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Quantitative Analysis of the Medicinal Plant use Data by Four Indigenous Tribes- *Kattunaikkan, Mullakuruman, Adiyan* and *Kuruchiyar* - of Wayanad District, Kerala, Western Ghats

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Abstract—The present study was an attempt to record the quantitative data regarding medicinal plant use by four predominant tribes– Kattunaikkan, Mullakuruman, Adiyan and Kuruchiyar- of Wayanad District, Kerala, India. Mention of each use of a species with respect to a disease was treated as a separate event and considered as a user report. A total of 565 user reports were collected from the fifteen informants belonging to the four socio-cultural groups during the study period. User reports regarding 165 species from 63 different families were recorded. The data regarding the medicinal plant use were analysed with respect to habit, mode of administration and preparation styles among and across different tribes studied.
Keywords- - Ethnobotany-Wayanad- tribals- medicinal plant use –Western Ghats

I. INTRODUCTION

Modern people are alienated from environment so that we consider it as a place to visit or hike trough, while most indigenous tribes treat environment as a natural extension of themselves [1]. Alcorn [2,3] has discussed how the human relationships with plant resources, *i.e*., the human, cultural, and material uses of plants are largely shaped by history, and by physical and social environments. These relationships cover a very wide canvas, from wild foods, medicines, fibers, fodders, dyes, and body ornamentation, *etc.* to still more important, but less understood areas of the social and religious relationships, like beliefs, faith, taboos, worship and even protection and preservation. The richness of plant diversity in any area is not evaluated by the number of species occurring there, but by the intensity of associations and dependence of the indigenous communities on that plant wealth and, respect for this knowledge helps in conservation [4].Wayanad is a hilly district within Kerala state towards the southernmost end of India, with the highest percentage of tribal population recorded so far within the state. Documentation of data regarding edible plants [5, 6] used has been done in this area. Mere listing of medicinal plants used by some individual tribes has also been done [7, 8]. Wayanad, the green paradise, lies nestled among the misty mountains of Western Ghats at a height of 700-2100 m. above sea level on the northern part of the Kerala state. The name, *Wayanad*, is believed to have been derived from the word, *Vayal nadu*, meaning the land of paddy fields which comprises of about 2126 sq.kms. Evidences about New Stone Age civilization are obtained in plenty from the hills of Wayanad. The present study was an attempt to record the quantitative data regarding medicinal plant use by four predominant tribes– *Kattunaikkan, Mullakuruman, Adiyan* and *Kuruchiyar*- of Wayanad District, Kerala. When one considers the fast pace of modernisation and acculturation exposing these traditional communities to modern methods of medicine and lifestyles, this study is the urgent need of the hour.

II. MATERIAL AND METHODS

A. *Study Area*

Wayanad lies between North latitude 11^0 27' and 15^0 58' and East longitude 75^0 47 ' and 70^0 27'. It is bounded on the east by Nilgiris and Mysore districts of Tamil Nadu and Karnataka respectively, on the north by Coorg district of Karnataka, on the south by Malappuram districts and on the west by Kozhikode and Kannur districts of Kerala.

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Figure 1. Study area.

B. Data Collection

Study sites, knowledgeable informants identification, work plan, data collection procedures and literature survey was completed before starting field work. Fifteen informants, mainly healers and elders belonging to the four prominent socio-cultural communities – *Mullakuruman, Kuruchiyar, Kattunaikkan, and Adiyan* who were full time professionals in this field and widely accepted in their areas as well as other too, representing all regions were put to semi-structured interviews with pre arranged appointments lasting 2-3 hour duration followed by a transect walk to their natural environment from where they gathered plants. Follow up interviews were made at regular intervals covering all seasons from November 2008 to December 2014. The age of the informants varied from 36 years to 84 years. Except two, all of them were males. Informants were asked to spell out the remedies for the diseases and how they used them. The information regarding the use a particular species for a specific disease was treated as one user report. For each species, its local name, part used, method of use and conservation strategies were recorded. Prior informant consent was collected from all individuals regarding knowledge sharing. Some informants restrained from disclosing the method of using as they believed that it may loose its effect if made public. Live specimens for scientific identification were also collected during these walks.

