

Review

Pharmacodynamic and ethnomedicinal uses of weed speices in nilgiris, Tamilnadu State, India: A review

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Generally, weeds are considered as nuisances in the garden and enemies to the farmer, as there is a misconception that they are useless. Many of the herbs used in Indian traditional medicine and tribal medicine are considered weeds by agriculturists and field botanists (for example, *Phyllanthus amarus* L., *Eclipta alba* L., *Centella asiatica* (L.) etc.). Even though many of these weeds have high ethnopharmacological importance, they are being destroyed and there is a lack of scientific knowledge and guidance. In the Nilgiris many medicinally valuable weeds like *Achyranthes bidentata* Blume., *Artemisia nilagirica* Clarke., *Centella asiatica* L., are very prominent having good therapeutic values like diuretic, antimalarial and brain tonic. The main aim of this review is to expose the important pharmacodynamic and ethnomedicinal values of 50 prominent weeds belongs to 26 different families that grow wild in the Nilgiris. It is possible that some of these weeds could provide an additional income to farmers. There is increasing evidence to support that weeds are relatively high in bioactive molecules thus very important for new drug discovery. Innovative research should be encouraged and scientific workshops conducted by government bodies to communicate the medicinal value of weeds, make weeds economically important and to fill the gap between weeds, farmers and the economy.

Key words: Weeds, pharmacological importance, pharmacodynamic uses, *Silybum marianum* L., *Artemisia parviflora* Roxb.

INTRODUCTION

Weed

A weed may be defined as any plant or vegetation that interferes with the objectives of farming or forestry, such as growing crops, grazing animals or cultivating forest plantations. A weed may also be defined as any plant growing where it is not wanted. For example, a plant may be valuable or useful in a garden, or on a farm or plantation – but if the same plant is growing where it reduces the value of agricultural produce or spoils

aesthetic or environmental values, then it is considered a weed. However, some plants are weeds regardless of where they grow.

There are numerous definitions of a weed. Some common definitions include:

1. A plant that is out of place and not intentionally sown
2. A plant that grows where it is not wanted or welcomed
3. A plant whose virtues have not yet been discovered
4. A plant that is competitive, persistent, pernicious, and

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interferes negatively with human activity. No matter which definition is used, weeds are plants whose undesirable qualities outweigh their good points, at least according to humans. Human activities create weed problems since no plant is a weed in nature. Though we may try to manipulate nature for our own good, nature is persistent. Through manipulation, we control certain weeds, while other more serious weeds may thrive due to favorable growing conditions. Weeds are naturally strong competitors, and those weeds that can best compete always tend to dominate.

Both humans and nature are involved in plant-breeding programs. The main difference between the two programs is that humans breed plants for yield, while nature breeds plants for survival.

Characteristics of weeds

There are approximately 250,000 species of plants worldwide; of those, about 3%, or 8,000 species, behave as weeds. Of those 8,000, only 200 to 250 are major problems in worldwide cropping systems. A plant is considered as weed if it has certain characteristics that set it apart from other plant species.

Weeds possess one or more of the following characteristics that allow them to survive and increase in nature:

1. Abundant seed production
2. Rapid population establishment
3. Seed dormancy
4. Long-term survival of buried seed
5. Adaptation for spread
6. Presence of vegetative reproductive structures
7. Ability to occupy sites disturbed by humans

Problems with weeds

Weeds are troublesome in many ways. Primarily, they reduce crop yield by competing for: water, light, soil nutrients, space, CO₂, reducing crop quality by contaminating the commodity, interfering with harvest, serving as hosts for crop diseases or providing shelter for insects to overwinter, limiting the choice of crop rotation, sequences and cultural practices, producing chemical substances that can be allergens or toxins to humans, animals, or crop plants (allelopathy), producing thorns and woody stems that cause irritations and abrasions to skin, mouths, or hooves of livestock being unsightly, dominant, aggressive, or unattractive obstructing visibility along roadways, interfering with delivery of public utilities (power lines, telephone wires), obstructing the flow of water in water ways, and creating fire hazards, accelerating deterioration of recreational areas, parking lots, buildings and equipment, invading exotic weed species that can displace native species in stabilized

natural areas.

Benefits of weeds

Despite the negative impacts of weeds, some plants usually thought of as weeds may actually provide some benefits, such as: Stabilizing and adding organic matter to soils, providing habitat and feed for wildlife, providing nectar for bees, offering aesthetic qualities, serving as a genetic reservoir for improved crops, providing products for human consumption and medicinal use, creating employment opportunities.

Controversial nature of weeds

Weeds have a controversial nature. But to the agriculturist, they are plants that need to be managed in an economical and practical way in order to produce medicine, food, feed, and fiber for humans and animals. In this context, the negative impacts of weeds indirectly affect all living beings. (<http://www.weeds.psu.edu>).

The term weed in variety of senses

The term weed is used in a variety of senses, generally centering around a plant that is not desired within a certain context. The term weed is a subjective one, without any classification value, since a plant that is a weed in one context is not a weed when growing where it belongs or is wanted. Indeed, a number of plants that many consider "weeds" are often intentionally grown by people in gardens or other cultivated-plant settings. Therefore, a weed is a plant that is considered by the user of the term to be a nuisance. The word commonly is applied to unwanted plants in human-controlled settings, especially farm fields and gardens, but also lawns, parks, woods, and other areas. More vaguely, "weed" is applied to any plants that grow and reproduce aggressively and invasively (Vjanick and Jules, 1979).

Beneficial weeds

Even though weeds may be considered as unwanted for a number of reasons, the most important one is that they interfere with food and fiber production in agriculture, but there are many weeds having ethnomedicinal and pharmacological value, like the phrases in the poem wrote by Gerard Manley Hopkins' "What would the world be, once bereft, of wet and wildness? Let them be left .O let them be left; wildness and wet; Long live the weeds and the wilderness yet." A number of weeds, such as the dandelion (*Taraxacum officinale* F.H.Wigg.) are edible, and their leaves and roots may be used for food or herbal

medicine. Greater Burdock (*Arctium lappais* L.) common weed over much of the world, and is sometimes used to make soup and other medicine in East Asia. These so-called "beneficial weeds" may have other beneficial effects, such as drawing away the attacks of crop-destroying insects, but often are breeding grounds for insects and pathogens that attack other plants. Dandelions are one of several species which break up hardpan in overly cultivated fields, helping crops grow deeper root systems. Some modern species of domesticated flower actually originated as weeds in cultivated fields and have been bred by people into garden plants for their flowers or foliage.

