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Review on plants with styptic activity

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Abstract

The Siddha system is based on the combination of ancient medicinal practices and spiritual disciplines as well as alchemy and mysticism. They are about 391,000 species of vascular plants currently known to science of which about 369,000 species are flowering plants, according to a report by the Royal Botanic Gardens, Kew in the United Kingdom for the first time ever. Scientists have assessed the state of all vascular plants in the world all plants that have specialized tissues to transport food and water. Styptic drug that arrests or restrains bleeding. The leaves, seeds, flowers, bark, grass, root of trees are used as styptic activity. In Siddha literatures styptic activity is mentioned in the term "Kurthipokkadaki". The Greek word of styptic represents "to constrict". Styptic agents slow bleeding from cuts, they contain astringents that work to contract tissue and seal blood vessels.

Keywords: Styptic, Kurthipokkadaki, Herbals, Siddha medicines.

Introduction

Medicinal plants are of important therapeutic aid for treatment of various diseases. The styptic action is defined as contracting the tissues or blood vessel. It is also known as astringent and haemostatic which tends to check bleeding by contracting the tissues or blood vessels. The Siddha aspect of the medicinal plants having styptic furnished in the table no 1 following is the list of single herbs for haemostatic action. In olden days the Siddhars used a lot of herbs to

treat bleeding disorder like haemorrhoids, menorrhagia, gingivitis etc. The present review covers the basic information, pharmacological activities, phytoconstituents, medicinal uses, parts used, family from AYUSH. A scientific investigation of medicinal plants not only demonstrates a particular type of activity which has been reported in ancient literature but also time emerges produces some unexpected activity. The main aim of the present investigation is to evaluate the styptic activity.

Methodology

The paper deals with styptic screening of some herbs by using keywords kuruthipokkadaki, Medicinal plants which is taken from the Siddha literature references and by using some search engines like Google Scholar, PubMed.

Literature survey

To list out the medicinal plants as a kurthipokkadaki and document the part used and its phytoconstituents and pharmacological activities of the medicinal plants.

Table Plants having styptic activity

| S.no | Tamil name | Botanical name | Family | Part used | Taste |
|------|-----------------------|------------------------------|---------------|---|---------------------|
| 1. | Athipazham | <i>Ficus racemosa</i> | Moraceae | Fruit,root | Astringent |
| 2. | Abini | <i>Papaver somniferum</i> | papavaraceae | Dried latex | Sweet |
| 3. | Arasu | <i>Ficus religiosa</i> | Moraceae | Leaf, seed,bark,root. | Astringent,Bitter |
| 4. | Arival mookupachiilai | <i>Sida acuta</i> | Malvaceae | Leaf, root, bark ,fruit, seed. | Astringent, bitter |
| 5. | Arugambul | <i>Cynodon dactylon</i> | Poaceae | Grass, root. | Sweet |
| 6. | Anasi pazham | <i>Ananas comosus</i> | Annonaceae | Leaf ,fruit | Sour,sweet,pugency. |
| 7. | Aalamaram | <i>Ficus benghalensis</i> | Moraceae | Leaf, fruit, flower. | Astringent |
| 8. | Ithi | <i>Ficus microcarpa</i> | Moraceae | Pulp, unripefruit,bark | Astringent |
| 9. | Imbural | <i>Oldenlandia umbellata</i> | Rubiaceae | Leaf, root, root bark, whole plant, | Sweet |
| 10. | Eliaamanakku | <i>Jatropha curcas</i> | Euphorbiaceae | Leaf, seed, bark | Astringent |
| 11. | Othimaram | <i>Lannea Coromandelica</i> | Anacardiaceae | Leaf, bark, gum, root | Astringents |
| 12. | kalyanapoosani | <i>Benincasa hispida</i> | Cucurbitaceae | Fruits,seeds | Sweet |
| 13. | Kaatammanakku | <i>Jatropha Curcas</i> | Euphorbiaceae | Seed | Astringent |
| 14. | Saembu | <i>Colocasia esculenta</i> | Araceae | Seed | Sweet |
| 15. | Naaval | <i>Syzygium Cumini</i> | Myrtaceae | All parts | Astringent |
| 16. | Maasikkai | <i>Quercus infectoria</i> | Fagaceae | Unripped fruits. | Astringent |
| 17. | Mathulai | <i>Punica granatum</i> | Punicaceae | Flower, fruit, seed, bark, unripe fruit . | Astringent |

