STUDIES ON TRADITIONAL KNOWLEDGE OF MEDICINAL PLANT USED TO CURE RESPIRATORY DISORDERS IN TALIPARAMBA, KANNUR DISTRICT, KERALA

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Abstract: Asthma is one of the deadly diseases from which millions of people die every year throughout the world. It claims a fair share of casualties in India too. Asthma is a disease which affects the airways that carry air to and from lungs. People who suffered from this chronic condition (long lasting requirement) are said to be asthmatic. Asthma symptoms are not the same for everyone. The most common symptoms of asthma include wheezing, coughing, chest tightness and shortness of breath. There are many reasons why patients choose herbal treatments such as the perception that synthetic drugs are expensive, over- prescribed and can be dangerous. Moreover, medicinal plants are usually seen by lay people as "natural" and thus considered safe. The fact that asthma is a chronic disease and therefore requires longer treatment may also be a predictor for those affected to seek alternative therapies, such as the use of medicinal plants. The plants which are used for the treatment of the respiratory disorders are as follows *Boerrhavia diffusa*.L., *Caesalpinia crista* Linn., *Calotropis procera* R.Br., *Acacia nilotica* (L.)Del.,*Cassia tora* L., *Abrus precatorius* L., *Cassia occidentalis* L.,*Celosia argentea* L., *Acalypha indica* L., *Adhatoda vasica* Nees.etc. The use of the above plants against the disease, and the mode of preparation and administration of the drug are discussed in detail in this paper.

Keywords: Asthma, Respiratory Disorders, Administration.

Introduction: History of herbal remedies is very old. Since old times before modern medicine, people became ill and suffered from various ailments. In absence of modern medicinal remedies, people on herbal remedies derived from herbs and spices. The Indian subcontinent is enriched with variety of plant species including medicinal plants or its parts as a curing ailments for various diseases. India was one of the pioneers in the development and practice of well documented indigenous system of medicine, particularly Ayurvea, Siddha, and Unani. Many of the drugs found today have been derived from plant sources. So the objective of present study is to collect information of native plants in and around Taliparamba Municipality, Kannur for the documenting knowledge of medicinal usage.

Materials and Methods: ***Study Area:*** The present study was conducted in several areas of Taliparamba Municipality. Geographically the entire area of Taliparamba municipality lies between latitudes of12°03′N 75°21′E 12.05°N 75.35°E and covers an area of 43.05Km^2. It has an average elevation of 56 meters (183 feet). The surrounding area including the villages of Pattuvam, Kuttikkol, Karimbam, Koonam features lush green fields and low rolling hills. The rivers of Kuppam and Valapattanam surround the town from all sides and the Arabian Sea is only 14 kilometres to the west. The hanging bridge at Kuttiyeri and Kooveri and the riverside temple at Parassinikkadavu, attract a large number of tourists.

