigona irridipennis*. The stingless bees are very small, 1-2mm in length and resident species which nest among boulders, old walls, dead trees and tree cavities. They are widely distributed in tropical and temperate regions of the world except African countries. Among the animal products used by the Kanikkars, honey is one among them. It is a dietary supplement and a medicine too. Kani's are masters in honey hunting. They collect the honey with the help of bow and arrow from the tall trees or steep mountains. While going for hunting they perform special poojas by keeping the bow and arrow in front of the Goddess and also get the blessings from the Pilathi; who is the head man of the aboriginals. The information of various uses of honey among the tribal people is collected and presented in the present study.

KEYWORDS: Honey, Ethnobotany, stingless bee, *Apis Cerana*, *Trigona irridipennis*



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INTRODUCTION

India is a country gifted with faunal and floral biodiversity. Western Ghats is one among the hotspot region with geographical area about 69,703 sq kms and 24,000 sq kms recorded as forest area. In the Western Ghats Agasthiyamalai Biosphere Reserve is in South Kerala extended to parts of Kanyakumari and Tirunelveli Districts of Tamil Nadu lying between 77°5' and 77°40' East longitudes 8°20' and 8°50' North longitudes^[1]. The Agasthiyamalai Biosphere Reserve forest area is inhabited by various groups of aboriginals such as Kani's, Paliyar's and Thodar's. The Kani aboriginals are one among them, the most primitive people lives in the Pechiparai and in and around the secondary hills of Pechiparai reserve forest range. There are about 48 settlements with a total of 3900 people in Kanyakumari District according to 2001 Census. The Kani people are highly knowledgeable about the uses of plants, animals and their products as medicine. The Tribal's and Ethnic peoples are totally depending on local and traditional medicine system for their health care because they are living in remote forest areas, where hospital and other modern medical facilities are not available^[2,3]. They use their traditional knowledge for medicinal purpose and the knowledge is passed through oral communication from generation to generation^[4, 5].

Honey bee belongs to the group Arthropods. It belongs to the genus *Apis* and species *cerana* and sub species *indica*. The product what we collect from the honey comb is known as honey. The honey bees collect the nectar from the flowers and convert in to honey and stored in the wax based honey comb for future uses of Bees and young pupa of the honey bees. Honey bees nest in the hollow trucks and branches of tall tree or in rock cervices. They also are encountered in wall cavities some times on top regions of the old huts. The Kanikkars mostly collect the honey from jungle forest. Because the honey collected from the wild nature is of high medicinal value than the artificial rearing honey nests. The wild honey collected from the forest of Western Ghats is more valuable because the honey bees collect the nectar from different

kind of natural vegetation (Polyfloral origin of the honey) but the reared honey bees; they collect the honey mostly from single or a few species of locally cultivated plants like rubber, teak, coconut, banana etc. Moreover in apicultural farm they provide artificial food like sugar or glucose solutions to honey bees during the non flowering seasons and collect honey, which will not have not much medicinal value. Because of this local people and Vaidhiyars prefer the honey collected by the Kani aboriginals which is 3-5times costlier than normal reared honey. Because of the vegetation abundance and the agro climatic condition in the Agasthiyamalai Biosphere the flowers are found in the trees throughout the year. In Pechiparai forest range the Kani people collect two types of honey. The honey they get from the species *Apis cerana* sub species *indica*^[6] is the ordinary honey which is called as sting bee honey. The other one they get from the *Trigona irridipennis* species^[6] which is stingless bee honey or cheruthen which is rare and costly because of the high medicinal value

MATERIALS AND METHODS

Frequent field trips were made in the Kani settlements of Agasthiyamalai biosphere reserver pecchippari region of Western Ghats. In the Kani settlement, the head man is called as Pilathi and other members are having practical knowledge of medicinal plants. They were interviewed and got the first hand information about the Ethno pharmacological uses of different types of Honey, Indian honey bee honey and Cheruthen were documented.

RESULTS AND DISCUSSION

Ethno Pharmacological use of India honeybee Honey.

Honey mixed with *Phyllanthus emblica* (Indian gooseberry) juice is given to young child and even it is rubbed on the gum of child to facilitate the erupting of the teeth from the gum. Matured *Phyllanthus emblica* fruit is put in the honey for one month and after that one fruit

