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Detox potential of medicinal plants used by traditional healers in rural areas of Madurai district, Tamil Nadu, India

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Abstract

The present study was carried out to investigate Medicinal plants of Rural areas used as Detoxification in Madurai district, Tamil Nadu, India. It has been shown that 24 Medicinal herbs belonging to 18 families are used as Detoxification capacity. The increasing demand for medicinal plant products has renewed interest in the pharmaceutical industry in the production of herbal health care formulations, herbal- based cosmetic products, and herbal nutritional supplements.

Keywords: medicinal plants, detoxification, Madurai district

1. Introduction

The earliest historical records of herbs are found from the Sumerian civilization where hundreds of medicinal plants including opium are listed on clay tablets. The Ebers Papyrus from ancient Egypt, c. 1550 BC, describes over 850 plant medicines. The Greek physician Dioscorides, who worked in Roman army, documented over 1000 recipes for medicines using over 600 medicinal plants in De material medica, c. 60AD; this formed the basis of pharmacopieias for some 1500 years. Drug research makes use of ethnobotany to search for pharmacologically active substances in nature, and has in this way discovered hundreds of useful compounds. These include the common drugs aspirin, digoxin, quinine, and opium. The compounds found in plants are of many kinds, but most are in four major biochemical classes: alkaloids, glycosides, polyphenols, and terpenes. Detoxification is the physiological or medicinal removal of toxic substances from a living organism, including the human body, which is mainly carried out by the liver. Additionally, it can refer to the period of withdrawal during which an organism returns to homeostasis after long-term use of an addictive substance. In medicine, detoxification can be achieved by decontamination of poison ingestion and the use of antidotes as well as techniques such as dialysis and (in a limited number of cases) Chelation therapy. In the present study shows that potential of Medicinal herb used as detoxification of human body. The formulations and Mode of preparation has been followed by traditional healers of rural areas of Madurai district, Tamil Nadu.

2. Experimental Methods

2.1 details of the study sites

Madurai is located at 9.93°N 78.12°E. It has an average elevation of 101 metres. The city of Madurai lies on the flat and fertile plain of the river Vaigai, which runs in the northwest-southeast direction through the city, dividing it into two almost equal halves. The Sirumalai and Nagamalai hills lie to the north and west of Madurai. Madurai lies southeast of the Western Ghats, and the surrounding region occupies the plains of South India and contains several mountain spurs. The soil type in central Madurai is predominantly clay loam, while red loam and black cotton types are widely prevalent in the outer fringes of the city.

2.2 Interview with informants

An extensive Survey was carried out in Madurai from January 2016-April 2016. The number of informants interviewed 18 (11Male, 7Female). The information of this study was collected through questionnaire method from the villagers, elderly persons, traditional healers who are residing areas of the study to collect data on medicinal plants commonly used by them. This include different common human ailments, their occurrence, symptoms,

regular mode of treatment including herbal ones, plants and plant parts used for the treatment.

2.4 Botanical identification of plants

All the medicinal plants recorded during the field visits were botanically identified by referring Flora of Tamil Nadu Carnatic ^[5] and An Excursion Flora of Central Tamil Nadu, India ^[6].

3. Results and Discussion

The Details of collected plants are enumerated with their scientific name, family, local name, parts used, Diseases Cured were presented in Table 1. Number of Informants in selected areas their age, education and occupation in Table 1.

Table 1: Number of Informants in selected areas their age, education and occupation