C. Informants Profile

Among the data obtained from the pilot study, fifteen informants were selected for the quantitative ethnobotanical study from the four regions –South, North, West and East of Wayanad District respectively. They represented four prominent sociocultural communities – *Mulla Kuruman, Kurichiyar, Kattunaikkan, and Adiya*. As has already been mentioned, these communities are the most prevalent ones in the district and are entirely different in their social and economical status and have a long tradition and culture of their own. The tribe and region wise distribution of informants is given (Table 1).

Table 1. Tribe and region wise distribution of informants selected for the study

Tribe	South	North	West	East	No of informants
Kattunaikkan	+	+	-	-	2
Mulla Kuruman	++	+	-	++	5
Adiya	-	++	-		2
Kurichiyar	+	++	++	+	6

'+' represents each informant and '-' their absence.

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III. RESULTS AND DISCUSSION

An inventory of fifteen knowledgeable tribal healers and helpers to healers from four socio-cultural groups were made and five hundred and sixty five user reports regarding 165 species were recorded from them. The four tribes studied had their own myths, beliefs and taboos regarding the causes for diseases and have magico- religious ritual healing methods for getting rid of them. All the four socio-cultural groups studied, believed that diseases are caused by supernatural influences of their own ancestral spirits or traditional deities as a curse for their own misdeeds, or due to sorcery from enemies. They had their own magico-religious rituals for getting rid of them and their own traditional healer entrusted with the power to do it for them. Herbal formulations are only a part of these rituals and they commonly believe that the magical power entrusted with the traditional healer is the major reason for cure. Most of the herbal prescriptions are made fresh from plants collected from their own wild premises and they seldom use stored pre- prepared formulations. Plants are collected judiciously from the abundant areas only and thus, these groups practice a sustainable use of herbal resources. Rules from Government officials restricting free entry into wild have changed their life style patterns and have alienated them from their natural habitat. Most of the healers now have to take long walks into the woods for collecting medicines and this has forced them to collect and store plants at least temporarily, for a week's use. Knowledge transmission is highly conservative among and across communities. Most of the individuals share some amount of knowledge related to general uses of herbals, but they seldom prescribe themselves, and always depend on the traditional healer of their own community for prescriptions, as they believe that formulations are inactive without his magical powers. Most of the herbalists are very conservative to disclose their formulations to others as they strongly believe that on disclosure, the formulations lose their power to heal. All these factors and exposure of the new generation to modern medicine have contributed to the decline of this valuable knowledge in to oblivion and it is high time that, whatever left should be scientifically documented.

Pterospermum rubiginosum from the family Sterculiaceae recorded the highest number of user reports. *Thottea siliquosa* from Aristilochiaceae family, *Selaginella lepidophylla* from Selaginellaceae family, *Pittosporum neelgherrense* from Pittosporaceae family, *Musa acuminata* and *Musa paradisiaca* from Musaceae family, *Lepianthes umbellata* from Piperaceae family, *Hydrocotyle javanica* from Apiaceae family, *Entada rheedi* from Mimosaceae family, *Briedelia stipularis* and *Croton persimilis* from Euphorbiaceae family, *Coscinium fenestratum, Cyclea peltata* and *Diploclisia glaucescens* from Menispermaceae family, *Naringi crenulata* from Rutaceae family are some of the species which were quoted frequently.