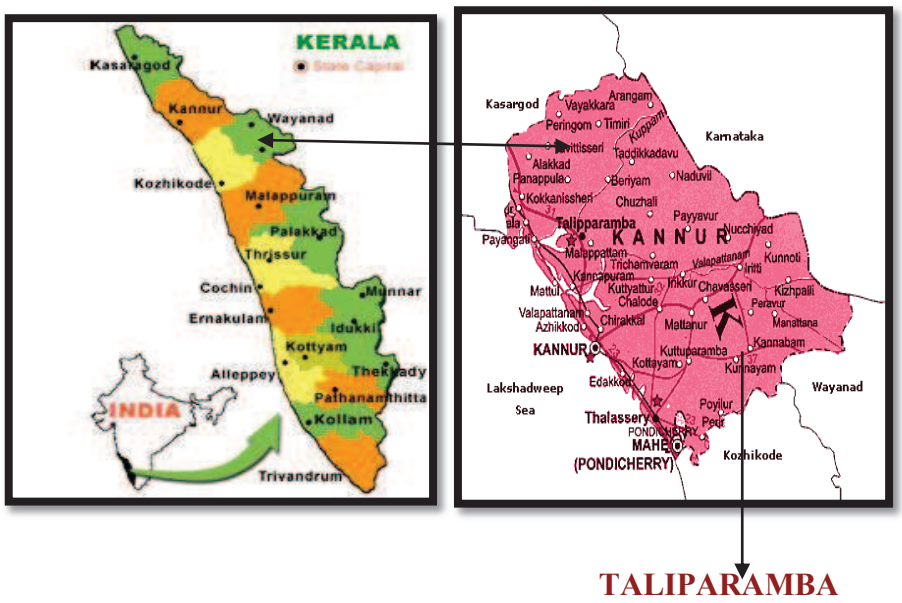

Figure 1. Study Area

Climate: The area has a humid climate with an oppressive hot season from March to the end of May. This is followed by the South-West monsoon which continues till the end of September. October and November from the post-monsoon [North-East Monsoon] or retreating monsoon season. During the months of April and May, the mean daily maximum temperature is about 35 °C. Temperature is low in December and January and the minimum temperature is about 20 °C. On certain days the night temperature may go down to 16 °C, although this is extremely rare. The annual average rainfall is 3438 mm and more than 80% of it occurs during the period of South-West monsoon. The rainfall during July is very heavy and the district receives 68% of the annual rainfall during this season.

Methods: The ethno botanical survey was conducted different areas of Taliparamba municipality, Kannur, Kerala during July 2015- February 2016. Traditional medicinal information on medicinal plants were recorded through field observation, interviews and discussion with herbal healers , knowledgeable elder people, housewives and farmers of the villages, employing a semi structural questionnaire which include the village name, the botanical name of medicinal plants, common name, ailments for which it has been used and plant component used. Discussion were made at times with local chiefs, priests and herbal doctors not only for gathering information but also for confirmation of the uses of same plant recorded from different informants at different places. Decoction, Drops, Extract, Fresh juice, Paste, Pills, Powder etc. forms of drugs used by Vaidyas and Herbal healers.

During field trips the plant species are collected with the help of informants has been recorded, photographed, identified taxonomically using the standard flora 3 volumes of Flora of the Presidency of Madras (Gamble,G.S. and Fischer, C.E.F.,1928) and already existing specimens. The herbarium were prepared and voucher specimens were deposited in the herbarium of Nirmala College herbarium.

Result and Discussion: The present study revealed that 69 plant species of various genera and families were found in different areas of Taliparamba Municipality. The listed medicinal plants have high efficiency and medicinal values which have been widely used by different Indian System of Medicines like Ayurveda, Homeopathy, Unani, Sidha and allopathy. Some of the species are also used for cosmetics, food products, beverages etc. and has tremendous demands from pharmaceuticals and many other herbal based Industries.

A total of 69 plant species belonging to 64 genera and 39 families were documented and found that these are used for the treatment of asthma in Taliparamba municipality. Most of the plant species used were belongs to the family Fabaceae (10.44%), followed by Asclepiadaceae (7.24%), Acanthaceae (7.24%), Euphorbiaceae (5.79%) and Lamiaceae (4.34%). All other families contributed only one or two species each to the families. That families are Amaranthaceae, Apocynaceae, Araceae, Asteraceae, Convolvulaceae,Moraceae, Nyctaginaceae, Poaceae, Rubiaceae, Sapindaceae, Solanaceae and Verbenaceae (2.89%), Amaryllidaceae,