S. No	Binomial name	Family	Local name (Tamil)	Parts used	Mode of preparation
1.	<i>Achyranthes aspera L.</i>	Amaranthaceae	Nayuruvi	Leaf extract	Extraction of leaves used for detoxification of liver product.
2.	<i>Acorus calamus L.</i>	Araceae	Vasambu	Root	Removes the toxin formation in digestive system
3.	<i>Aegle marmelos L.</i>	Rutaceae	Vilvam	Leaf extract	Extraction of leaves used to protect liver and detoxifying the waste product.
4.	<i>Allium cepa L.</i>	Liliaceae	Vengayam	Dried bulb	Bulb has been widely used to remove Microbial toxins.
5.	<i>Allium sativum L.</i>	Liliaceae	Poondu	Dried bulb	Bulb act as blood purifier and flush out toxins
6.	<i>Anacardium occidentale L.</i>	Anacardiaceae	Mundiri	Leaves and Stem bark	Leaf and bark extract used to remove toxins in liver
7.	<i>Azadirachta indica A. Juss.</i>	Meliaceae	Vembu	Leaves	Leaf extract detoxify waste product in liver and blood.
8.	<i>Bacopa monnieri (L.) Pennell.</i>	Scropulariaceae	Brahmi	Leaves	Leaf extract used as Hepatoprotective
9.	<i>Curcuma longa L.</i>	Zingiberaceae	Manjal	Rhizome	Rhizome powder used as Anti bacterial ,Anti fungal and reduce toxins
10.	<i>Zingiber officinale L.</i>	Zingiberaceae	Inji	Rhizome	Rhizome extract is very much essential for alcohol toxicity.
11.	<i>Capsicum annum L.</i>	Solanaceae	Milagai	Fruit	Raw fruit is used for Reducing Kidney stone
12.	<i>Cyanodon dactylon L.</i>	Poaceae	Arugam pillu	Whole plant	Whole plant extract is used to remove body waste and improve body metabolism
13.	<i>Carica papaya L.</i>	Caricaceae	Pappali	Seed	Papaya seed detoxifies liver, Kidney and digestive system
14.	<i>Cissusquadrangularis L.</i>	Vitaceae	pirandai	Stem	Stem extract used to detoxify liver
15.	<i>Citrus limon (L.) Burm.f.</i>	Rutaceae	Elummichai	Fruit	Lemon juice is used for Dehydration and Reducing kidney stone
16.	<i>Cocos nucifera L.</i>	Arecaceae	Thennai	Fruit	Coconut water has anti bacterial and anti fungal and remove toxin in the body.
17.	<i>Coriandrum sativum L.</i>	Apiaceae	Kothumalli	Leaf extract	Leaf juice is used to treat poison and toxic product in blood
18.	<i>Citrus sinensis (L.) osbeck.</i>	Cucurbitaceae	Orange	Fruit	Fruit juice is cleansing and removal body waste
19.	<i>Tamarindus indica L.</i>	Fabaceae	Puliambalam	Pulp	Raw pulp is used to remove poisonous substances and cleansing blood.
20.	<i>Eclipta prostrata (L.)</i>	Asteraceae	Karisilankanni	Leaves	Leaf extract is used Hepatoprotective
21.	<i>Phyllanthus niruri L.</i>	Euphorbiaceae	Keelanelli	Leaves	Leaf extract used as powerful medicine for liver disorder and remove the toxic product
22.	<i>Piper nigrum L.</i>	Piperaceae	Milagu	Seed	Seeds are used to remove toxic waste in liver
23.	<i>Phyllanthus emblica L.</i>	Phyllanthaceae	Nelli	Fruit	Fruit extract used to treat toxin and cleansing blood
24.	<i>Murraya koenigii (L.) Spreng</i>	Rutaceae	Karuveppilai	leaves	Leaf extract used to remove toxic waste from the body and improves body metabolism