Pharmacological Actions and phytoconstituents of the plants

| S.no | English name | Pharmacological actions | Phytoconstituents |
|------|---------------------------|--|---|
| 1. | <i>Ficus recemosa</i> | Hypoglycemia, Anthelmintic, wound healing, Antidiuretic, Antidiarrheal, Antioxidant, Anticancer, Hepatoprotective, Antiulcer, Analgesic, Antifungal, Cardioprotective, Hypolipidemic, Antipyretic, Larvicidal activity. | Fruits ; The phenolic compounds like gallic acid and ellagic acid. Furanocoumarins like psoralen, bergapten, glaucinol acetate, lupeol acetate, Alpha-amyrin. |
| 2. | <i>Papaver somniferum</i> | Anti spasmodic, Hypoglycemic activity, Anti convulsant, Anti diarrhoeal, Antitissue activity, Action of fruits; Sexual stimulant, Hypnotics, Diuretic, Anti analgesic, Body tonic. Seeds; Analgesic, Constipation, Aphrodisiac, Demulcent Mild Astringent, Antianalgesic, Nutritive. | Morphine ,Codeine, Pethidine, E mitine, Thebaine, Narcotine, Naceine, Papaverine, Somniferine, Free amino acids, Volatile oil, Dextrose, Pectin, Opoinin, presence of enzymes like protease, oxydase, Maltase, Urease invertase. Benzylisoquinoline alkaloids, sanguinarine, triterpenoid, phenylpropanoid. |
| 3. | <i>Ficus religiosa</i> | Astringent, Anti diabetic, Anti diarrhoeal, Anti convulsant, Hypolipidemic, Anthelmintic, Immunomodulatory activity | Phenols, Tannins, Steroids, Alkaloids, Flavoids, Beta – sitosterol-D-glucoside, vitamin K, n –octacosanol, methyl oleanolate, lanosterol, stigmasterol, lupen -3-one. Cochtone, Tanins, Alkaloids, Phenols, Lanosterol, Flavonoids, Stigmasterol, Vitamin K. |
| 4. | <i>Sida acuta</i> | Antispasmodic, Antimalarial, Anti – inflammatory, Antipyretic, Hepatoprotective, Hypoglycemic, Insecticidal, and Anti cancer, Cardio vascular activity, wound healing Analgesic Styptic activity. | Vasicine, Ephedrine, Crytolepine, Saponosides, Coumarine, Beta – sitosterol, Stigmasterol, Ampesterol, Tannin, Phenolic compounds, Evofolin –A and B, Scopoletin ,Sesquiterpene and f Flavanoids |
| 5. | <i>Cynodon dactylon</i> | Emollient, Diuretic, Astringent, Styptic, Antioxidant, Antipyretic, Antiparasitic, Analgesic, Anticancer, Anti inflammatory, Anti microbial. | Flavanoids, Alkaloids, Volatile oil Fixed oil, Glycosides, Terpenoides, Steroids, Saponins, Tannins, resins, Phytosterol, Reducing sugar, carbohydrate, Volatile oils, Protein and Fixed oils, Propanoic acid Hexanediamide. |

