# ANALYSING THE SCIENTIFIC REASONING BEHIND THE PROVERB ON ILUPPAI FLOWER (MADHUCA SP.,) AND ITS ROLE IN SCIENCE AND DEVELOPMENT

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**ABSTRACT**:

Proverbs are considered as non-written documents that are deciphered from generation to generation over years verbally from our ancestors. These proverbs not only echo the social, cultural, political and economic values of folklore but also helpful for the development of science and research forever. In this regard, the commonly used proverb " Miyapy;yh CUf;F ,Yg;igg;G+ rh;f;fiu" (the flower of the olive tree, Bassia, are regarded as sugar in a place without a sugar cane mill) is taken for analysis to know more about the flower of iluppai in science and development of research . Even though each and every part of this tree has economic value, its yellow flower has some unique properties that have been attracted by many people from ancient period to the present day. This flower has been the major source of energy and sustenance for the life of many people in various parts of India.In the past, our ancestors made iluppai thottam ( garden) for the conservation of iluppai and worshipped as "sthalavirutcha" as this plant has more economical value. Hence, the present study is designed to explore the scientific truth behind the above- said proverb and a questionnaire was prepared and distributed among the student community to create awareness and this kind of activity would be helpful for the conservation of iluppai as this plant is native to India .

Key words: Proverb, Iluppai, Science and development

## Introduction

Scientists from all over the world are having a round table conference to find a new solution for a long-term problem against the energy crisis. The major cause for the gradual dwindling of energy resources is coupling the geometrical growth of population and industrial development. To meet out the energy crisis in the years to come, the alternative sources have to be found shortly for long-term problems. Proverbs are one such folklore non-written documents that are considered as a treasure for knowledge-based materials that would

have the answer for every problem. Wolfgang Mieder (1993) pointed out that proverbs are the wit of one and the wisdom of many. It means that ones' keen observation has been accepted by many as people use them in all situations and in all occasions. Hatch and Brown(1995) have pointed out that proverbs are the result of social, cultural and political and economic values of folklore who always transmit their ideas which are pragmatically efficient and informative. This kind of traditional manuscript will be helpful for the development of science and research very shortly and bring society towards the progress. Hence, the present study is aimed to explore the scientific facts behind the proverbs, related to the flower of iluppai (*Madhuca sp.*,) and its role in the development of science and research.

"*Madhuca sp.*, (*M.longifolia* -North India and *M. indica* in South India) is commonly known as "iluppai" in tamil literature and are commonly distributed in various parts of the India including Bihar, Madhya Pradesh, Orissa, Tamilnadu. In Tamilnadu, they are abundantly found in Anaimalai and Podhigai. A lot of literature(Wealth of India, 1954; Sutaria and Magar,1955 ) revealed the fact that the flower of this plant contains reducing as well as invert sugars. This kind of property would be helpful for the production of ethanol by the process of fermentation. A country liquor, mahuwa , the fermented alcoholic drink, an essential drink for tribal men and women during celebrations is obtained from iluppai flower ( Madhumita and Naik, 2010). A lot of literature (Hang *et al.*, 1982; and 1986; Roukas, 1994 and Kiren *et al.*, 1999) reported that the ethanol production could be obtained from the carbohydrate-rich materials such as apple, grapes, beetroot etc. Sujit Kumar *et al.*, (2009) have made an attempt for the production of bioethanol from the flowers of *Madhuca latifolia* by solid-state fermentation. Behera *et al.*, (2010) pointed out the flower of *M.latifolia* is a carbohydrate-rich flower that could be used as an alternative source of material for the production of bio-ethanol. Priyanka *et al.*, (2012) have recorded the flower is edible food item for tribals that are used to make a syrup for medicinal purposes (Gopalkrishnan *et al.*, 2012). The above said literature indicated the gradual increase of research in the field of science and development using advanced technology in the millennium years. Hence the present study is designed to analyse the importance and conservation of iluppai through the well-known proverb "Miyapy;yh CUf;F ,Yg;igg;G+ rh;f;fiu" and motivate the student community to preserve our old testimonials and needs of documentation.Besides , to create awareness on the social and economic importance of Madhuca in our daily life and give suggestions to utilize and improve the usage of this tree in our day to day life.