Anacardiaceae, Aristolochiaceae, Asphodelaceae, Bignoniaceae, Brassicaeae, Burseraceae, Caesalpinaceae, Combretaceae, Cruciferae, Juglandaceae, Liliaceae, Loranthaceae, Marandaceae, Mimosaceae, Myristicaceae, Passifloraceae, Potenderaceae, Punicaceae, Scophulariaceae, Simarubaceae and Vitaceae (1.44%). The majority of the herbal preparations were prepared from the leaves of plants (22.6%), while some are the whole plant (14.78 %/), and root (8.69%), Seed and fruit (6.08%), Bark and Stem (2.6%), Flowers and Rhizome (0.86%) were used less frequently. This indicates that the local healers count on a very well developed knowledge about the properties of different plant part. Many remedies are prepared by combination with honey and majorities are taken orally. In the survey there are 30 plants are shrubs, 19 are tree, 12 are herbs, 8 are climber and one is epiphyte (Table 1,figure 2 and 3).

The present study revealed that 69 plant species of 64 genera and belonging to 39 families were found in different areas of Taliparamba Municipality. Floristic diversity and medicinal properties of various plants were studied by several authors in various sites. Punjani and Kumar (2002) recorded 50 species of 45 genera belonging to 26 families of angiosperm along with their local formulations being used traditionally for the treatment of asthma in the Aravalli ranges in Northern Gujarat, India. Ethno botanical survey of medicinal plants used in the treatment of asthma in the Nkongsamba Region, Cameroon was reported by Emmanuel Noumi (2010). Kuldip*et al.,* (2015) gives an assessment of Indian medicinal plants for the treatment of asthma. They recorded ethno medicinal use of 95 plant species along with their botanical names, plant family, part used, mode of administration and distribution of the plants in India were documented.

Conclusion: Traditional medicine is perceived as efficient, safe and cost-effective. Herbal medicines are compatible to the human body constitution and suit to the social and cultural needs of the people. Modern medicinal science has paid great attention to the study of medicinal plants for various human diseases. Hence the present study emphasizes the need to survey the locally available medicinal flora and their conservation and sustenance for future generation.

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Tables and Figures:

Table1. Formulations of Various Medicinal Plants used for the Treatment of Asthma

SL.NO.	BOTANICAL NAME	FAMILY	PLANT PART USED	HABIT	USES
1.	*Abrus precatorius* L.	Fabaceae	Leaves	Climber	Fresh leaves are taken twice a day to cure Asthma, Bronchitis and Cough.
2.	*Acacia nilotica* (L.)Del.	Mimosaceae	Stem, Bark	Tree	The decoction of stem bark is given orally at bed time for 10-12 days regularly to cure Asthma.
3.	*Acalypha indica* L.	Euphorbiaceae	Whole plant	Shrub	15-20 ml. of whole plant extract is used in one week to cure Asthma.
4.	*Achyranthes aspera* L.	Amaranthacea e	Whole plant	Shrub	1.5g. of whole dry ash powder of *Achyranthesaspera*mixed with honey is given one week to cure cold and cough along