| | | | |
|----|---------------------------|--|---|
| 6. | <i>Ananas comosus</i> | <p>Anti cholinestrase, Anticancer, Antidepressant, Anti helmintic, Antimicrobial, Hypoglycemic, Hepatoprotective, Respiratory tract diseases, Hypolipidemic Vasorelaxant.</p> <p>Leaf; Germicide, Purgative, Diaphoretic, Laxative.</p> <p>Fruit; Germicide, Styptic, Emmenagogue.</p> | <p>Potassium, Calcium, Magnesium, Alkaloid, Tannin, Cardiac glycoside, Ascorbic acid, Flavanoids, Coumarin, Ellagic acid, Ferulic acid, Chlorogenic acid .</p> |
| 7. | <i>Ficus benghalensis</i> | <p>Antihyperglycemic and Antidiabetic, Anti –inflammatory, Analgesic, Antibacterial, Cytotoxic activity.</p> | <p>Sterols, Beta sitosterols, Flavonoids; Catechin, Genisten. Triterpene; Friedelin.</p> <p>Phytosterol; Lupeol, Alpha – amyryn acetate.</p> <p>Amino acids; Cysteine, Glutamine, Methionine</p> <p>Polysaccharides; D- Glucose, D – Fructose.</p> <p>Triterpenoids; Bengalenosinone, benganoic acid. Alkaloids, Carbohydrates, Sponins, Phenols, Xanthoproteic, Tannins.</p> |
| 8. | <i>Ficus microcarpa</i> | <p>Antioxidant, Anti bacterial, Anticance Anti diabetic, Anti diarrhoeal, Anti inflammatory, Anti asthmatic, hepatoprotective, Hypolipidemic activity.</p> | <p>Triterpenoids, Phenyl propanoids, Flavonoids, and Phenolic acids, Amyrone, Lupeol, Beta –sitosterol, Polyphenols, Phenolic acid, Triterpenoids, Flavonoids, Flavonols, Anthocyanins, Carotenoids, Glycosides, Polysaccharides, Vitamin K ,E and C, alkaloids, Saponins.</p> |

| | | | |
|-----|------------------------------|---|---|
| 9. | <i>Oldenlandia umbellata</i> | Styptic, Cholagogue, Hepatoprotective, Antibacterial, Antioxidant property | Hedyotiscone B, Cedrelopsin, Pheophorbide A methyl, Scandoside methyl ester, Asperulosidic acid, Nicotinic acid, Anthragallol 1,3 –dimethyl ether, Anthraquinones. Stem; Flavonoids, Triterpenoids, Alkaloids, Cardenoids, Fatty acids, Chlorogenic acid, Sponins. Leaf; Carotenoids, Glycosides, Polyuronoids, Anthracene, Alkaloids. |
| 10. | <i>Jatropha curcas</i> | Antibacterial, Cytotoxic, Anti – inflammatory, Anti microbial, Antidiabetic, Anti coagulant, Hepatoprotective, Analgesic, Anticancer, Antiviral, Abortifacient, Antitumour, Antiparasitic, Antidiarrhoeal . | Palmitic acid, Stearic acid, Arachidic acid, Oleic acid, Linoleic acid, Arabinose, Glucose, Rhamnose, Galactose, Xylose, Galactouronic acid, Beta – sitosterol. Stem bark contains; Beta – sitosterol, Taraxerol. Leaves contains; Sucrose, Vitexsidein, Campesterol, Triaccontanol, Saponins, Tanins, Terpenoids, Steroids, Glycosides, Phenols, Flavonoids. |
| 11. | <i>Lannea coromandelica</i> | Anti inflammatory, Anti ulcer, Anti hyperglycemic, Anti microbial, Anti fungal. | Sitosterol, Palmitic acid, Mycadiol, Isovanlin, Stearic acid, Trans-cinnamic acid, Pheonol, Flavonoid, Quercetin-3-arabinoside, Dimethoxydihydroflavonol . |