An example of a crop weed that is grown in gardens is the corncockle (*Agrostemma githago* L.) which was a common field weed exported from Europe along with wheat, but now sometimes grown as a garden plant (Baker, 1974). White clover (*Trifolium repens* L.) is considered by some to be a weed in lawns, but in many other situations is a desirable source of fodder, honey and soil nitrogen (Andre, 1988). "Many gardeners will agree that hand-weeding is not the terrible drudgery that it is often made out to be. Some people find in it a kind of soothing monotony. It leaves their minds free to develop the plot for their next novel or to perfect the brilliant repartee with which they should have encountered a relative's latest example of unreasonableness (Christopher, 2001). Weeds have been found to represent a very important component of indigenous pharmacopoeias. The consumption of weedy greens has often been perceived to have a medicinal character (Govindaraj et al., 2011). In ancient Indian literatures all plants were not considered as weeds and it is clearly mentioned that every plant on this earth is useful for human beings, animals and other plants. It is ignorance of human beings as they consider some plants are useful and others as unwanted. Studies conducted by department of Agronomy. (IGAU), Raipur has revealed that weeds are a boon for tile farmers and industries. Uses of weeds of many important agricultural crops have been reported (<http://www.ethnologue.com>).

Nilgiris

The Nilgiri hills located in Western Ghats, Tamilnadu State, India have a history going back for many centuries. It is not known why they were called the Blue Mountains (Table 1). Several sources cite the reason as the smoky haze enveloping the area, while other sources say it is because of the kurunji flower, which blooms every twelve years giving the slopes a bluish tinge. It was originally tribal land and was occupied by the Todas around what is now the Ooty area, and by the Kotas around what is now the Kotagiri (Kothar Keri) area. The Badagas are one of the major non tribal populations in the district who reside in the mountain. Although the Nilgiri hills are mentioned in

the Ramayana of Valmiki (estimated by Western scholars to have been recorded in the second century BCE), they remained all but undiscovered by Europeans until 1602.

Geographical distribution of the Nilgiris district

The district has an area of 2,452.50 km². The district is basically a hilly region, situated at an elevation of 2000 to 2,600 masl. Almost the entire district lies in the Western ghats. Its latitudinal and longitudinal dimensions being 130 km (Latitude: 10° - 38° WP 11-49N) by 185 km (Longitude: 76° E to 77.15° E). The Nilgiris district is bounded by Mysore district of Karnataka and Wayanad district of Kerala in the North, Malappuram and Palakkad districts of Kerala in the West, Coimbatore district of Tamil Nadu in the South and Erode district of Tamil Nadu and Chamarajanagar district of Karnataka in the East. In Nilgiris district the topography is rolling and steep. About 60% of the cultivable land falls under the slopes ranging from 16 to 35%. The altitude of the Nilgiris results in a much cooler and wetter climate than the surrounding plains, so the area is popular as a retreat from the summer heat. The temperature remains to the maximum of 25°C and reaches a minimum of 0°C (Wang et al., 2011).

Tribal communities in Nilgiris

The Nilgiris is gifted with richest flora in which lot of medicinally important plants are present. But many of these plants are considered as weeds or useless plants. But many of these weeds will grow wildly and in cultivated fields. Many of these weeds having ethno medicinal and pharmacodynamic importance but due to lack of proper guidance and scientific documentation, many of these weeds are under destruction due to their short term useless selfish benefits of mankind, but some tribal people like Todas, Kotas, Kurumbas, Paniyas and Kattunayakas are safeguarding this type of plants and using as tribal medicine to cure lot of diseases.

Tribes and weeds of Nilgiris

Todas: *Centella asiatica* (L) Urban (Apiaceae), locally known as "Vallarai". Plant juice is considered as refrigerant to the body, when given orally.

Kotas:

1. *Achyranthes aspera* L. (Amaranthaceae), locally known as "Uthrun". Leaf paste is applied on cuts, wounds and sores for quick healing.
2. *Lantana camara* L. (Verbenaceae), locally known as "Thusik". Leaf juice is applied to the gum to stop

Table 1. Pharmacodynamic and ethnomedicinal uses of weed speices in nilgiris.

