

LEMONGRASS OIL - A MAJOR SOURCE OF INCOME FOR THE TRIBALS OF WAYANAD DISTRICT KERALA**Sangeeth Thekkan and S. Paulsamy***

Department of Botany, Kongunadu Arts and Science College, Coimbatore-641 029

*E.mail: paulsami@yahoo.com

ABSTRACT

Paniyas, Adiyas, Kattunaikan, Kuruman, Karimbalan and Kurchiyas are the native tribal communities and inhabiting the Wayanad district of Kerala. Most of the tribals have engaged in the collecting of minor forest produce and lemongrass cultivation. They have also involved as agriculture labours and casual labours for forest dept etc to meet their demand for basic livelihood. Cultivation of lemongrass for oil distillation is considered to be one of the major sources of income for them. The oil yield was determined on basis of grass biomass distilled and the quantity of oil extracted. Among the study areas, Pulpally registered higher annual biomass production of lemongrass (8380 kg/acre) followed by Ambalavayal (7800 kg/acre), Meppadi (7540 kg/acre) and Mananathavady (6440 kg/acre). Lemongrass cultivation and extraction of lemongrass oil from the host provide better job oppurtunities and fairly good economic return in Wayanad district.

Keywords: Lemongrass oil, Biomass, Tribals, Livelihood, Wayanad.

1. INTRODUCTION

Wayanad is rich in biodiversity with high percentage of endemism in southern Western Ghats. The district has high percentage of tribal communities in Kerala. The native tribal communities viz; Paniyas, Adiyas, Kattunaikan, Kuruman, Karimbalan and Kurchiyas are living in biodiversity rich areas of Wayanad district. Most of the tribal people involved in the collection of minor forest produce and casual labours for forest department, agriculture, Reeds and Bamboo processing and lemongrass cultivation are some other major activities for their livelihood. Lemongrass cultivation is generally considered to be a major source of income for tribal people apart from other sources. Encouragement for lemongrass cultivation in fragile ecosystems and rocky slopes may improve the economic status of tribals in Wayanad, besides providing ecological security. Lemongrass oil is known in trade for 200 years; however systematic cultivation and distillation of lemongrass oil commenced only in 1882 in Kerala. Lemongrass oil is of high commercial value and it is a major source of income for a number of cultivators. Though it is important, very little information is available about the nature of the crop and its cultivation practices, socio-economic status of the cultivators, economics of the cultivation and the problems of the cultivators. As tribals are the major cultivators of the crop it is important to examine the status of lemongrass cultivation in tribal economy in the region. As there is no systematic attempt has so

far been made to examine the above aspects (Jayapradeepu, 2003) this study focused attention on them

2. MATERIALS AND METHODS*2.1. Study area*

Wayanad district is located in the northern part of Kerala state. It lies between the lattitudes 11°27' and 12°58' N and the longitude between 74°52' and 76° 07' E. This district is most popular for agriculture and vegetation of high biodiversity in Kerala. The south west monsoon (June – September) brings copious rainfall in this region. The average rainfall in different places of Wayanad ranges between 1000mm and 4000mm per year. The altitude of hill ranges of Wayanad is ranging from 700 msl to 2100 msl. The major native tribal communities of Wayanad are Paniyas, Adiyas, Kattunaikan, Kuruman, Karimbalan and Kurchiyas.

2.2. Methods

A case study has been conducted among the tribals Paniyas, Adiyas, Kattunaikan, Kuruman, Karimbalan and Kurchiyas who settled in different areas of Wayanad districts. These tribals are cultivating lemongrass for oil distillation, which is considered to be one of the major sources of income. Details of the tribal communities like places of their shelter, population, employment opportunities etc were collected from the forest department. The harvested lemongrass biomass was pooled together over a period of one year to arrive the annual

production (Singh and Yadhava, 1974). The harvesting interval is approximately 60 days. The data oil yield was collected from tribals on basis of grass biomass distilled and the quantity of oil extracted.

3. RESULTS AND DISCUSSION

Besides having high endemism and rich biodiversity, Wayanad is having high population of tribals namely, Paniyas, Adiyas, Kattunaikan, Kuruman, Karimbalan and Kurchiyas (Table 1). Due to the high population of tribals and to meet the demand for basic livelihood they were engaged in

activities like collection of minor forest produce, casual labours in forest department, lemongrass cultivation etc. Forest is a source of many valuable minor forest produces like different parts of plants and animals for medicinal use, tanning compounds and waxes, extractives such as bark, dyes, fibres, gums, latexes, oils, resins and food like bush meat, flowers, fruits, honey, nuts, leaves, seeds and spices and other products like fuel-wood and bamboo (Shylajan and Mythili 2003). The production of lemongrass biomass is widely varied between the months and also across the places of its cultivation (Table 2 and Fig 1).

Table 1. Habitation, Population and income sources of various tribal communities in Wayanad.

S.No.	Tribe	Places of settlement	Population	Income source
1.	Paniya	Pulpally Mullankolly	69116	Majority are casual labours. Agriculture labours Collection of minor forest product
2.	Adiyan	Thirunelly Thrisselery Vermam	11191	Agriculture labours Collection of minor forest product Cultivators
3.	Kattunaikan	Pookode Muppainadu Muttill Manjoora	17051	Collection of minor forest product Landless agriculture labours Lemongrass cultivation forest labour Small scale cultivation
4.	Kuruman	Cheeral Irulam Kuppadi Noolpuzha Kotathara	20983	Agriculture labours Collection of minor forest products Marginal farmers Lemongrass cultivators
5.	Karimbalan	Edavaka Kaniambetta Mullenkolly Pozhuthana	145	Collection of minor forest produce Shifting cultivation Agriculture labours Lemongrass cultivation
6.	Kuruchiya	Mananthavady Meenangadi Nenmeni Poothadi	25266	Agriculturalist Co-operative farming

Table 2. Annual biomass production and area of lemon grass community, oil content and production and revenue generated in the study sites.