					with Asthma.
5.	*Adhatoda vasica*Nees.	Acanthaceae	Leaves	Shrub	Leaves of *Adhatodavasica* with roots of *Solanumsurrattense* and fruits of *Piper longum*in equal proportions and made into powder, 1g. mixed with honey taken for one week orally.
6.	*Alianthus excels* Roxb.	Simarubaceae	Stem, Bark, Leaves	Tree	The decoction of stem bark and leaves are given for 12- 15 days for the treatment of chronic bronchitis and asthma.
7.	*Aloe vera* Linn.	Asphodelaceae	Leaves	Herb	Open the leaf longitudinally and extract the iodine secretion and collect the internal gel from inside of the leaf. Consume the iodine secretion and the gel 1- 2 cups per day for a week to a month.
8.	*Aristolochia indica*L.	Aristolochaceae	Leaves	Climber	Leaf decoction is taken orally for treating asthma.
9.	*Bacopa monnieri* (L.) Penell.	Scrophulariaceae	Whole plant	Herb	The dried plant powder is given internally.
10.	*Barleria prionitis*L.	Acanthaceae	Leaves	Shrub	The decoction of fresh leaves is mixed with powdered dried fruits of black pepper (*Piper nigrum*) and then given orally twice a day for 15-20 days against asthma.
11.	*Bauhinia racemosa* Lam.	Caesalpinaceae	Leaves	Shrub	The dried leaves powder is smoked as cigarette to cure cough and asthma.
12.	*Boerrhavia diffusa*L.	Nyctaginaceae	Root	Herb	Root decoction of*Boerrhaviadiffusa*is taken twice a day for 3-4 weeks to treat asthma.
13.	*Boerrhavia erecta* L.	Nyctaginaceae	Whole plant	Herb	Dried plant powder is smoked as cigarette once a day for 1 month to get relief from asthma.
14.	*Caesalpinia crista* Linn.	Fabaceae	Seeds	Shrub	Powder of seeds taken in the doses of 0.7 to 2.0g with equal parts of black pepper.
15.	*Calotropis procera*R.Br.	Asclepiadaceae	Root	Shrub	4g root bark powder of *Calotropisprocera* with honey is taken twice a day for 2- 3 days for all types of cough and asthma.
16.	*Cassia occidentalis*L.	Fabaceae	Leaves, Roots	Shrub	Decoction of leaves and roots of *Cassia occidentalis*is given to the patients having mild asthma.
17.	*Cassia tora*L.	Fabaceae	Seeds	Shrub	The dried seed powder of *Cassia tora* is given twice a day for 7- 10 days to cure asthma.
18.	*Celosia argentea*L.	Amaranthacea	Whole	Shrub	The ash of whole plant is given

		e	plant		with honey to treat cough and asthma.
19.	*Cissus quadrangularis*L.	Vitaceae	Leaves	Shrub	The leaf juice is given twice in a day for 1 week.
20.	*Clerodendron multiflorum*(Burm.f.)o.Ktze	Verbenaceae	Leaves	Shrub	The leaf juice is mixed with dried leaf powder of *Piper nigrum* and given orally to cure cough and cold. The water decoction is also useful remedy against asthma.
21.	*Curculigo orchioides*Gaertn.	Amaryllidaceae	Whole plant	Herb	Juice, 15ml mixed with honey taken twice a day orally.
22.	*Cyanodon dactylon* Pers.	Poaceae	Root	Herb	The root juice mixed with honey is given orally for seven days to cure cough and cold along with asthma.
23.	*Datura metel*L.	Solanaceae	Leaves	Herb	Dried leaf powder is smoked as cigarette twice a day for 2-3 weeks to get relief from asthma.
24.	*Dendrophthoe falcata* (L.f.) Ett.	Loranthaceae	Bark	Epiphyte	The bark has narcotic and astringent properties. Bark powder eaten orally daily.
25.	*Dracaena fragrans*Ker. Gawl.	Liliaceae	Whole plant	Herb	10g per 1L water and boil 3 cups per day, according to treatment.
26.	*Emblica officinalis*Gaertn.	Euphorbiaceae	Seeds	Tree	Seeds are mixed with clove (*Syzigiumaromaticum*) in equal amounts and roasted in a pan. The mixture is then powdered and 5g of it is given to the patient./ the fruit powder is given orally.
27.	*Erythro cocatrichogyne* (Mull.Arg.)Prain Var.	Euphorbiaceae	Root	Tree	The root is powdered and mixed with water. The mixture is use for the treatment of diabetes and asthma.
28.	*Euphorbia hirta* L.	Euphorbiaceae	Leaves	Shrub	The pills are prepared from crushed leaves. These pills are given with warm water or tea to cure asthma.
29.	*Evolvulus alsinoides* L.	Convolvulacea e	Leaves	Shrub	Leaves of the plant smoked during infection.
30.	*Ficus heterophylla*L.f.	Moraceae	Root bark	Tree	The bark of the root pulverized and mixed with coriander seeds given twice for one week.
31.	*Ficus racemosa* L.	Moraceae	Fruit	Tree	The dried ripe fruit are mixed with jaggery and keep for 10 days. This preparation is given orally to treat asthma.
32.	*Garuga pinnata*Roxb.	Burseraceae	Leaves	Tree	Juice of leaves mixed with honey given daily to patients.
33.	*Hemidesmus indicus* (L.)R.Br.Var.	Asclepiadaceae	Root	Herb	The root decoction is mixed with sugar and milk. The preparation is given twice a day.