Scientific name of the weed	Common name	Family	Major constituents	Pharmacodynamic uses	Ethno medicinal uses
<i>Achyranthes bidentata</i> Blume	Ox Knee	Amaranthaceae	Alkaloids, glycosides, triterpenoids, saponins, flavonoids and mucilage	Antihypertensive agent , Antioxidant	For mosquito bites and as diuretic
<i>Acalypha indica</i> L.	Indian Nettle	Euphorbiaceae	Flavonoids, steroids, terpenoids and pyridone glucosides	In treatment of Myocardial ischemia), as a analgesic and anti- inflammatory activity	Leaf juice use to cure ear problems, drowsiness, and digestive problems and root as tooth brush
<i>Aegeratum conyzoides</i> L.	Goat weed	Asteraceae	Sterols, coumarins, alkaloids and essential oils .	Wound healing , antispasmodic and larvicidal activity	Whole plant as wound healing and mosquito repellent externally
<i>Amaranthus spinosus</i> L.	Spiny amaranth	Amaranthaceae	Betacyanins, phenolic compounds and terpenes	Antitumor activity , anti oxidant, antimalarial, antidiabetic and immunomodulatory	Root and leaf juice promotes digestion
<i>Anthoxanthum odoratum</i> L.	Vernal grass	Poaceae	Coumarins	Nephroprotective and antioxidant activity	As a tincture to act as provocative incase of hay fever and hay asthma
<i>Argemone mexicana</i> L.	Mexican poppy	Papavaraceae	Alkaloids	Analgesic, antimicrobial, antidiabetic, atiarthritic and wound healing.	Flower decoction as a external medical agent in case of eye infections
<i>Artemisia nilagirica</i> Clarke.	Indian worm wood	Asteraceae	Flavanoid, steroids, terpenoids, saponins, tannins, proteins and essential oil.	Antileishmanial activity, antimalarial, anthelmintic, antiseptic, expectorant, astringent, and anti-inflammatory	Leaf and root decoction internally to treat fever and externally as mosquito repellent
<i>Artemisia parviflora</i> Roxb.	Japanese worm wood	Asteraceae	Sterols/ triterpenoids, flavonoids, phenols, saponin, alkaloids, tannins, carbohydrates, coumarins and lignins	Antihypertension, antihelmenthic, antidiabetic and antiviral	Leaf decoction as vermifuge internally and externally as wound healing agent in case of minor cuts and wounds
<i>Asclepias curassavica</i> L.	Scarlet Milkweed	Asclepiadaceae	Glycosides and saponins	Antitumor and anticancer	Leaf paste as a wound healing agent
<i>Bidens biternata</i> (Lour.) Merr.	Spanish needles	Asteraceae	Glycosides, flavonoid, alkaloid, tannin, seroid, terpenoid, coumarin, saponin, athraquinone, phlobatannin and iridoids	Anti-inflammatory, wound healing and as appetizer	Leaf juice in treatment of sores and root paste in case of tooth ache

Table 1. Contd.

<i>Borreria latifolia</i> Aubl.	Broad leaf button weed	Rubiaceae	Alkaloids, Flavanoid, Terpenoids and Iridoids.	Antifungal	Whole plant aqueous decoction to cure intestinal disorders
<i>Brassica juncea</i> (L.) Czern.	Mustard plant	Brassicaceae	Fatty acids, glucosinolate and allyl glucosinolates	Hepatoprotective	Leaf or seed aqueous decoction filtrate as eye drops externally to cure eye diseases (white patches in pupil)
<i>Capsella bursapastoris</i> L.	Shepherds Purse	Brassicaceae	Flavanoids, resins, saponins, amino acids, glucosinolates and glycosides	Anti-hemorrhagic, in treatment of menorrhagia	Leaf decoction to treat Genitor-urinary infections
<i>Centella asiatica</i> (L.) Urb.	Indian pennywort	Umbelliferae	Triterpenoids glycosides, flavanoids, tannins and phytosterols.	Wound and ulcer healing activities	Whole decoction internally as treatment for body swelling and menstrual pain
<i>Cardiospermum halicacabum</i> L.	Ballon wine	Sapindaceae	Saponins, traces of alkaloids, flavanoid, apigenin and phytosterol	Diaphoretic, emetic, laxative and emmenagogue.	Leaf decoction internally to cure cold, cough, fever, head ache and other minor disease
<i>Crassocephalum crepidioides</i> (Benth.) S.Moore.	Fire weed	Asteraceae	Phenols and flavanoid	Antioxidant, laxative, anti cancer and anti-inflammatory	Leaf extracts to treat wounds and inflammations
<i>Chenopodium ambrosioides</i> L.var.	Worm seed	Chenopodiaceae	Terpenoids and saponins	Amebicide, analgesic and vermifuge	Leaf decoction internally to treat stomach and intestinal disorders
<i>Chromolaena odorata</i> (L.) R. king and Rabinson.	Devil weed	Asteraceae	Essential oils, terpenoids, sterols flavanoid and alkaloids	Antispasmodic, antiprotozoal, antitrypanosomal, antibacterial and atihypersensitive , anti-inflammatory and hepatotropic activities	Leaf juice used to treat wounds and insect bites
<i>Cirsium wallichii</i> DC.	Wallichs Thistle	Asteraceae	Flavonoids, sterols, titerpenes, alkaloids	Antitumour activity.	Leaf decoction to treat gastric problem
<i>Commelina benghalensis</i> L.	Tropical Spider wort	Commelinaceae	Phlobatannins, carbohydrates, tannins, glycosides, volatile oils, resins	Cardio active, wound healing and anticancer	Plant decoction to cure worm infections
<i>Dodonea viscosa</i> (L.) Jacq.	Hopbush	Sapindaceae	Tannins, flavonoids, steroids and triterpenes.	Analgesic, anti-inflammatory, antiviral, spasmolytic, laxative, antimicrobial and hypotensive agents	In treatment of bone fractures in animals

Table 1. Contd.

<i>Kalanchoe pinnata</i> (Lam.) Pers.	Miracle leaf	Crassulaceae	Steroidal glycosides, flavonoids, triterpenoids and polyphenols	Antihelmentic, immunosuppressive, wound healing, hepatoprotective and antinociceptive	Raw leaves to treat stomach disorders
<i>Lantana camara</i> L.	Sleeper weed	Verbenaceae	Sterols, glycosides, saponins, carbohydrates, alkaloids, flavanoid,	Antitumor, antibacterial, and antihypertensive agent, roots for the treatment of malaria, rheumatism.	Leaf decoction as deworming agent
<i>Leucas aspera</i> (Wild.) Link.	Common Leucas	Lamiaceae	Triterpenoids, sterols, glucosides, and phenolic compounds.	Antifungal, antioxidant, antimicrobial, antinociceptive and cytotoxic activity.	The leaf decoction used as to cure cold, cough, and skin disorders
<i>Lobelia nicotianaefolia</i> Roth E & S.	Wild tobacco	Lobeliaceae	Alkaloids	Respiratory stimulant, smoking cessation and antiepileptic	Leaf paste is used to treat and cure foul smelling wounds
<i>Melilotus indica</i> L.	Indian sweet clover	Fabaceae	Flavanoids, coumarin glycosides, triterpenes and fatty acids	Emollient, carminative and digestive.	Leaf paste as good emollient, to treat diarrhoea and bowel complaints.
<i>Mirabilis jalapa</i> L.	4° clock flower	Nyctaginaceae	Alkaloids, steroids, flavanoid, saponins, phenol compounds and tannins	Antinociceptive, antibacterial and antioxidant	Leaf paste, externally to cure wounds
<i>Mollugo pentaphylla</i> L.	Carpet weed	Molluginaceae	Flavanoids, glycosides and saponins	Anti- Microbial, anti-Inflammatory, anticancer, hepatoprotective and antipyretic	Whole plant decoction can be used as mild laxative and emmenagogue
<i>Nicandra physaloides</i> (L.) Gaertn.	Apple of peru	Solanaceae	Flavanoids, saponins, carbohydrates, terpenoids and alkaloids	Diuretic and anticancer activities	Leaf paste is used externally to treat wounds.
<i>Oenothera rosea</i> L' Hér. ex Ait.	Rosy evening Primrose	Onagraceae	Carbohydrates, steroids, Glycosides and Tannins	In the treatment of skin diseases, renal and inflammatory diseases, hepatic pain, liver and skin problems as well as anti-diarrheic effect	Aqueous infusion of the leaves has been used in hepatic pains and kidney problems.
<i>Opuntia stricta</i> (Ker-Gawler) Haw.	Noppales/ cactus	Cactaceae	Alkaloids, steroids, saponins and flavonoids	Antiulcer, anti-inflammatory, antiviral and anticancer	For menorrhagia and metrorrhagia, ten ml fruit juice