## MATERIALS AND METHODS

Primary data were collected by a structured questionnaire using convenience sampling. Fifty women were selected to find out the awareness on the proverb and the values of *Madhuca*. Data were collected from twenty five students of below the age group of twenty one and twenty five women of the age group of above forty from the public of Virudhunagar District. The collected data were represented by percentage. The morphology of *Madhuca* flower, economic uses of *Madhuca* and the awareness about the proverb were critically analyzed.

## RESULT

In the present study, the educational status and age wise distribution of the selected respondents were analyzed. Regarding the educational qualification of the respondents 50 per cent of them completed under graduation programme, 20 per cent of them completed high school, 10 per cent were professionals, and the rest 20 per cent belonged to other category. The respondents,80% were educationally qualified,among them, 50 % were in the age group of 18-22 and other 50 % were from the age group of 40-55 i.e., 50 per cent in which 10 per cent of the selected women were employed and the rest of them were house wives (40 %). Table 1 and 2 shows the feed back of respondents given as in percentage related with the morphology, economic uses and the awareness about the proverb of *Madhuca* flower.

Table - Analysis of the questionnaire regarding the proverb related to iluppai (*Madhuca sp*.)

| Q.No | **Critical analysis of the questionnaire represented in per centage** |
|---|---|
| 1. | Notable to see that, 92 per cent of the respondents were aware that iluppai is an economically important tree. Out of 92 per cent 50 per cent respondents were public and rest of the 42 percent from student community. 4 per cent of the respondents were aware that karuvelam is an economically important tree and rest of the 4 per cent they don't know which is economically important. |
| 2. | Only 14 per cent of the respondents were known that iluppai is an Indian butter tree. Out of 14 per cent 12 per cent respondents were public and rest of the 2 percent from student community. Nearly 86 per cent of the respondents were not aware that iluppai is an Indian butter tree. |
| 3. | Only 36 per cent of the respondents have seen iluppai tree. Out of 36 per cent 34 per cent respondents were public and rest of the 2 percent from student community. Nearly 64 per cent of the respondents were not seen iluppai tree in their premises. |
| 4. | 18 per cent of the respondents form the public have seen iluppai tree in around their village. Nearly 82 per cent of the respondents were not seen iluppai tree in nearby villages. Out of 82 per cent 50 per cent of the student respondents were not seen iluppai tree. |
| 5. | 36 per cent of the respondents have seen the flower of iluppai tree. Nearly 64 per cent of the |

| | |
|---|---|
| | respondents were not seen the flower of iluppai tree. Out of 64 per cent 42 per cent of the student respondents were from student community. |
| 6 | 22 per cent of the respondents were tasted the flower of iluppai tree. Nearly 78 per cent of the respondents were not tasted the flower of iluppai tree. Out of 78 per cent 48 per cent of the student respondents were not tasted the flower of iluppai tree. |
| 7. | 20 per cent respondents were answered the taste was sweet and rest of the 2 per cent were said it was sour in taste |
| 8. | 82 per cent of the respondents were aware that iluppai belongs to Sapotaceae family.10 per cent of the respondents were aware that iluppai belongs to Solanaceae family. Rest of the 8 per cent not answered |
| 9. | 56 per cent of the respondents were aware that iluppai tree is a sthala virutcham. 44 per cent of the respondents were not aware that iluppai tree is a sthala virutcham. Out of 44 per cent 38 per cent were student respondents. |
| 10. | 82 per cent of the respondents were aware that all parts of the iluppai tree are very useful whereas other parts of the such as flower, seed and trunk were reported by 6% , 4% and 2% respectively. . Nearly 6 percent they do not know about the importance of iluppai tree as useful one. |
| 11. | Iluppai tree is used for lightening of lamp (24per cent), as food (4per cent), as medicine (14per cent) and for all (58per cent) |
| 12. | 86 per cent of the respondents were aware that iluppai is propagated through seeds. 6 per cent of the respondents were aware that it was propagated by vegetative method of cuttings. 8 per cent of the respondents were not aware about that. |
| 13. | 72 per cent of the respondents were aware that our ancestors used iluppai for their livelihood but 28 per cent of the respondents were not aware of that. |
| 14. | 80 per cent of the respondents were answered that iluppai thotttam (garden) is essential for the villagers for their livelihood. 20 per cent of the respondents were answered it is not essential. |
| 15 | 76 per cent of the respondents, were aware the proverb related to iluppai. 24 per cent of the respondents were not aware about the proverb on iluppai tree. |
| 16 | 58 per cent gave the explanation for the proverb. The flower can be used as a sweetener when cane sugar is not unavailable. |