| | | | |
|-----|---------------------------|---|--|
| 12. | <i>Benincasa hispida</i> | Antidepressant, Antioxidant, Anti-inflammatory, Analgesic, Nephroprotective, Antidiabetic, Hypolipidemic, Antiasthmatic, Antimicrobial, Anxiolytic, Muscle relaxant, Immunopotentiator, Diuretic, Antioxidant, Styptic. | Fruits ; Volatile oils, Phenolic compounds, Glycosides, Flavonoids, Sacchrides, Carotenes, Proteins, Uronic acid, Saponins, Steroids, Carbohydrates, Oxalates and phytate. Seeds: Amino acids, Fixed oils. |
| 13. | <i>Jatropha curcas</i> | Galactagogue, Anti inflammatory, Anti oxidant, Anti microbial, Anti microbial, anti viral, Anti cancer, Anti diabetic, Anti coagulant, Hepatoprotective, Analgesic. | Total phenols, tannins, free amino acids, Steroids, Alkaloids, Phenolic compounds. |
| 14. | <i>Syzygium cumini</i> | Fruit: Anti diabetic, Antihyperlipidemic, Antioxidant, Anti ulcer, Hepatoprotective, Antiallergy, Anti arthritic, Anti microbial, Anti inflammatory, Antiplaque, Anti diarrhoeal, Nephroprotective, Radio protective, Anthelmintic. | Fruits: Rich in raffinose, Gentiobioside, Anthocyanins, Glucoside, Ellagic acid, Kaemferol, Myrecetin. Flowers: oleanolic acid, Flavonoids, Terpenoids, Tannins, Phenolics. Roots: Flavonoids ,Glcosides, Myricetin, Myricitin, Acetyl-L-rahmnopyranoside, Triterpenoids, Esterase, Galloyl carboxylase, Tannin. |
| 15. | <i>Quercus infectoria</i> | Anti inflammatory, Anti ulcerogenic, Anti viral, Anti pyrogallol, Anti blastocystis, Anti amoebic, Astringent. | Tannin, Syringic acid, Hexamethyl ether, Methyl oleanate, Gallic acid, Ellagic acid, Alkaloids, Saponins, Triterpenoids, Pyrogallol, Free gallic acid. |
| 16. | <i>Punica granatum</i> | Anti oxidant, Anti inflammatory, Anti carcinogenic, Neuroprotective, Antiatherogenic effect, Hypoglycemic, Anti glycemic, Anti microbial, Anti malarial, Anti diabetic, Anti fungal. | Ellagic, Ellagitannin, Flavonoid, Anthocyanidins, Anthocyanin, Estrogenic flavonoids, Flavones, Punicic acid, Punicalagin, Proanthocyanins. |

| | | | |
|-----|----------------------------|--|---|
| 17. | <i>Colocasia esculenta</i> | Anti inflammatory, Anti microbial, Analgesic, Anti osteoarthritic, Anti fungal, Anti cancer, Anti bacterial, Anti oxidant, Anti hyperlipidemic, Anti diabetic. | Apigenin, Luteolin, Anthocyanin, Stigmasterol, Pentatriacont, Vicerin, Vitexin, Alpha cholestradiene. |
|-----|----------------------------|--|---|

1) *Ficus racemose*

Leaves:

A decoction of leaves is used as a douche in dysmenorrhea.

Fruits:

Fruits are used as a remedy for visceral obstruction, diarrheas

A bath made of fruit and bark is regarded as a cure for leprosy.

The fruit is regarded as a good remedy for diabetes.

Bark:

A decoction of bark is given in asthma and piles.

Paste of stem bark is used in burns, swelling, leucorrhoea.

Latex:

The latex is aphrodisiac and is administered in boils, haemorrhoids

Sap of the root is given for gonorrhoea, diabetes, and a topical application in mumps, and other inflammatory glandular enlargements.

2) *Papaver somniferum*

Papaverine is used as a muscle relaxant. Poppy based drug morphine is used to treat cancer related severe pain.

Poppy seeds is used for insomnia. Poppy seeds is boiled in half a cup of milk for 1 minute it is consumed at night. This remedy can be continued for a period of 1 month.

Codeine another extract of opium is used to treat cough. It is used in the form linctus. Papaverine relaxes in voluntary smooth muscles and increases cerebral blood flow.

3) *Ficus religiosa*

The milky latex obtained from the bark root or fruit of the plant is given in a dose of 5-6 drops with honey and ghee to treat impotency and help in conceiving in females.

The decoction of the bark is given in the dose of 50-60 ml to treat joint swelling.

The decoction of the bark gargling with luke warm is useful to treat mouth ulcers and gingivitis.

The dried powder of the fruits are the paste of bark is given with honey to treat severe cough.

4) *Sida acuta*

The leaves decoction is used to treat abdominal pain, haemorrhoids, azoospermia. The leaf juice is also used in india for vomiting and gastric disorders.

The root extract is taken in the case of leucorrhoea, breathing problem and cough.

The juice of the root is applied to wounds. The whole plant extract to treat diseases such as fever headache, skin disease diarrhea.

5) *Cynodon dactylon*

Durva is processed with ghee and washed over the pile mass to check bleeding.