Table 1. Contd.

					mixed with 10 ml Of rice washed water and a spoonful of sugar is administered twice a day for 3 days till to cure
<i>Oxalis corniculata</i> L.	Sleeping beauty	Oxalidaceae	Carbohydrates and glycosides, phytosterols, phenolic annins, flavonoids, proteins, amino acids and volatile oils	Antibacterial and antiulcer activity	The fresh juice is beneficial for the treatment of anemia, tympanitis, dysentery and piles
<i>Persicaria nepalensis</i> (Meissn.) H.	Nepalese Smart weed	Polygonaceae	Alkaloids, tannins, saponins and flavonoids.	Antibacterial, antifungal and insecticidal activities.	Root decoction in case of vomiting and fever
<i>Plantago erosa</i> ex Roxb.	Plantain	Plantaginaceae	Tannins, diterpenoids and steroids.	Astringent, antitoxic, antimicrobial, demulcent, expectorant, diuretic, anti-inflammatory and analgesic	The leaves as vegetable to treat constipation and also to improve digestion
<i>Plectranthus barbatus</i> Andr.	Indian coleus	Lamiaceae	Flavonoid glucronide and diterpenoids	Antioxidant activity, anticonvulsant, spasmolytic and antihypertensive	Root decoction used as a general tonic for well being
<i>Polygonum chinense</i> L.	Tear thumb	Polygonaceae	Glycosides and flavonoids.	Antihelmenthic and antibacterial	Plant juice is used to treat paralysis, giddiness and quenching thirst
<i>Prinsepia utilis</i> Royle.	Himalayan Cherry	Rosaceae	Hemiterpenoids, fatty acids, hydrocyanic acid and flavanoids	Anti rheumatic and anti diabetic.	Seed oil warmed and massaged twice a day in arthritic pain. The paste of root is applied for healing of cuts, wounds and
<i>Ricinus communis</i> L.	Castor oil plant	Euphorbiaceae	Tannins, saponins, alkaloids, carbohydrates, phenols, flavonoids, sterols and resins (Mary et al., 2011).	Antibacterial, purgative, anti-inflammatory, hepatoprotective, hypoglycemic and insecticidal (Zahir et al., 2010; Mary et al., 2011).	In Nepal, the root juice is used to treat pain and constipation (Ripu et al., 2010)
<i>Rubus ellipticus</i> Smith.	Himalayan Raspberry	Solanaceae	Flavonoids, phenolic compounds and Tannins.	Diabetes, diarrhea, gastralgia, wound healing, dysentery, antifertility, al, analgesic, and epilepsy.	Decoction of this plant as an abortifacient
<i>Rumex nepalensis</i> Sprengel.	Dock weed	Polygonaceae	Anthraquinones, flavonoids and glycosides.	Psychopharmacological, antioxidant, antimicrobial, purgative, antidiarrhoeal and antiviral	Root and leaf paste to treat jaundice

Table 1. Contd.

<i>Sarothamnus scoparius</i> L.	Scotch broom	Fabaceae	Flavanoids, poly phenolics and alkaloids	Antioxidant and antibacterial	Leaf decoction as good diuretic.
<i>Siegesbeckia orientalis</i> L.	Holy herb	Asreraceae	Phenols, tannins, lignans, flavonoids, sterols and phenolic compounds , glycosides and Triterpenoids	Larvicidal, anti-inflammatory and analgesic	Plant decoction to treat various skin diseases
<i>Silybum marianum</i> L.	Mil thistle	Asteraceae	Alkaloids, amino acids, flavonoids, carbohydrates, phenolics, steroids and tannin.	Anti-inflammatory, anticancer, antioxidant and hepatoprotective	Leaf or seed decoction to treat burning pain in anus and in case of jaundice
<i>Stellaria media</i> L.	Chick weed	Caryophyllaceae	Saponin, flavonoids, steroids, triterpenoids, glycosides, and anthocynidine	Antiobesity, anti-inflammatory and antihepatitis B.	Plant juice is used in treatment of skin diseases, bronchitis, rheumatic pains and dysmenorrhoea,
<i>Taraxacum officinale</i> F.H. Wigg.	Dandelion	Asteraceae	Saponins, triterpenes, sterols, phenolics and tannins	Antibacterial, hepatoprotective and mild laxative	Root and leaves powder in treatment of migraine, cardiac complaints, Jaundice, abdominal complaints, as blood purifier and root, used as an antiseptic
<i>Tephrosia purpurea</i> (L.) Pers.	Wild indigo	Fabaceae	Flavoooids, tannins, phenols and anthocyanins	Antioxidant, antiulcer, hepatoprotective and wound healing	The tribal uses the boiled extract of plant is a vermifuge and used to kill the intestinal worms
<i>Tithonia diversifolia</i> (Hemsl.) A.Gray.	Marigold	Asteraceae	Alkaloids, flavanoids, Phlobatanins, Terpenoids and Saponins	Antidiarroheal, antiplasmodial, anti-inflammatory, analgesic and antimicrobial	Plant decoction to treat sore throat and malaria
<i>Trifolium repens</i> L.	White clover	Fabaceae	Phenolics, saponins, flavanoids and cyanogenic glucosides	Antirheumatic, antiscrophulatic, depurative, leucorrhoea and anticestodal	Plant decoction as deworming agent
<i>Urtica parviflora</i> Roxb.	Nettle	Utricaceae	Akaloids, flavanoid, terpenoids, glycosides, saponins and tannins	Wound healing, hepatoprotective, Antioxidant and hypoglycemic activity	The leaves and fresh roots are used for the treatment of fracture, bones, boils, and febrifuge