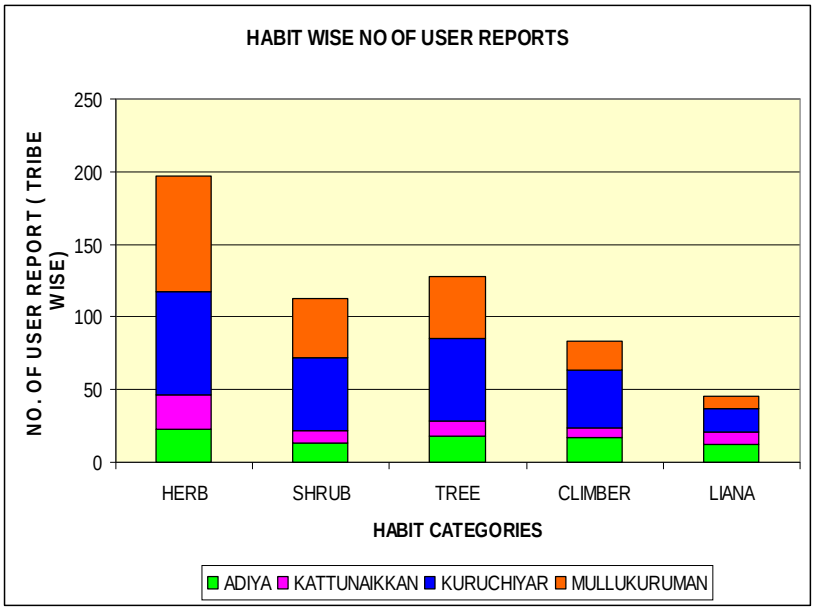


Figure 2. Distribution of user reports habit wise.

The user reports recorded were sorted with respect to the habit of plants (Figure 2). Five habit categories; herbs, shrubs, trees, climber and lianas were taken into account. Herbaceous species were quoted the most, with 196 user reports. Trees and shrubs recorded 128 and 113 each user reports respectively. The lianas were the least cited category in the list with 45 user reports. Among the different socio cultural groups, no bias was seen in quoting a particular habit category. The breakaway pattern within each category of habit was almost same. *Mulla kuruman* and *Kuruchiyar* informants dominated all categories, similar to the overall user reports quoting pattern.

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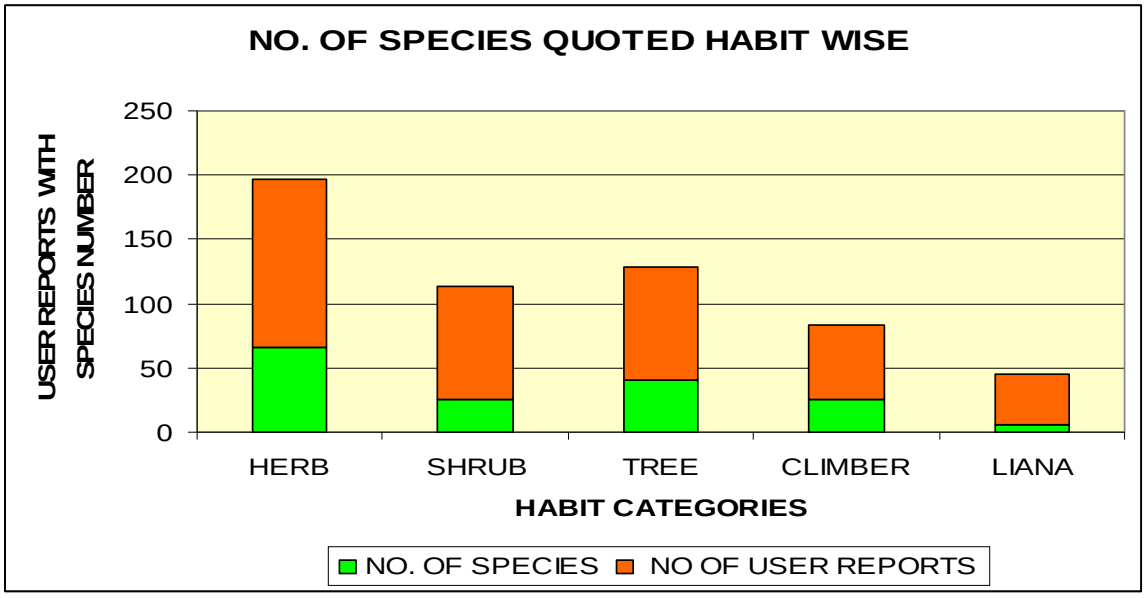


Figure 3. Habit wise distribution of number of species and user reports quoted.

