



Indigenous Knowledge And Practices Of Bee Keeping With Apis Cerana In Mao Manipur

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Abstract

This study explores the indigenous knowledge system and traditional practices of bee keeping among the Mao Naga tribe of Manipur. Rooted in generations of experiential learning and ecological understanding, Mao beekeeping represents a sustainable, cultural embedded livelihood practice. Using qualitative methods, including interviews, focus group discussions, and participant observation, the research documents indigenous methods of colony capture, types of hive, Traditional methods of harvesting of beehive products, pest control methods, and the socio-cultural significance of honey and bees. The findings reveal that Mao beekeepers primarily use log hives made from native trees, organic pest deterrent and adhere to traditional taboos and ritual associated with apiculture. It also reveal that majority of beekeeper harvested twice in a year i.e., June/July and again in the month of December and early January and men are responsible for honey harvesting which is mostly carried out at night because during the day the bee has a strong defensive behavior. Despite its ecological and cultural value, the practice faces challenges such as declining bee populations, knowledge erosion among youth, and lack of institutional support. This study was carried out to collect the information regarding the indigenous knowledge and practices of farmers on beekeeping and underscores the importance of recognizing and integrating indigenous knowledge in sustainable beekeeping strategies and calls for policy measures to protect and revitalize these traditional systems in the face of modernization and environmental change.

Key words: - Beekeeping, Traditional Knowledge, Indigenous methods, Indigenous bee hive

INTRODUCTION:-

Beekeeping, one of the oldest forms of agriculture, plays a crucial role in supporting rural livelihoods and biodiversity conservation. Beekeeping is the maintenance of honey bee colonies, commonly in hives, by humans. According to Verma (1990), Beekeeping is a profitable enterprise. There is no negative impact of beekeeping on the environment. In the north-eastern state of Manipur, the Mao tribe has been practiced traditional beekeeping for generations, deeply intertwining the craft with their culture and ecosystem. Mao tribe mostly rears in traditional method, these practices is easy to imitate due to its simplicity, with locally available resources and low cost input. This practice not only provides honey and beeswax, but also contributes significantly to pollination, enhancing crop yields and sustaining local biodiversity. Mao has a vast wild forest with plentiful bee flora from natural endowment. Saha (1990), many organizations have already undertaken beekeeping programme as a good weapon for self-employment and poverty reduction for the rural people. However bee keepers in Mao confront a number of problems, including poor bee management, colony migration and absconding, pest and foes attack, insufficient bee research program, and the increasing use of pesticides have all contributed to the reduction in bee population. Additionally, the lack of scientific training, modern equipment, and marketing of bee products, knowledge erosion among youth were found to be major limiting factors in the prospect of bee keeping. Despite these challenges, Mao holds immense potential for apiculture development due to its favourable natural conditions and growing demand for organic honey. Hence, it is necessary to document the available indigenous knowledge and practices of beekeeping for its further improvement and development of the beekeeping sector. Therefore, this study was carried out to collect the information regarding the indigenous knowledge and practices of farmers on beekeeping employed by Mao, including swarm catches, types of hives, sustainable honey harvesting, and natural pest management, aiming to highlight potential opportunities for growth that support sustainable rural livelihood.

METHODOLOGY

The study was conducted in six villages namely, Rabunamei, Kalinamei, Punanamei, Pudunamei, Song Song and chowainu of Mao region of Senapati District, located in northern Manipur, bordering Nagaland. The Mao tribe, part of Naga ethnic group, inhabits forested hilly terrains ideal for *Apis cerana*. Purposive sampling technique was applied for selecting study areas and random sampling technique was applied for choosing sample units. The photos were taken during a visit to a bee rearing areas in the Mao villages. Thirty household of the beekeepers were selected from these six villages for the study. All of them were interviewed to collect necessary data for the study. Data were collected through face-to-face interview method by using interview scheduled. This has given an opportunity to do in-depth interview with individuals and further lead to group discussion. The data supplied by the beekeepers were recorded later. Data were analysed with a view to achieve the objectives of the study.

FINDINGS AND DISCUSSIONS

Traditional Beekeeping does not require land ownership or rental; it can be started with equipment and tools that can be sourced locally and in many instances skills and knowledge required for such an enterprise are found within a tradition. Most of the Mao beekeeper learnt beekeeping from their parents, elders and neighborhood's. (Fig. No 2) shows Indigenous log hives are kept hanging from the top of the roof of house with the help of the rope. Management practices followed by the Mao traditional beekeepers do not include sugar feeding, seasonal management and migration during winter months making it convenient for Mao farmers to practice beekeeping with their traditional knowledge. They presume that the bees manage the winters of their own and believe that keeping two to three sealed honeycombs in the hive is sufficient for feeding during the dearth months or winter months. Mao is not making use of chemical pesticides, fertilizers and biocides and hence there is an enormous possibility of producing organic honey in the area.