Table 1. Contd.

<i>Verbascum thapsus</i> L.	Common Mullein	Scrophulariaceae	Flavanoids, saponins, tannins, terpenoids, glycosides, proteins	Antihelmenthic, Antiviral, antiangiogenic and antiproliferative activities.	Leaf paste externally as antiseptic.
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bleeding and to reduce tooth-ache.

3. *Rubia cordifolia* L. (Rubiaceae), locally known as “Sappli Koth”. Decoction of stem is orally administered as a restorative tonic. Root juice is given orally to cure jaundice.

Kurumbas:

1. *A. aspera* L. (Amaranthaceae), locally known as “Nayurvi Geeda”. Decoction of whole plant with root is orally given for ease child birth and to mitigate labour pain.

2. *Ageratum conyzoides* L. (Asteraceae), locally known as “Nasar soppu”. Leaf juice is orally given as a cure for cough and cold.

D) Paniyas: *Oxalis corniculata* L. (Oxalidaceae), locally known as “Pulichen segae. The whole plant extract in water is orally given for piles and also used as a febrifuge.

Kattunayakas:

1. *A. aspera* L. (Amaranthaceae), locally known as “Cherukadalai”. The whole plant with water is made into paste and applied on body to relive sprain ached in the Joints.

2. *Centella asiatica* (L) Urban (Apiaceae), locally known as “Gottala”. Plant extract is orally given to allay toothache.

As a trail, in this review, we are trying to expose the important weeds and their pharmacodynamic importance and to educate the society to prevent

the destruction of these important weeds and can be made them as economically important plants (Rajan et al., 2002).

DISCUSSION

Important weeds in Nilgiris

***Achyranthes bidentata* Blume**
(Amaranthaceae)

Description: A perennial herb grows up to height of 60 to 90 cm. It is hardy to zone 8. It is in flower from August to September, and the seeds ripen from September to October. The flowers are hermaphrodite (have both male and female organs). *Achyranthes* is an erect perennial with slender rambling branches, elliptical leaves, and greenish white flowers on terminal spikes grows up to 1 m tall. It is commonly known as Ox knee and locally known as Nayuruvi, Shiru-kadaladi.

Major constituents: Alkaloids, glycosides, triterpenoids, saponins, flavonoids and mucilage.

Pharmacodynamic uses: Antihypertensive agent, antioxidant (Babu et al., 2011).

Ethnomedicinal uses: In Mizoram (India) the tribes uses leaf paste externally in treatment of leach bites and mosquito bites and the root decoction is used internally as a diuretic (Sharma et al., 2001).

***Acalypha indica* L. (Euphorbiaceae)**

Description: An annual herb to about 80 cm high, having catkin type of inflorescence. It is widespread throughout India, Srilanka and African countries. It has numerous medicinal uses in India and is official in Indian Pharmacopoeia as an expectorant. It is commonly known as Indian nettle, locally known as Poonamayakki, Kuppaimeni.

Major constituents: Flavonoids, steroids, terpenoids (Mouli et al., 2012) and pyridone glucosides (Hungeling et al., 2009).

Pharmacodynamic uses: In treatment of Myocardial ischemia), analgesic and anti-inflammatory activity (Mouli et al., 2012).

Ethnomedicinal uses: In Nilgiris the tribal people uses leaf juice to cure ear problems, drowsiness, and digestive problems. The root of this plant is main source of tooth brush (Oudhia, 1999).

***Ageratum conyzoides* L. (Asteraceae)**

Description: Goat weed is a common tropical annual herbaceous weed. It is an erect softly hairy annual plant which grows up to a height of 2.5 feet. Oppositely arranged leaves are ovate to lance-like, coarsely rounded, and have toothed margin. Numerous pale blue or whitish flower heads are 6 mm across. It is commonly known as

goat weed and locally known as Pumppillu, Appakkoti.

Major constituents: Sterols, coumarins, alkaloids and essential oils (Bhanu, 2011).

Pharmacodynamic uses: Wound healing, antinematocidal, anti-inflammatory, anticoagulant, smooth muscle relaxant, haemostatic, analgesic, antifungal, antibacterial and hypothermic activities (Bhanu, 2011).

Ethnomedicinal uses: The people of Pandalur village, Nilgiris uses the leaf paste externally used as wound healing activity and insect repellent (Govind raj et al., 2011).

***Amaranthus spinosus* L. (Amaranthaceae)**

Description: It is an annual, erect monoecious herb up to 100(-130) cm tall and it is much branched. The stem is terete or obtusely angular, smooth or slightly hairy, and green or variably suffused with purple, having dense cluster of inflorescences. It is commonly known as spiny amaranth, locally known as mullukkeerai.

Major constituents: Alkaloid, terpene, glycoside, sugar, flavanoid and phenol compounds (Jhade et al., 2011).

Pharmacodynamic uses: Antioxidant, antimalarial, antidiabetic and immunomodulatory (Jhade et al., 2011).

Ethnomedicinal uses: The badaga community of Nilgiris uses the root and leaf decoction of this plant to promote digestion (Sathyavathi and Janardhanan, 2007).