34.	*Holarrhena antidysenterica* Wall.	Apocynaceae	Root	Tree	The root powder of the plant is mixed with root powder of *Tectonagrandis* and boil in water. The decoction is given orally once a day for 10- 15 days against asthma.
35.	*Holostemma annulare*K Schum.	Asclepiadaceae	Flowers	Climber	The flowers are generally given orally for 7 days against cough and asthma for quick relief.
36.	*Jacranda acutifolia*h.&B.	Bignoniaceae	Bark	Tree	10g per 1l. boiling water, boil 2-3 minutes. Drink 3 cups per day, as needed.
37.	*Juglans neotropica*Diels.	Juglandaceae	Fruit	Tree	10g per 1l, boil water for 3-5 minutes.
38.	*Justicia adhatoda* L.	Acanthaceae	Leaves	Shrub	Decoction of leaves in small amount taken daily for 3 weeks.
39.	*Justicia procumbens* L.	Acanthaceae	Whole plant	Shrub	Infusion of herb is given daily to patients.
40.	*Lepidium sativum*L.	Cruciferae	Whole Plant	Shrub	Plant juice is administrated to patients.
41.	*Leucas aspera*Spr.	Lamiaceae	Leaves	Shrub	Leaf extract is applied for twice a day for 2 days to treat painful swellings. 5-10 flowers are eaten raw for asthma along cough and cold.
42.	*Mangifera indica*L.	Anacardiaceae	Seeds	Tree	Powder of seeds taken directly with water.
43.	*Maranta arundinaceae*L.	Marandaceae	Rhizome	Herb	Rhizome powder along with milk taken orally daily.
44.	*Merremiae marginata*Hall.f.	Convolvulacea e	Leaves	Tree	Leaf extract is given to drink with 50ml. of honey for 2 days to get relief.
45.	*Mimosa pudica*L.	Mimosaceae	Whole plant	Shrub	Plant juice mixed with coconut milk is used internally for treatment.
46.	*Myristica fragrans*Houtt.	Myristicaceae	Seeds	Tree	Grind seeds and boil in 1l water. One seed to make 4 cups per days, 7-15 days. Take one cup in the morning, midday's and evening until bottle is finished.
47.	*Monochori avaginalis* Presel.	Pontederiaceae	Leaves	Herb	leaves eaten with sugar daily.
48.	*Myrtoxylon balsamamum* (L.) Harms.	Fabaceae	Seeds	Tree	3 seeds toasted and crushed per 1 cup of water. Drink ½ cup for adults, 1 tbsp for children.
49.	*Nasturium indicum*DC.	Brassicaceae	Whole plant	Shrub	Powder taken twice a day in small amount.
50.	*Neuracanthus sphaerostachys*(Nees) Dalz.	Acanthaceae	Whole plant	Shrub	The ash of whole plant is mixed with honey and given orally 2-3 times a day to cure cough and asthma.
51.	*Ocimum sanctum* L.	Lamiaceae	Leaves	Shrub	Fresh leaves of tulsi, mimordica, aclypha are crushed and prepared pills,