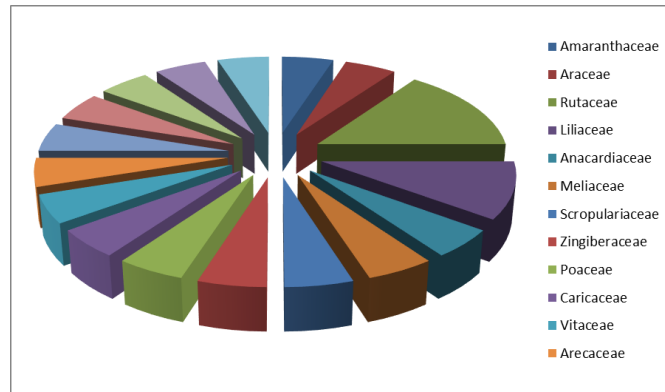


Fig 1: Families of Medicinal plants in Detoxification

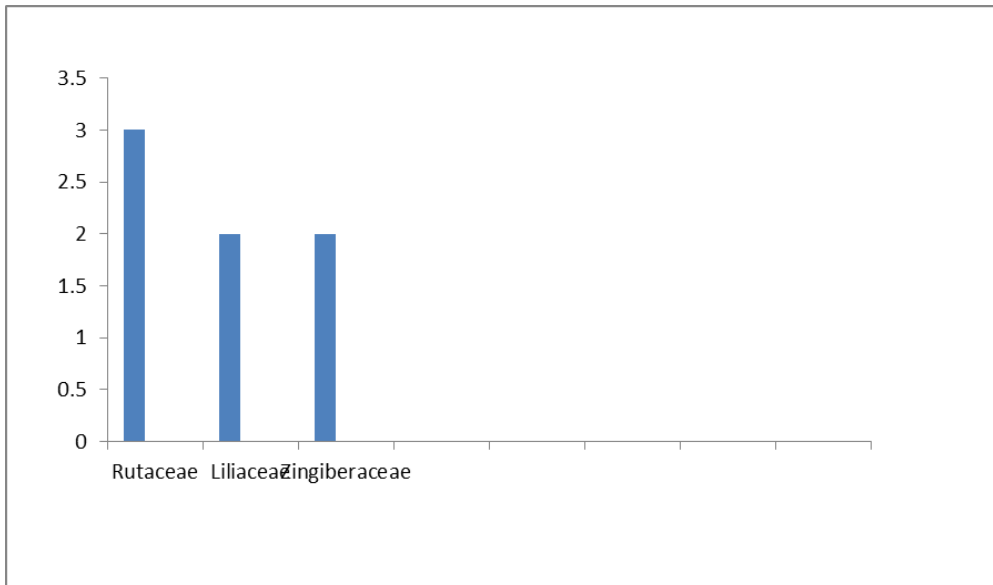


Fig 2: Dominant families of Medicinal plants in Detoxification

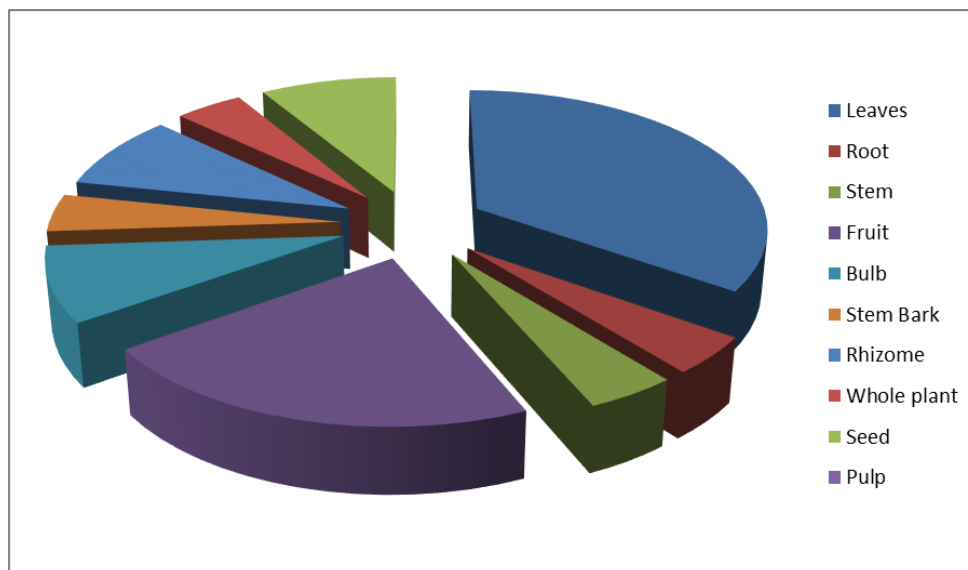


Fig 3: Parts used of Medicinal plants used in Detoxification

The present investigation revealed that total of 24 medicinal plants belonging to 18 families have been recorded. Among all the species Rutaceae, Liliaceae and Zingiberaceae were dominant than other species. Different plant parts such as Root, Leaves, Seeds, Fruit, Wood bark, and Flowers were used for herbal preparation. The herbal preparation in the

form of Decoction, Powder, Extract, Juice. Treatment with medicinal plants is considered very safe as there is no or minimal side effects. These remedies are in sync with nature, which is the biggest advantage. The golden fact is that, use of herbal treatments is independent of any age groups and sexes. Aegle marmelos and its phytochemicals

in the treatment and prevention of cancer (Manjeshwar srinath Baliga *et al.* 2012). Hepatoprotective activity of *Tamarindus indica* (Jesus Rafael Rodriguez amado 2016). Hepatoprotective effect of *Murraya koenigii* (D.Ghosh *et al* 2013). Hepatoprotective effect of *Citrus limon* (S.K. Jaiswal *et al* 2015).

Conclusion

The findings of the present investigation mainly focused on Detoxification of medicinal plants which closely associated with Rural, Tribal community, and also Traditional healers. Major detoxification of various drugs and chemicals occurs in the liver, and the intermediate metabolites get accumulated in the liver cells which may be responsible for oxidative stress in to hepatocytes. Utilization of plant based medicine along with conventional drug surely put more values to promote health or cure diseases in the better way.

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