***Anthoxanthum odoratum* L. (Poaceae)**

Description: It is a grass grows in tufts and short lived. It can grow up to 100 cm. The stems are 25 to 40 cm (9.8-16 in) tall, with short but broad green leaves 3 to 5 mm (0.12-0.20 in) wide, which are slightly hairy. It flowers from April until June that is quite early in the season, with flower spikes of 4 to 6 cm (1.6-2.4 in) long and distributed in India, China and South Africa. It is commonly known as vernal grass, and locally known as vanilla grass.

Major constituents: Coumarins (Aziz and Islam, 2012).

Pharmacodynamic uses: Nephroprotective and antioxidant activity (Dheeraj et al., 2010).

Ethnomedicinal uses: In west Bengal (India), traditional practitioners uses its tincture as a provocative to hay fever and hay asthma, a medicinal tincture from it is sniffed well into the nose and throat for immediate relief

from congestion (Dheeraj et al., 2010).

***Argemone mexicana* L. (Papaveraceae)**

Description: It is a prickly annual having strong branch grows 60 to 90 cm in height with yellow latex; leaves are simple, sessile and spiny; flowers are bright yellow. It is commonly known as Mexican poppy, and locally known as Mullmothakka.

Major constituents: Alkaloids (Singh et al., 2010).

Pharmacodynamic uses: Antimicrobial, antidiabetic, antiarthritic and wound healing (Charles and Kokati, 2012).

Ethnomedicinal uses: The badaga community in Nilgiris uses the flower decoction externally to treat eye infections (Sathyavathi and Janardhanan, 2007).

***Artemisia nilagirica* Clarke. (Asteraceae)**

Description: It is an aromatic shrub, 1 to 2 m high, yellow or dark red small flowers, grows throughout India in hills up to 2400 m elevation. This medicinal herb is erect, hairy, often half-woody. The stems are leafy and branched. The leaves are pinnately lobed, 5 to 14 cm long, gray beneath. Mugwort blossoms with reddish brown or yellow flowers. The flowers are freely small and stand in long narrow clusters at the top of the stem. It is commonly known as Indian Wormwood, and locally known as Makkipu.

Major constituents: Flavonoids, steroids, terpenoids, saponins, tannins, proteins and essential oil (Devmurari and Jivani, 2010).

Pharmacodynamic uses: Antileishmanial activity, antimalarial, anthelmintic, antiseptic, expectorant, astringent, and anti-inflammatory (Devmurari and Jivani 2010).

Ethnomedicinal uses: The badaga community in Nilgiris uses the leaf and root decoction both externally and internally as mosquito repellent and in treatment of fever (Sathyavathi and Janardhanan, 2007).

***Artemisia parviflora* Roxb. (Asteraceae)**

Description: It is a Perennial shrub growing to 1 m (3ft 3 in). It is hardy to zone 8. It is in flower from August to October, and the seeds ripen from September to October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects. It is commonly known as Japanese worm wood, and locally

known as maccipatri.

Major constituents: Sterols/triterpenoids, flavonoids, phenols, saponin, alkaloids, tannins, carbohydrates, coumarins and lignins (Jitin et al., 2011).

Pharmacodynamic uses: Antihypertension, antihelmenthic, antidiabetic and antiviral (Jitin et al., 2011).

Ethnomedicinal uses: Tribal people in Nilgiris used the Decoction of leaves as vermifuge and leaves juice is used externally on cuts, wounds and skin infections (Srivastava and Nyishi Community, 2010).

***Asclepias curassavica* L. (Asclepiadaceae)**

Description: It is an evergreen perennial sub shrub that grows up to 1 m (3.3 ft) tall and have pale gray stems. The leaves are arranged oppositely on the stems and are lanceolate or oblong-lanceolate shaped ending in acuminate or acute tips. Like other members of the genus, the sap is milky. The flowers are in cymes with 10 to 20 flowers each. They have purple or red corollas and corona lobes that are yellow or orange. Flowering occurs nearly year round. It is commonly known as Scarlet milkweed and locally known as kammalchedi.

Major constituents: Glycosides and saponins (Hemadri et al., 2012).

Pharmacodynamic uses: Antitumor and anticancer (Hemadri et al., 2012).

Ethnomedicinal uses: In Nilgiris, the toda tribes use the leaf paste externally to treat wounds (Rajan et al., 2005).

***Bidens biternata* (Lour.) Merr (Asteraceae)**

Description: It is erect annual herb, up to 1 m. It can be distinguished by the leaves, which are usually 5 to 7 foliolate, the basal pair sometimes further divided. The flowers are yellow, including the ray-florets. It is commonly known as Spanish needles and locally known as mukkuthi.

Major constituents: Glycosides, Flavonoids, Alkaloids, Tannins, Seroids, Terpenoids, Coumarins, Saponins, Athraquinones, Phlobatannins and Iridoids (Sukumaran et al., 2012).

Pharmacodynamic uses: Antiinflammatory, wound healing and as appetizer (Panda, 2000).

Ethnomedicinal uses: In Harayana and Uttarpradesh

states of India, people use leaf juice externally for the treatment of sores and ulcers. Root is used for the treatment of tooth ache (Panda, 2000).

***Borreria latifolia* Aubl. (Rubiaceae)**

Description: A branched herb, prostrate, ascendent or erect, usually branched from the base, stems fleshy, 4-winged, about 75 cm tall; leaves opposite, elliptical, broadest above the middle, tip broadly and shortly pointed, base tapered, variable in size about 2.5 to 5.0 cm long and 2.5 cm wide, thick, hairy on both sides, short leafstalk; leaf base joined with cup-shaped stipules with bristles on edges. Inflorescence in leaf axils, 0.6 to 1.2 cm across, off white, each flower with hairy calyx of four sepals; stamens 4 and stigma forked; flowers throughout the year; fruit hairy, splitting into two pairs to release seeds. It is commonly known as broad leaf button weed, and locally known as Kudalirakki.