INDIGENOUS METHODS OF COLONY CAPTURE

Swarm catches

The queen (bee): Swarm capture is a crucial part of traditional beekeeping. Beekeeper searched honeybee colonies from tree trunk in forest areas. Beekeepers adopt different methods of catch the swarms. Some of the beekeepers are well experienced. They let the swarms settle on the tree branches and then with bare hands identify the queen in a swarm. Then they gently shift the queen to transparent soft cloths and carry them to log hives. They workers follow the queen and hence they catch the swarms. There are cases that the bees flew away or died, therefore the bee keepers need to search for the queen from the jungle. Once they found the queen, they will be tying queen with thread in tree branches and they carry them to their home in thin breathable cloth and shift them to the hives. Sometimes they also captured swarming or absconding bee which temporary dwell openly on tree branches.

TYPES OF BEE HIVE

The traditional bee hives are kept at backyards or on tree branches as shown in (Fig. No. 1) or on the raised platforms of stones/outer courtyard or place them on a piece of raised ground (Fig. No. 3). Log hives are collected from fallen trees in forests. The size of log hives depends upon the tree trunk collected from the forest. The entrance hole is made in the middle of the front side of hives.

Some hives are closed from both ends with a piece of wood (Fig. No. 3 and Fig. No 4) which are plastered on the hollowed ends of tree trunk with a paste made by mixing cow dung and clay. The traditional beehives reflect the age-old traditional bee keeping knowledge of the Mao's besides the ancient techniques of honey collection practiced by them through the centuries.

Beekeepers have ranked construction materials according to their preference. They ranked log wood as best material because of its durability, water proof and capacity to attract bee colony.



Fig. No.1 Log Hive



Fig. No.2 Log Hive hanged from the top of the roof with the help of rope



Fig. No 3 Log Hives



Fig. No. 4 side of Log hive



Fig. No 5 Honey sealed combs in the hive

HONEY HARVESTING

Honey collection technique has been passed down from one generation to another. They have been following the age-old tradition even in the absence of written records and formal instruction.

Having knowledge of the correct time for honey harvesting is important in order to provide proper and timely extension service as well as technical support for beekeepers who share beekeeping equipment and accessories. The harvesting is done twice in a year i.e., June/July and again in the month of December and early January, where July and December are a peak harvesting month to obtain the largest quantity and quality of honey. Traditionally, men are responsible for honey harvesting which is mostly carried out at night because during the day the bee has a strong defensive behavior. Smoking is done by burning jute gunny bags to tame the bees and brush bees from honey combs using soft green grass. The combs are cut one by one with household use knife. The combs are squeezed and collected in big containers filtered through a thin cloth. The filtered honey is allowed to settle for one or two day and kept collected in bottles.

PROBLEMS OF BEEKEEPING AND ITS SOLUTION

Absconding was a major problem. It is usually observed at mid-day usually in September and October. It is believed that absconding is exacerbated and unfavorable situation e.g., invasion of predator. To retain bee colonies and avoid absconding; farmers frequently spray water when bees show sign of absconding. They also captured absconding honey bees by thronging fine soil or water in natural condition. Skilled farmers have reported that they arrest or killed newly born queen that initiate absconding of colony. Farmers use a queen retaining device locally constructed.

NATURAL PEST MANAGEMENT

The success or failure of bee keeping depends largely on the ability of the beekeeper to take suitable measures to control diseases and natural enemies of insects, birds and mammals affecting bees. Various indigenous bee predators' protection method exists in the Mao area. Shiihrai(spider), Shiikrii(lizard), pike(ant) are protected by cleaning the site and some bee keepers put ash around the hive instead of chemical treatments. Mao is also perceived that due to misuse of chemical pesticide, deforestation and many different factors, population of honeybee is declined than past in Mao says the beekeepers.

MEDICINAL VALUE OF HONEY IN MAO

Honey has been using as a medicine and nutritional food since immemorial time. Mao has a wealth of traditional knowledge of apitherapy. Honey is good for healing wounds, skin treatment. The medicinal value of honey is a common knowledge among farmers in Mao. It is used as medicine for the following diseases; pneumonia, eye disease, tuberculosis. Methods of using as medicine, however varies in the Mao depending on the types of diseases and user. Indigenous or Natural honey is always in demand round the year. It is also used in making certain health food preparations. With changing life style and increasing health consciousness, honey is been increasing consumes as health food. This is likely to drive the domestic demand in future.

Conclusion: -

The techniques of beekeeping have been handed on from generation to generation since immemorial time. Thus, neglecting their indigenous technology knowledge will not be a wise decision. The indigenous knowledge and practices could be significant basis for development of modern beekeeping in the area. It is a profitable enterprise. It has great scope for providing employment, livelihood as well as generating additional income for farmers with less time and minimum financial inputs. With the progress of technologies, beekeeping can be taken up as an industry for the economic development of the village and of the state. There is no negative impact of beekeeping on the environment. It is needed to take full advantage of traditional beekeeping to promote a sustainable economy, and improve the livelihood of local communities. Thus, a win-win situation can be achieved for culture, and economy. Hence, further studies related to beekeeping practices are needed for sustainable beekeeping development.

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