Number of species quoted under each of these habit categories were calculated (Figure 3). Sixty six species were recorded in the herbs category and 26 species each for both shrubs and climber category respectively. There were 41 species in the tree category and 6 species in the liana category. Large number of tree species is used by the tribals since they may be available throughout the year. Liana species quoted were very few in number, but were seen to be referred frequently by these informants.

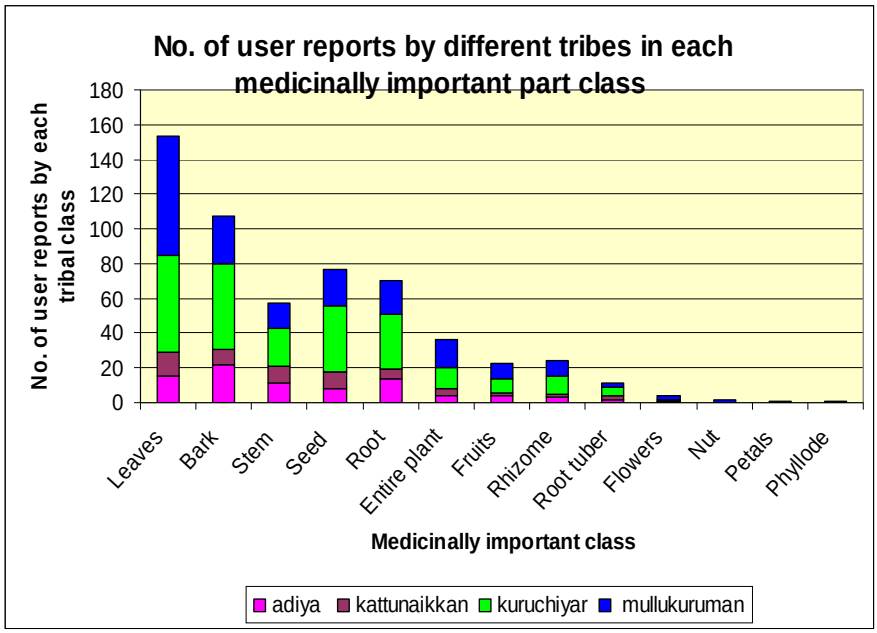


Figure 4. Medicinally important part wise distribution of user reports.

Leaves, bark, stem, seeds, root, fruits, rhizomes, flowers, nut, petals and phyllode were the different medicinally important plant parts quoted by the informants in their user reports. There was no bias among the different socio- cultural groups in using these parts. The most number of user reports were for the leaves category followed by bark, stem, seeds and roots. The number of user reports in each category is represented graphically (Figure 4).

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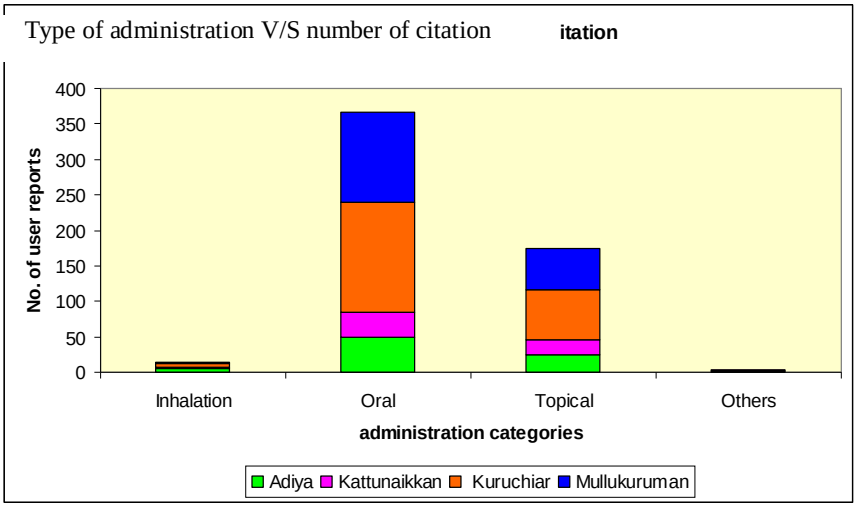


Figure 5. Type of administration wise distribution of user reports.