Major constituents: Alkaloids, flavonoids, terpenoids and iridoids (Lucia et al., 2012).

Pharmacodynamic uses: Antifungal (Fezan et al., 2007).

Ethnomedicinal uses: In Pandalur village, Nilgiris. The people use the aqueous whole plant extract to cure the intestinal and appendages problems (Govind et al., 2011).

***Brassica juncea* (L.) Czern. (Brassicaceae)**

Description: It is a Perennial herb, usually grown as an annual or biennial, up to 1 m or more tall; branches long, erect or patent; lower leaves petioled, green, sometimes with a whitish bloom, ovate to obovate, variously lobed with toothed, scalloped or frilled edges, lyrate-with 1 to 2 lobes or leaflets on each side; upper leaves sub entire, short petiole, 30 to 60 mm long, 2 to 3.5 mm wide, constricted at intervals, sessile, attenuate into a tapering, seedless, short beak 5 to 10 mm long. Rooting depth 90 to 120 cm. Seeds about 5,660 to 6,000 per 0.01 kg (1/3 oz). It is commonly known as mustard plant and locally known as Kadugu.

Major constituents: Fatty acids, glucosinolate and allyl glucosinolates (Anu et al., 2011).

Pharmacodynamic uses: Hepatoprotective (Anu et al., 2011).

Ethnomedicinal uses: The badagas of Nilgiris uses the leaf or seed aqueous decoction externally to treat eye diseases (White patches in pupil) (Sathyavathi and

Janardhanan, 2007).

***Capsella bursapastoris* L. (Brassicaceae)**

Description: It grows from a rosette of lobed leaves at the base. From the base emerges a stem about 0.2 to 0.5 m tall, which bears a few pointed leaves which partly grasp the stem. The flowers are white and small, in loose racemes, and produce seed pods which are heart-shaped. It is commonly known as shepherds purse and locally known as Mumiri.

Major constituents: Flavanoid, resins, saponins, amino acids, glucosinolates and glycosides (Committee on Herbal Medicinal Products, 2010).

Pharmacodynamic uses: Anti-hemorrhagic, in treatment of menorrhagia (Committee on Herbal Medicinal Products, 2010).

Ethnomedicinal uses: In Indian medicine and Irula tribes of Nilgiris uses leaf juice externally and internally to treat menorrhagia and hemorrhages from renal and genito-urinary tract (Selva et al., 2009).

***Centella asiatica* (L.) Urb. (Umbelliferae)**

Description: It grows in tropical swampy areas. The stems are slender, creeping stolons, green to reddish-green in color, connecting plants to each other. It has long-stalked, green, reniform leaves with rounded apices which have smooth texture with palmately netted veins. The leaves are borne on pericladial petioles, around 2 cm. The rootstock consists of rhizomes, growing vertically down. They are creamish in color and covered with root hairs. The flowers are pinkish to red in color, born in small, rounded bunches (umbels) near the surface of the soil. It is commonly known as Indian pennywort and locally known as Kuthirai kokku or vallrai.

Major constituents: Triterpenoids glycosides, flavanoid, tannins and phytosterols (Thangavel et al., 2011).

Pharmacodynamic uses: Wound healing, mental disorders, antibacterial, antioxidant and anticancer purposes (Thangavel et al., 2011).

Ethnomedicinal uses: The badagas of Nilgiris uses the aqueous whole plant decoction internally incase of body swelling, menstrual pain (Sathyavathi and Janardhanan, 2007).

***Cardiospermum halicacabum* L. (Sapindaceae)**

Description: It is a woody perennial vine distributed

almost globally in the tropics. It is a fast growing vine up to 10 feet. Leaves are trifoliate, up to 4 inches long, with highly lobed leaflets. The plant climb with tendrils and needs some form of support. The small white flowers bloom from summer through fall, flowers are not very showy. The fruit is more interesting, from which the plant gets its common name. It is a brown, thin-shelled, inflated angled capsule up to 3 cm across, containing 3 black seeds each, with a white heart-shaped scar. It is commonly known as balloon wine and locally known as Kottavan.

Major constituents: Steroids, triterpenoids, sugars, alkaloids, phenols, saponins, amino acids, tannins, flavonoids and anthracene glycosides (Maluventhan and Sangu, 2010).

Pharmacodynamic uses: Diuretic, diaphoretic, emetic, laxative and emmenagogue (Maluventhan and Sangu, 2010).

Ethnomedicinal uses: In Pandalur village, Nilgiris. The people use the leaf decoction internally to cure cold, cough, fever, head ache and other minor diseases (Govind et al., 2011).

***Crassocephalum crepidioides* (Benth.) S. Moore. (Asteraceae)**

Description: It is an erect annual slightly succulent herb growing up to 180 cm tall. Its use is widespread in many tropical and subtropical regions, but is especially prominent in tropical Africa. Its fleshy, mucilaginous leaves and stems are eaten as a vegetable, and many parts of the plant have medical uses. Commonly known as fire weed and locally known as Muyalkadhu.

Major constituents: Phenols and flavonoids (Sumi et al., 2011).

Pharmacodynamic uses: Antioxidant, laxative, anti cancer and anti-inflammatory (Odukoya et al., 2007; Chia Chung et al., 2007).

Ethnomedicinal uses: In Pandalur village, Nilgiris. The people use the broad leaf extracts are used to cure cut wounds and other inflammation (Govindraj et al., 2011).

***Chenopodium ambrosioides* L.var. (Chenopodiaceae)**

Description: It is an annual or short-lived perennial plant, growing to 1.2 m tall, irregularly branched, with oblong-lanceolate leaves up to 12 cm long. The flowers are small and green, produced in a branched panicle at the apex of the stem. Commonly known as worm seed and locally known as Kadu soppu.

Major constituents: Saponins, tannins and alkaloids (Adejumo et al., 2011).

Pharmacodynamic uses: Anti-sickling agent (Adejumo et al., 2011).

Ethnomedicinal uses: The badagas of Nilgiris uses leaf decoction internally to treat intestinal worms and stomach disorders (Sathyavathi and Janardhanan, 2007).