					daily 2 pills are given for one week to cure asthma.
52.	*Oldenlanlandia umbellata*L.	Rubiaceae	Whole plant	Herb	Leaf extract is taken orally once a day for 3-4 weeks to get relief from asthma. Root paste is applied 1 week for bronchitis.
53.	*Passiflora foetida* L.	Passifloraceae	Fruit	Climber	Fruit decoction is taken orally along with 50ml of honey for two times daily.
54.	*Peltoforum africanum* Send.	Fabaceae	Seeds	Tree	It is crushed its own and mixed with hot water for the treatment of water.
55.	*Pergularia extensa*NE Br.	Asclepiadaceae	Leaves	Climber	Decoction of leaves is given twice a day for 30 days to cure.
56.	*Pistia stratiotes* L.	Araceae	Whole plant	Herb	The leaf juice is mixed with rose water and sugar given to patients.
57.	*Plumeri arubra* L.	Apocynaceae	Leaves	Tree	Leaf extracts given orally twice a day for three weeks.
58.	*Pothos scandens* Linn.	Araceae	Whole plant	Climber	Cut up with camphor smoked like tobacco for treatment.
59.	*Psiadia paniculata*(DC)Oliv.&Hiern.ex.Vatke.	Asteraceae	Roots, branches and leaves	Shrub	The roots, branches and leaves of the plant are used to cure asthma. When preparing for kids, boil in milk and add a little bit of sugar to reduce the bitter taste. If it is an adult that has to use the medicine, it is okay to boil in water and give to the patient to drink when the medicine has cooled.
60.	*Punica grantum*L.	Punicaceae	Fruit	Shrub	The bark of fruit is kept in month 3-4 times a day and the juice is swallowed to cure cough and asthma.
61.	*Salvia sagitata* R.&P.	Lamiaceae	Whole plant	Shrub	10g per 1L. water, drink three times per day.
62.	*Sapindus emarginatus*Vahl.	Sapindaceae	Fruit	Tree	Fruits (3-4) eaten directly.
63.	*Sapindus trifoliatus*Hiern.	Sapindaceae	Fruit	Tree	Juice of fruit taken daily one time.
64.	*Solanum indicum*L.	Solanaceae	Leaves and Fruits	Shrub	The dried leaves and fruits are mixed and smoked through smoking pipe to cure cough and asthma. The root powder is boiled with water and given orally to cure asthma.
65.	*Terminalia arjuna* (Roxb.ex.DC.).Wt.&Arn.	Combretaceae	Stem bark	Tree	The decoction of stem bark is given orally to cure asthma problems.
66.	*Tylophora indica*(Bur.f.)Merrill.	Asclepiadaceae	Leaves and Roots	Climber	Decoction of leaves cure asthma.
67.	*Uncaria tomentosa* (Wildenow.ex.Roemer&S	Poaceae	Whole plant	Climber	Better used dried material. Grind material. Boil the

	chultes) DC.				material 10g per 1L. daily water 10 minutes. Drink 1L. daily, 3 times per day for 15 days at least or as needed.
68.	*Vernonia cinaeria*Less.	Asteraceae	Leaves	Herb	Leaf decoction is given to drink twice a day for asthma.
69.	*Vitex trifolia*L.f.	Verbenaceae	Leaves	Tree	The dried leaves are smoked to treat cough and asthma.