Table - 2 Analysis of the morphology, economic uses and the awareness about the proverb related to iluppai.

| Q.No | Public respondents (%) | | | | Student respondents (%) | | | | | Total respondents % | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Option numbers | | | | Option numbers | | | | | Option numbers | | | | |
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| 1 | 50 | 0 | | | 42 | 4 | 4 (NO) | | | 92 | 4 | 4 | | |
| 2 | 12 | 38 | | | 2 | 48 | | | | 14 | 86 | | | |
| 3 | 34 | 16 | | | 2 | 48 | | | | 36 | 64 | | | |
| 4 | 18 | 32 | | | 0 | 50 | | | | 18 | 82 | | | |
| 5 | 28 | 22 | | | 8 | 42 | | | | 36 | 64 | | | |
| 6 | 20 | 30 | | | 2 | 48 | | | | 22 | 78 | | | |
| 7 | 18 | - | 2 | 30 | 2 | - | - | 48 | | 20 | - | 2 | 78 | |
| 8 | 46 | 4 | | | 36 | 6 | 8 (NO) | | | 82 | 10 | 8 | | |
| 9 | 18 | 32 | | | 38 | 12 | | | | 56 | 44 | | | |
| 10 | 4 | 2 | - | 44 | 2 | 2 | 2 | 38 | 6 (NO) | 6 | 4 | 2 | 82 | 6 |
| 11 | 24 | 2 | 4 | 20 | 0 | 2 | 10 | 38 | | 24 | 4 | 14 | 58 | |
| 12 | 0 | 50 | | | 6 | 36 | 8 (NO) | | | 6 | 86 | 8 | | |
| 13 | 44 | 6 | | | 28 | 22 | | | | 72 | 28 | | | |
| 14 | 40 | 10 | | | 40 | 10 | | | | 80 | 20 | | | |
| 15 | 44 | 6 | | | 32 | 18 | | | | 76 | 24 | | | |
| 16 | 30 | 20 | | | 28 | 22 | | | | 58 | 42 | | | |

## DISCUSSION

*Madhuca longifolia* is the botanical name of Butter tree which belongs to the family Sapotaceae, considered a boon to the tribal's who are forest dwellers because of each and every part of the tree including flower, leaves, trunk and seed have nutritional as well as medicinal values. The present study showed that 24%, 4%,14% and 58% of the respondents were aware of the economic importance of ilupapai and is used for lightening of lamp , food , medicine and for all other purposes respectively. Patel *et al.*, *(*2011) have reported that it is one of those multipurpose forest tree species that provide food, fodder and fuel and ensuing the self - sufficiency of the people inhabited in those areas. The flowers are used as traditionally as the cooling agent, tonic, aphrodisiac, astringent, demulcent and for the treatment of helminths, acute and chronic tonsillitis, pharyngitis as well as bronchitis. Our ancestors have utilized this flower as an energy source as corolla of this flower enriched with sugars. The early blooming and matured flowers are used as immediate energy sources because of fructose and glucose are predominantly found in this flower respectively. Interestingly to note that 40-70% of sugar is found in iluppai flower which yields 5-7% of

energy. Behera *et al.*, (2010) reported that the flower of M. *latifolia could be used as an* alternative cheaper carbohydrate source.