Three major drug administration routes were commonly used by these informants. The major route was oral when the drug is given in and topical when it is used externally. In some cases inhalation is also done. All the four socio-cultural groups use the above said methods without any bias. No of user reports in each category of administration, tribe wise is given (Figure 5).

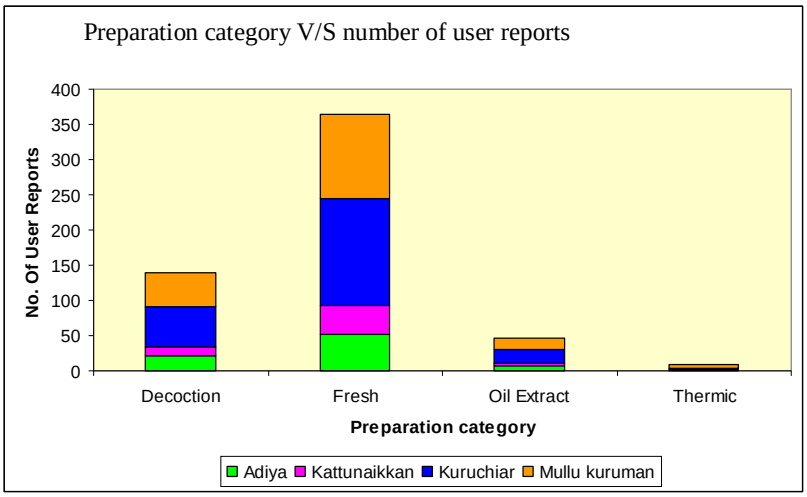


Figure 6. Number of user reports V/S type of preparation.

Four different types of preparations were seen within these socio-cultural groups. Most of the preparations were fresh as they go to the nearby forest at times of emergencies and never keep drugs in a prepared form. The other common preparation used was decoction, where the medicinally useful part is extracted with hot water. In very few cases the fermented form of decoction called *Kashayam* was also used. Topically applied preparations were either applied fresh or extracted with coconut oil or gingelly oil. In very few cases thermal process were used for preparation of medicines where the patient was allowed to take a hot water bath in the medicinal water prepared or the part used was fried in fire and applied directly. All the four socio-cultural groups showed no bias towards quoting these methods. Number of user reports in each category is graphically represented (Figure 6).

IV. CONCLUSION

Activity guided phytochemical fractionation can be done on these species as future work which may result in lead molecules for novel drug discovery. Preparation of a digital online inventory regarding the data collected can be made as future work. The data presented here was an attempt to document the fast eroding indigenous knowledge which has an evolutionary history of several generations through trial and error methods and has been traditionally transferred orally. In this age of modernaisation

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where these traditional communities are put in pressure to adapt modern systems of medicine it is high time to preserve them before it is lost forever.