along with 1 tea spoon of the syrup is taken in the morning and evening as a health tonic. Honey mixed with the flour of *Settaria italic* (Thinai Mavu) is offered to God and one hand full of that is taken in as a diet in the morning and evening hours. Honey mixed with a Tea spoon of root powder of *Withania sominiferea* (Ammukuram) is taken as a immunomodulatory drug. It gives disease resistance to the body and act as a antioxidant and anti inflammatory drug. Honey is applied on the wound caused by fire. It protects the wound from bacterial and other infection. It induces the formation of new skin in the body. Honey is added with the lemon juice and taken in summer hot days, it acts as a cooling agent and induce appetite and remove the muscle fatigue. It also acts as an antioxidant. One tea spoon of honey is mixed with a cup of hot water is taken in the early morning in the empty stomach reduces the body weight and it acts as an antioxidant. A tea spoon of honey mixed with a cup of hot water and a few buds of shoe flower (*Hibiscus rosa-chinensis*) or lotus petals (*Nelambium speciosum*) taken in to reduce the blood pressure and it also act as a cardio tonic. A cup of Nilavembu (*Andrograpis panniculata*) plant extract along with one tea spoon of honey is taken in for viral fever. It can be also taken as an antidote for snake venom. Now a day it is given for dengue fever, a disease which is caused by a virus. To one cup of the hot water extract (decoction) of dried ginger (*Zingiber officinalae*) pepper (*Piper nigrum*) thipile (*Piper longum*) citaratha (*Alpinia galanga*) nanjaruppan (*Tylophora asthmatica*) thoothuvilai (*Solanum trilobatum*) kandankathiri (*Solanum xantocarpum*) thulasi (*Ocimum santum*) neem root bark (*Azadiratica indica*) two tea spoon of honey is added and taken in for two times for 3 consecutive days for fever, asthma, arthritis, cough and joint inflammation. It can be also taken for bacterial and viral infections. It is also taken for food intoxication and an antidote for venoms.

A piece of Vasambu (*Acorus calamus*) heated over a flame and then made in to a powder, along with a tea spoon of honey and made into a paste. It is taken in the palm and licked with the help of tongue while going for bed. It cures the acute tonsillitis and throat infection. If it is applied on the tongue of very young babies it improves the speech. It is a

very good treatment for common disease to young children known as kakkuvan (Whooping Cough) disease. In a cup of water a tea spoon of pure honey along with a few garlic (*Allium sativum*) is added and it is given for food toxicity and chemical or over dosage of medicinal toxicity problems. Matured and fully ripened fruit of thoothuvilai (*Solanum trilobatum*) is taken in a new mud pot and pure honey is added over that until all fruits fully immersed. Close the mouth of the pot with the mud lid and cover with a clean cloth. Put the pot inside a sack containing paddy grain for 41 days. After 41 days take the whole content make in to a syrup by stirring it with a help of a wooden spoon. The syrup is stored in a glass bottle. One tea spoon of the syrup is taken in twice a day for 21 days. It cure bronchitis, asthma; cough and also it act as immunomodulatory drug. It is also given for child above the age 6 months. Honey wax is applied on the wound as a band aid for fast healing of the wound. Honey comb along with the pupa is crushed and a milk solution is obtained. It is taken in for mouth and throat infection. Jack fruit (*Artocarpus intgerifolia*) pulp is put in the honey. The fruit along with the honey is taken as a delicious food. It can be stored for more than 30 days. Even the diabetic patient can take honey as the energy source because of low calories food value and very less sucrose content.

Cheruthen

Cheruthen is collected from nest of stingless bee. It belongs to the genus *Trigona* and species *irridipennis*. As the name suggests, their stings are vestigial and use less in defence. Stingless bees are social and store pollen grains and honey. In their search for nectar and pollens, stingless bees are important pollinators for many species of flowering plant. In this way they share the same ecological role as the ordinary honey bees. The honey varies in quality depending on the species and the plants from which the nectar is collected. In general the Cheruthen is aromatic because the plant resin is used to build the pots in which the honey is stored. The honey is black in color; less density and more acidic than of Indian honey bee honey. Stingless bees honey is more medicinal value and ten times costlier than ordinary honey. The

medicinal value is because of the resin and more vitamins and minerals content. Cheruthen contains vitamins like B1, B2, B6, niacin, nicotinic acid, panthaemic acid, and more amount of vitamin c and the minerals like potassium, calcium, magnesium, iron, copper, manganese, sulphur, chromium, nickel, tin, silver and gold.

Ethno pharmacological use of cheruthen

The cheruthen mixed with pepper and alcohol is taken by the adult people to cure common cold, fever and cough. The Cheruthen is added as the sweetening agent while giving the plant extract as a medicine to young babies. The Cheruthen is mixed with Kalthamarai (*Begonia flacifera*) leaf juice for scurvy. The pollen grains collected from the honey comb is given for primary complex of young children. Because of the high mineral content, resin and vitamin content the stingless bee honey possess anti oxidant and anti bacteria properties and fight against diseases. So it is an immuno modulatory drug. It is said to have anti carcinogenic property and prevents even cancer. Cheruthen is used as a sweetening material for many siddha and ayurvedic preparations in lieu of ordinary honey. Honey is added to the fruits of mango, jack, and banana along with ghee is offered to God. It is traditionally known as Panchamirtham, (five

ingredients) or Neivedhiam. It is an energy rich and sweet fruit preparation which can be stored for months together. In Yajur vedha and in ancient literature there are mentions about the use of honey. In Hinduism honey (madhu) is one of the five elixirs of immortality. In temples, honey is poured over the deities in a ritual called Madhu abisekam to get divine power and the honey is taken as a prasadhham for immortality by the devotees. As a pollinating agent the honey bees plays an important role in the ecosystem. It collects the nectar form the flowers and convert in to honey which is a half life span of 4 years. The Kani people are well versed with the usage of honey as a medicine and dietary supplement. In this juncture it is our duty to conserve the flora and fauna and to save the human being from immortality.

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