Decoction of the whole plant is used in the treatment of vomiting.

In intrinsic haemorrhage the juice of durva, *Ficus benghalensis* leaves and *Clitoria ternatea* is mixed together and taken with honey.

Durva is taken and crushed made into a decoction is taken to cure fever.

6). *Annona squamosa*

Fruit is used to treat gastric irritability, jaundice, ripe fruit is used a laxative for relieving constipation, due to its significant fibre content.

The juice from the ripe fruit is diuretic, digestive tonic, and is used to apply burns, itches, and boils.

Ripe fruit is used as a laxative for relieving constipation and due to its significant fibre content.

7). *Ficus benghalensis*:

In excessive sweating, cold infusion from the tender buds of *Ficus benghalensis* is given.

Latex of banyan tree is used to treat cases of premature ejaculation.

The decoction of the bark is given in the dose of 50-70 ml to treat vaginal diseases.

The milky latex is applied directly to the wound and swelling for quick relief.

To control diabetes, the decoction of the bark of vata or the fruit is given.

8). *Ficus microcarpa*

The bark is given with butter milk to cure the liver diseases for seven days.

The decoction of bark is used as a cooling agent in case of abdominal pain, the liver problems, mouth ulcers and leucorrhoea.

Powdered leaves ,and bark is found very good in rheumatic disease.

Bark decoction is used to wash affected areas like wounds, and cuts.

Twigs are used to tooth brush to prevent dental cavities.

9). *Oldenlandia umbellata*

A decoction of root was given in doses ½ to 1 ounce a day to cases of bronchitis and asthma.

Decoction of leaves is used to treat poisonous bites and also considered as good expectorant.

10). *Jatropha curcas*

The latex is a herbal medicine that is traditionally used for medicinal purposes to cure variable disease.

The latex has the potency to cure tooth pain, bleeding gum and as anti inflammatory action.

The leaf extract in methanol for cyto toxicity and its potential to inhibit hemagglutinin protein of influenza virus.

The oil is also applied internally and externally as a abortifacient and externally as a rubefacient to treat rheumatic conditions and variety of skin infections.

11) *Lannea coromandelica*

The leaves is traditional medicinal plant to treat hepatitis, diabetes, ulcers, heart disease and dysentery.

In Siddha system stem bark decoction used in menorrhagia.

The fruit paste is therapeutically used for bone fracture by tribes in eastern part of Andhra Pradesh.

Leaf juice was also claimed to be used as antidote in coma caused by narcotics.

12) *Benincasa hispida*

The fruit is also used in peptic ulcer and also used in diabetes mellitus, urinary infection, haemorrhages from internal organs.

Traditionally used as a cooling, styptic tonic, dyspepsia, urinary calculi, aphrodisiac.

13) *Colocasia esculenta*

Leaf stem are traditionally used for treating a variety of condition such as parasitic infection, asthma, hypertension.

A raw peeled corm is eaten with salt against jaundice. The whole plant is made into an ointment for treating skin conditions including dermatitis.

The corm is used as a ingredient of genitals steam bath to recuperate the uterus post partum and treat vaginal candidiasis.

14) *Syzygium cumini*

Juice of tender leaves of this plant and leaves of mango and myrobalan are mixed then administered with goat milk and honey to treat dysentery with blood discharge.

The seed is sweet, astringent to the bowels and good for diabetes. The ash of the leaves is used for strengthening teeth and gums.

It is also used in splenic enlargement and an efficient astringent in chronic diarrhea.

15) *Quercus infectoria*

It have been be utilised by malai women for post partum medication.

In India the galls extract has been used for oral care as mouth wash, dental powders and for treatment of tooth ache.

In Jamu oral administration from the galls helps to improve blood flow speed up the contraction of the uterus and tighten the vagina as well as encourage bowel movement.

16) *Punica granatum*

The fruit is used against acidosis, dysentery, microbial infection, diarrhea, haemorrhage, and respiratory pathologies.

Juice of the fruit are beneficial for the treatment of colitis, menorrhagia, piles and allergic dermatitis.

Pomegranates help to prevent or treat various disease risk factors including high blood pressure, high cholesterol, hyperglycemia, and inflammatory activities.