Sites*	Annual production of lemon grass (kg/ha)	Area of lemon grass community (ha)	*Oil content (%)	Oil production (kg/ha/yr)	**Annual revenue (Rs/total area of grass community)
I	6440	2	0.40	25.76	25760
II	8380	3	0.45	37.71	56565
III	7540	2.5	0.42	31.66	39575
IV	7800	3	0.44	34.32	51480

*Site I-Mananthavady, Site II - Pulpally, Site III - Meppadi, Site IV – Ambalavayal.

Generally, the production of grass is peak during rainy season (June- Sept) and falls down to low level during dry months (Mar - April) in all cultivated areas. According to Tothill (1985) the decomposition of dead biomass during the dry season leads to produce higher ammonia since it is too dry for nitrification to occur and at the beginning of wet season ammonia gives way quickly to nitrate which is readily observed by growing vegetation. Among the study areas, Pulpally registered higher annual biomass production of lemongrass (8380 kg/acre) followed by Ambalavayal (7800 kg/acre), Meppadi (7540 kg/acre) and Mananathavady (6440 kg/acre). The percent availability of lemongrass oil extracted from the grass, *Cymbopogon citratus* varied according to climatic and soil conditions of the habitat (Paulsamy 2004, Peter 2012).

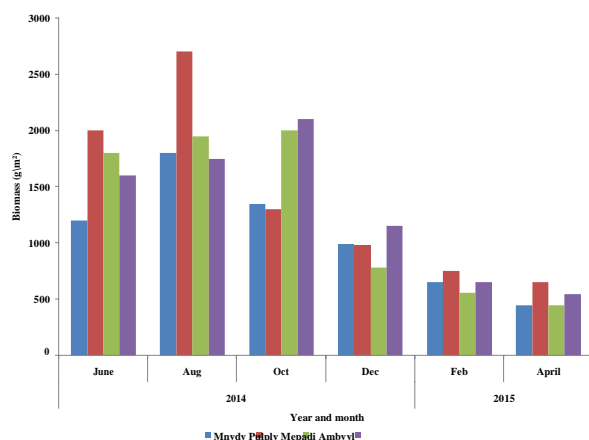


Fig. 1. Above ground biomass of lemongrass in the study sites of Wayanad, Western Ghats, Kerala during the sampling months.

Mnvdy – Manathavady, Pulply – Pulpally, Mepadi – Mepadi, Ambvyl - Ambalavayal

The area of cultivation of lemongrass in the studied site ranged between (2 to 3 hectares Table 2). The yield of lemongrass oil was also varied considerably between the places of cultivation (Table 2). The grass cultivated in Pulpally region yields high rate of 37.71 kg/ha/yr oil production. The lower rate of oil production is found in Mananathavady 25.71 kg/ha/yr oil production. Paulsamy *et al.*, 2000 reported that the relative humidity of air and contents of phosphorus and potassium in the grass are the major factors influencing the lemongrass oil yield in Anaimalais. The annual production of lemongrass oil is higher for

Pulpally and it is followed by Ambalavayal, Meppadi and Mananathavady (Table 2).

The economic relation through lemongrass oil is greater in Pulpally (Rs 56565/-) followed by Ambalavayal (Rs 51480/-), Meppadi (Rs 39575/-) and Mananathavady (Rs 25760/-) (Table 2). It is concluded that the lemongrass cultivation and extraction of lemongrass oil from the host provide better job opportunities and fairly good economic returns to meet the basic demands for tribal communities in Wayanad. Cultivation by following modern farm practices is supported to get still more revenue for tribal communities.

REFERENCES

- Jayapradeepu, P.S., (2003). *Economics of lemongrass cultivation in Kerala*, Thesis, Department of Economics, Dr. John Matthai Centre Thrissur, University of Calicut.
- Paulsamy, S., (2004). Lemon grass oil and tribal welfare in Anaimalai hills, Western Ghats. *SAJOSPS* 111-113.
- Paulsamy, S., T.N. Rangarajan, K. Arumugasamy, S. Manian, K. Udaiyan, R. Sivakumar and D. Senthilkumar, (2000). Effect of habitat variation on the structure, herbage production and oil yield of *Cymbopogon flexuosus* Stapf. dominated grassland in Anaimalais, the Western Ghats. *J. Environ. Bio.* **12**(2):85-94.
- Peter, K.V., (2012). *Handbook of Herbs and Spices*. 1st Ed. Wood herb publishing (Elsevier) store, Cambridge. p. 640.
- Shylajan, C.S. and G. Mythili, (2003). Community Dependence on Protected Forest Areas: A Study on Valuation of Non-Wood Forest Products in a Region of India. *Sri Lankan Journal of Agricultural Economics*. **5** (1).
- Singh, J.S. and P.S. Yadhava, (1974). Seasonal variation in composition, plant biomass and net primary productivity of tropical grassland at Kurukshetra, India. *Ecol. Monogr.* **44**:351-375.
- Tothill, J.C., (1985). 1985. American Savanna Ecosystems. In J.C.Hill and J.C Mitt (eds). *Ecology and Management of the World Savanna*. pp 52-55 Australian Academy of Science Canberra, Australia.