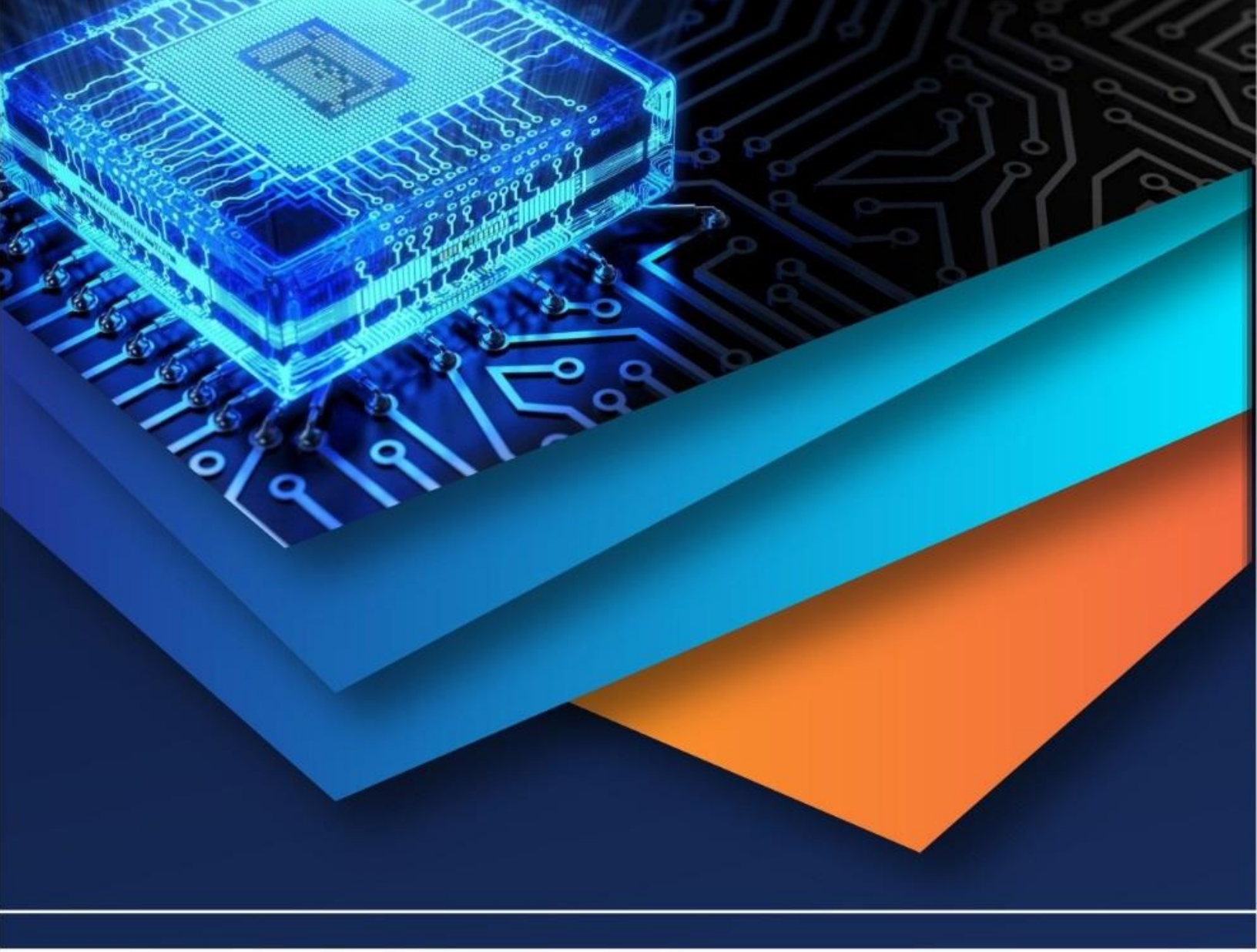
V. ACKNOWLEDGMENT

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REFERENCES

[1] K.J. Young, Ethnobotany. Chelsea house, New York, pp.1-112, 2007.
[2] J.B. Alcorn, Huaestec Mayan Ethnobotany. University Texas Press, Austin, 1984.
[3] J.B. Alcorn,. The scope and aims of Ethnobotany in a developing world, In: R.E. Schultes and V.S. Reis Eds., Ethnobotany: evolution of a discipline, Dioscorides, Portland, pp. 23-35, 1995.
[4] S.K Jain, Human aspects of plant diversity, Economic botany, vol 54(4), pp. 459-470, 2000.
[5] E.S Hema, M. Sivadasan, and Anil Kumar, N., Studies on edible species of Amaranthaceae and Araceae used by *Kuruma* and *Paniya* tribes in Wayanad district, Kerala, *Indian Ethnobotany*, vol 18(1), pp.122-126, 2006.
[6] C.S.G. García,. The mother – child nexus. Knowledge and valuation of wild food plants in Wayanad, Western Ghats, India. Journal of Ethnobiology and Ethnomedicine,vol 2(39), pp.1-6, 2006
[7] M.A. Joseph and V.T Antony,. The medicinally important Convolvulacean members used by *kattunaikkan* tribe of Wayanad district. Journal of Research in plant Sciences, vol 1 (2) pp. 93-97, 2012.
[8] V. Mini and M. Sivadasan, Plants used in ethno-veterinary medicine by *Kurichya* tribe of Wayanad district in Kerala, India, Ethnobotany, vol 19, pp. 16-21, 2007.

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