Results:

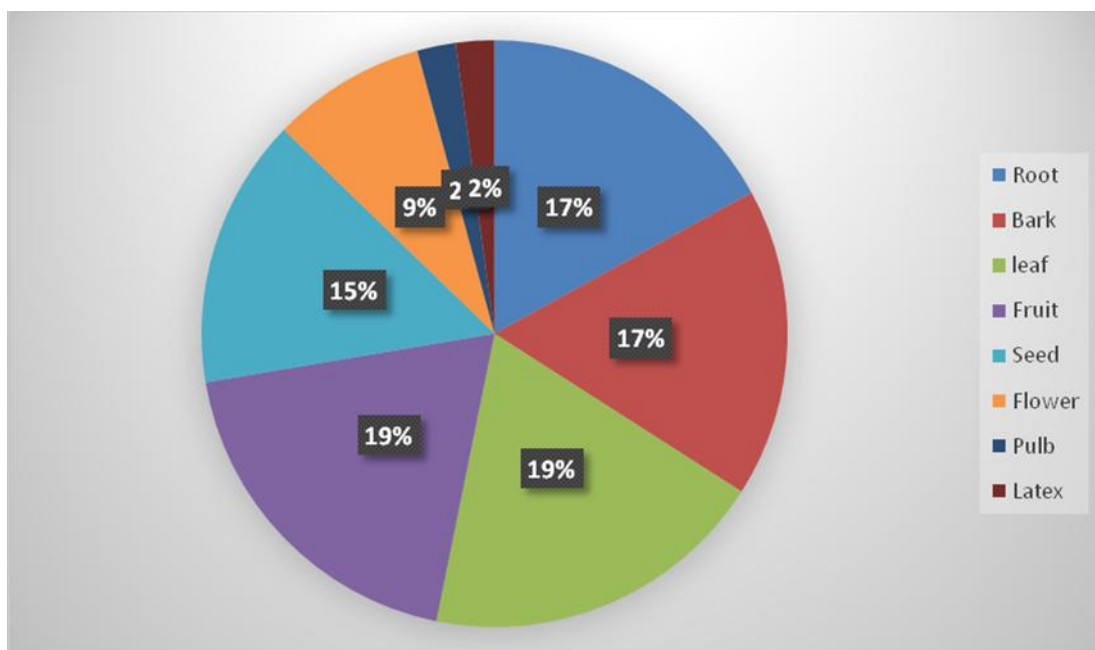


Fig:1 List of medicinal plants parts used for styptic

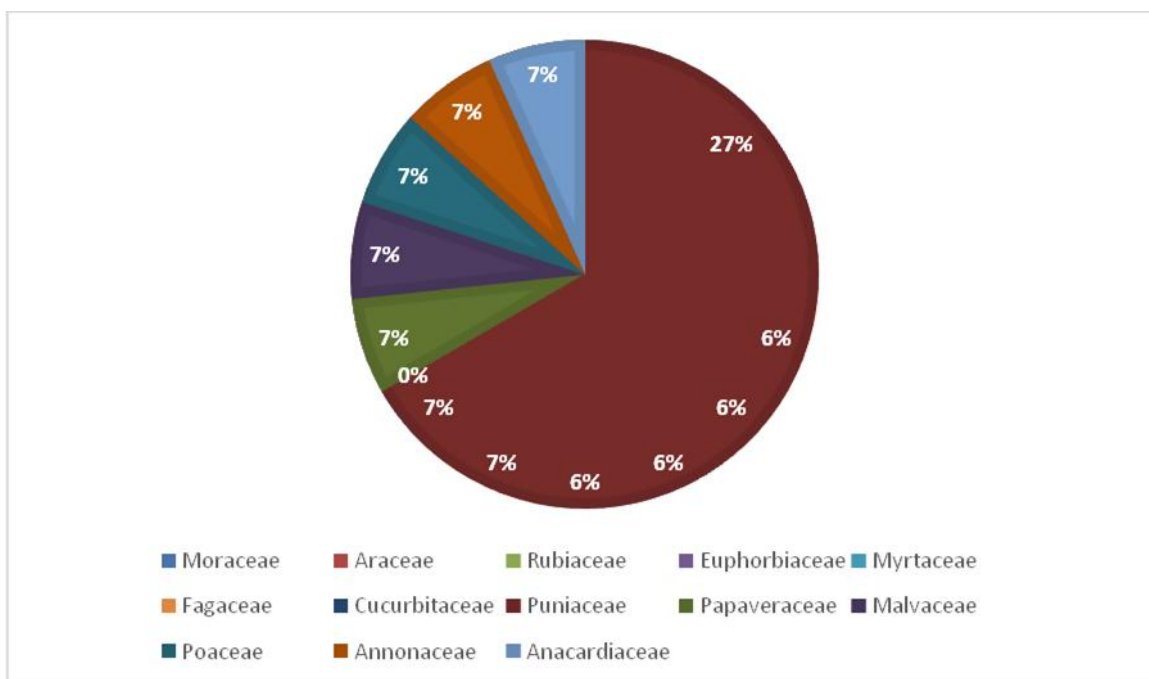


Fig : 2 Family used in classification of herbs these families used in styptic

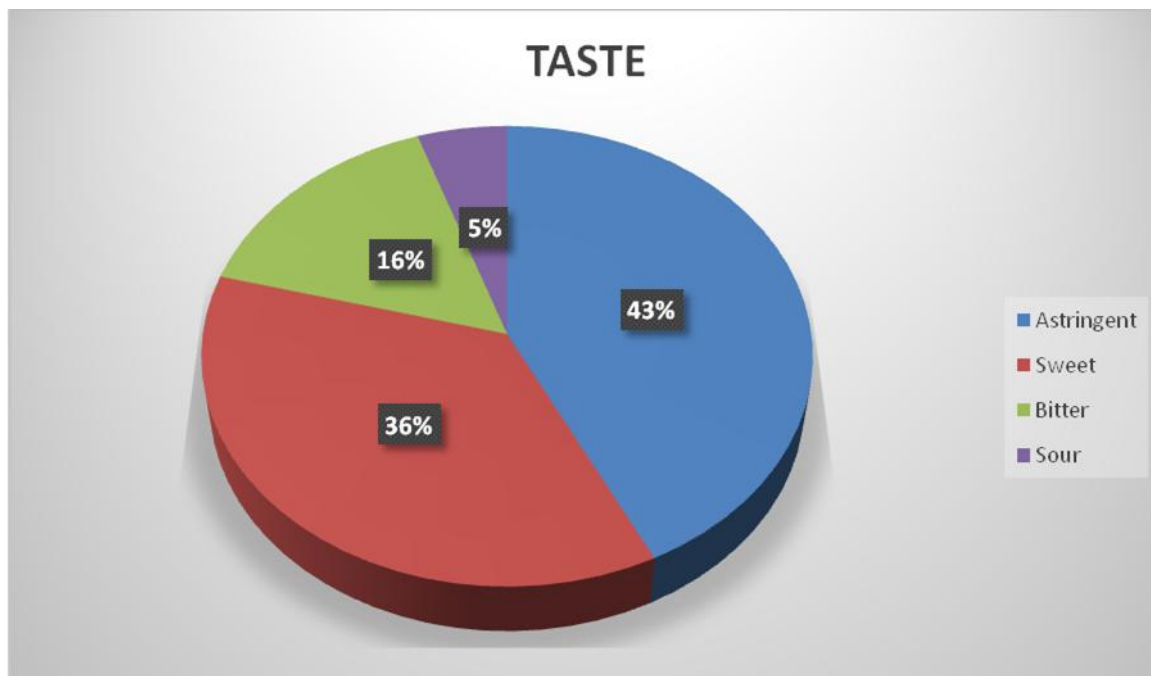


Fig:3 Classification of herbs used in styptic

Conclusion

In this review plant part used for styptic activity, the leaves were most used in 19%, seeds were used in 15%, flower were most used in 9%, Root were most used in 17%, fruits were most used in 19%, Bark were most used in 17%, bulb were most used in 2%, latex were most used in 2%, On taste aspect bitter are used in 16%, Astringent used in 43%, Sweet used in 36%, Sour used in 5%, Styptic activity were seen in these families.

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