The present survey revealed that 80 % of the respondents were answered that iluppai thotttam (garden) is essential for the villagers for their livelihood. This perception can be corroborated with the activities of our ancestors related to preservation and conservation of iluppai thottam (garden) during that period.. Our ancestors have made iluppai thottam( garden) in their settled areas and worshipped as God by means of conservation. It could be compared with the names of some villages in Tamilnadu prefixed or suffixed with " iluppai". For example, Then**iluppai and** Kang**iluppai** (Thiruvannamalai district) , **Iluppai**korai (Thanjavur distric), Kuth**iluppai**(Dindigul District), **iluppai**yur, Salai **iluppai**kkulam, M.**Iluppai**kulam (Virudhunagar District), **iluppai**kudi(Ramanathapuram District, **iluppai**yoorani (Tuticorin District). It could be conferred that the illuppai tree might have been abundantly found in those areas and were helpful for the sustenance of folklore during that time. In order to honour the iluppai as an important tree,, our ancestor might have blended the word " iluppai" with the name of the village.

In the past, our ancestors have led their life blended with the nature to know the forecast, to seed the plant, to cure the diseases etc., and made their long-term views and flourished mushroom ideas in the form of "proverb" – a non-written document. These proverbs are used as traditional currency forever as they hold some beliefs, morals, love, customs, habit, ideas and facts. In the present study, the analysed proverb "Miyapy;yh CUf;F ,Yg;igg;G+ rh;f;fiu"was well known by 100 % respondents but 48% respondents enunciate this proverb as "Ms; ,py;yh CUf;F ,Yg;ig rf;fiu". indicates the metamorphosed state of the proverb, in turn, would make the proverb a worthless/meaningless if it is used in prolonged time. So documentation of proverbs is essential to preserve our ancient traditional knowledge which is pragmatically efficient and informative and are inherited as traditional documents.

Regarding the scientific facts related to proverb on " iluppai", 58% of the respondents gave the explanation that flower of iluppai can be used as a sweetener when cane sugar is not unavailable; Whereas, they didn't know the production of bio-ethanol from carbohydrate enriched plant sources. For centuries, iluppai (Madhuca sp.) has been used for liquor production as the dried flowers are fermented that contains alcohol like substance. The following verse, "**jpd;whw; gapj;jpaKQ;** NrUqfhz; kd;wYWj;" substantiate the presence of some components, like alcohol, that might have made the people insensible. The available literature(Bhagmol and Joshi,2002 and Swain et al., 2007) highlighted the carbohydrate - rich material such as sugarcane/ starchy crops can be used as an alternative source for bioethanol(alcohol) production. Seeing that the flower of iluppai is enriched with sugar,

there is a possibility to produce more ethanol to meet out the energy crisis existing in current scenario worldwide.

The coupling factors such as industrialization, mechanization, transportation and urbanization that paves the way for gradual depletion of existing energy resources. It is the need of the hour to explore the alternative energy resources to meet out the escalating demands for the ever growing population. By now, the developing countries such as Brazil, US, Australia, Philippines use ethanol as an energy resource and is obtained from sugarcane, corn, wheat, and sorghum by fermentation as these renewable resources are bountiful with sugar. Ethanol can be used as a substitute for diesel and petrol(gasoline) and the pure form of ethanol is used as a fuel to run the vehicles. Besides, ethanol is used to produce heat and electricity that could be able to utilize in housing and services, industry and transport. To avoid financial hike during transport,the United States of Nation use the petroleum blended with ethanol. To conclude that the proverb "Miyapy;yh CUf;F ,Yg;igg;G+ rh;f;fiu" has surreptitiously scientific facts that pave the way for onservation strategy that promote the socio-economic status of our nation.

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