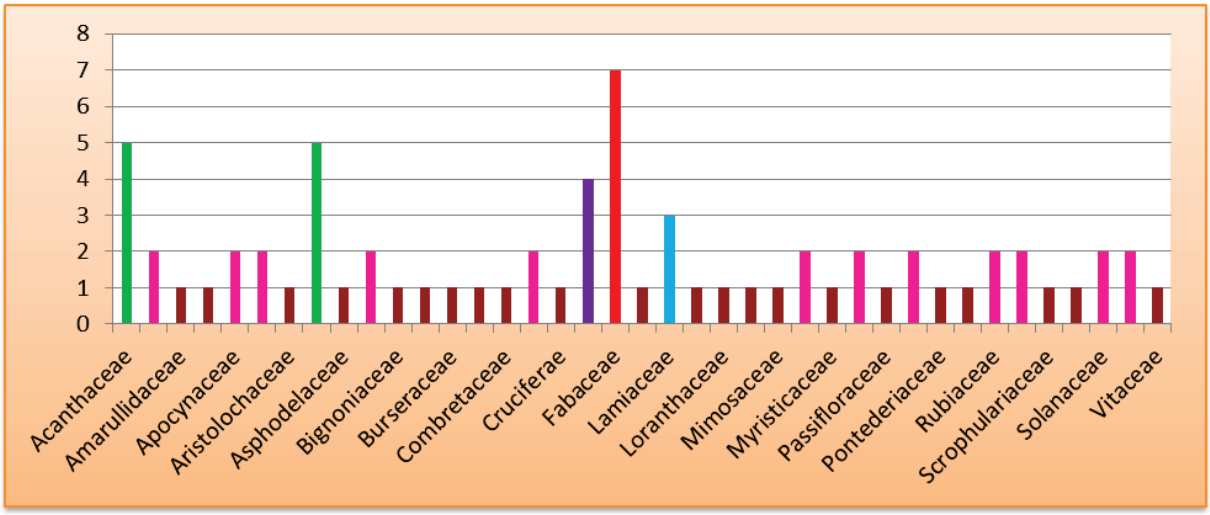

Figure 2: List of Families of Various Plants Used for the Treatment of Asthma

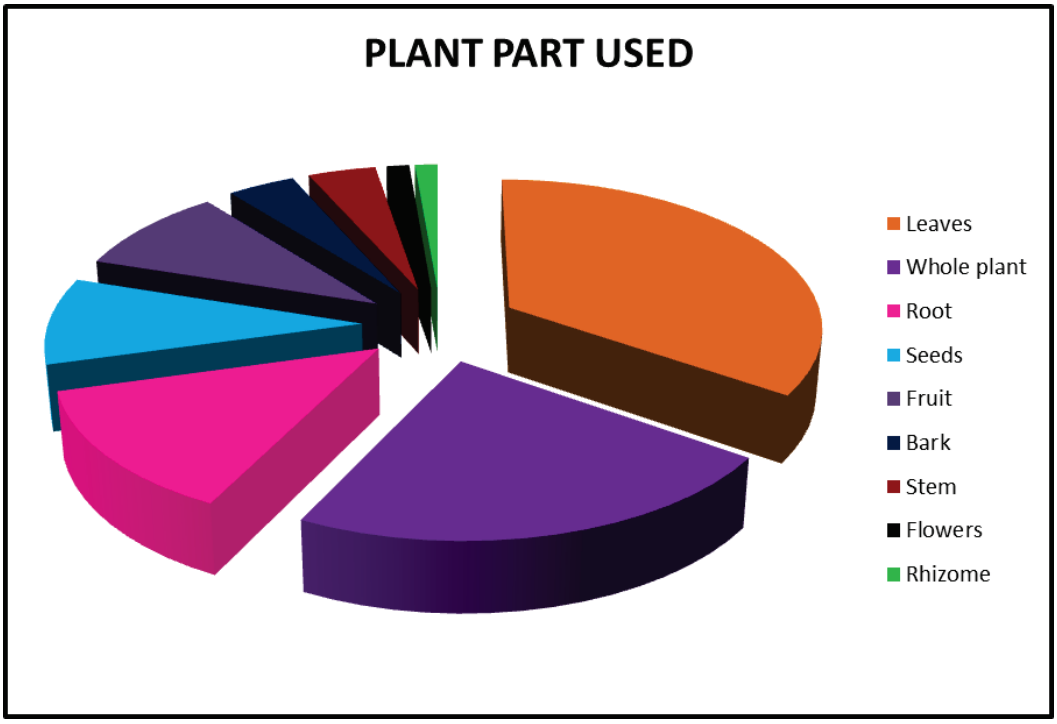

Fig.3. 3D Chart Representing the Statistics of Different Part of the Medicinal Plants Used For the Treatment of Asthma

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