***Chromolaena odorata* (L.) R. king and Rabinson. (Asteraceae)**

Description: It is a rapidly growing perennial herb. It is a multi-stemmed shrub to 2.5 m tall in open areas. It has soft stems but the base of the shrub is woody. In shady areas it becomes petiolated and behaves as a creeper, growing on other vegetation. It can then become up to 10 m tall. The plant is hairy and glandular and the leaves give off a pungent, aromatic odour when crushed. The leaves are opposite, triangular to elliptical with serrated edges. Leaves are 4 to 10 cm long by 1 to 5 cm wide. Leaf petioles are 1 to 4 cm long. The white to pale pink tubular flowers are in panicles of 10 to 35 flowers that form at the ends of branches. Commonly known as devil weed and locally known as communist.

Major constituents: Alkaloids, flavanoid, tannins, cardiac glycosides, fats and oils (Larguita et al., 2008).

Pharmacodynamic uses: Antimicrobial and coagulant (Larguita et al., 2008).

Ethnomedicinal uses: In Pandalur village, Nilgiris. The people use Mature leaves used to cure wound healing, leaf extracts used to control mosquito bite and prevent insect bite (Govindraj et al., 2011).

***Cirsium wallichii* DC. (Asteraceae)**

Description: It is an extremely variable plant, 4 to 10 ft tall, with spreading branches. White to purplish-white flower-heads, clustered or solitary, are borne on leafless stalks, or are stalkless. They are 2 to 3.8 cm across, with florets about 1.6 cm. There are lance shaped bracts ending in erect or recurved spines. Stalkless leaves are pinnately lobed, with margins having very long, stout spines. Leaves are hairless above and cottony beneath. Stems are hairy and leafy. Commonly known as Wallich's Thistle and locally known as Bungsee.

Major constituents: Flavanoid, sterols, titerpenes, alkaloids, polyacetylenes, aetylenes, hydrocarbons, sesquiterpene lactones, phenolic acids and lignans (Ingrid et al., 2003).

Pharmacodynamic uses: Antitumour activity (Vijaya et al., 2009).

Ethnomedicinal uses: The leaf decoction is used by chotta bhangal community in western Himalaya to treat gastric problems (Sanjay et al., 2006).

***Commelina benghalensis* L.**

Description: It is an annual or perennial herb. Leaves are ovate to lancolate, 2.5 to 7.5 cm long, 1.5 to 4 cm wide, with parallel venation, entire leaf margins, and pubescence on top and bottom. The leaf sheath is covered in red and sometimes white hairs at the apex which is a primary identification factor for this species. Stems can be erect or crawling along the ground rooting at the nodes or climbing if supported, 10 to 30 cm in height, 20 to 90 cm in length, covered in a fine pubescence and dichotomously branched. Flowers are produced in spathes often found in clusters, funnel shaped, fused by two sides, 10 to 20 mm long, 10 to 15 mm wide, on peduncles 1 to 3.5 mm in length. Aerial flowers are staminate, perfect, and chasmogamous with 3 petals 3 to 4 mm long. The upper two flower petals are blue to lilac in color, with the lower petal lighter in color or white and much less prominent. Seeds are rectangular, 1.6 to 3 mm in length, 1.3 to 1.8 mm wide, brown to black in color, and have a netted appearance. Commonly known as tropical spider wort and locally known as Aduthinthalai.

Major constituents: Phlobatannins, carbohydrates, tannins, glycosides, volatile oils, resins, balsams, flavonoids and saponins (Ibrahim et al., 2010).

Pharmacodynamic uses: Cardio active wound healing and Anticancer (Ibrahim et al., 2010).

Ethnomedicinal uses: The badagas of Nilgiris uses plant decoction internally to cure worm infections (Sathyavathi and Janardhanan, 2007).

***Dodonea viscosa* (L.) Jacq. (Sapindaceae)**

Description: It is a shrub growing to 1 to 3 m (3.3 to 9.8 ft) tall, rarely a small tree to 9 m (30 ft) tall. The leaves are simple elliptical, 4 to 7.5 cm (1.6 to 3.0 in) long and 1 to 1.5 cm (0.39 to 0.59 in) broad, alternate in arrangement, and secrete a resinous substance. The flowers are yellow to orange-red and produced in panicles about 2.5 cm (0.98 in) in length. The fruit is a capsule 1.5 cm (0.59 in) broad, red ripening brown, with two to four wings. Commonly known as hopbush and locally known as morantha.

Major constituents: Tannins, flavanoid, steroids and triterpenes (Venkatesh et al., 2008).

Pharmacodynamic uses: Anti-diarrheal, local anesthetic, smooth muscle relaxant, antidiabetic, anti-ulcer, anti-inflammatory and anti-microbial activities (Venkatesh et al., 2008).

Ethnomedicinal uses: The badagas of Nilgiris uses the stems and leaves externally to treat bone fractures in animals (Sathyavathi and Janardhanan, 2007).

Kalanchoe pinnata (Lam.) Pers. (Crassulaceae)

Description: It is a shrub that grows up to tall of 1.8 m. The pendent flowers are on short, lateral branches on tall, upright, chandelier-like flower stalks. The individual flowers are tubular, 1 inch (2.5 cm) long, enclosed in papery, inflated, green to reddish pink sepals, and have 4 red, narrowly triangular lobes. The flowers dry on the plant and gradually turn a light papery brown color. The leaves have scalloped, dark maroon margins and are green, succulent, opposite, and mostly pinnately compound with 3 to 5 elliptic leaflets. New baby plants can form along the edges of the leaves. Commonly known as miracle leaf and locally known as Runakkalli or Raga kanni.

Major constituents: Steroidal glycosides, flavanoid, triterpenoids and polyphenols (Zhang and Zhang, 2007).

Pharmacodynamic uses: Immunosuppressive, wound healing, hepatoprotective, antinociceptive, anti-inflammatory and antidiabetic, nephroprotective, antioxidant activity, antimicrobial activity, analgesic, and antipyretic (Zhang and Zhang, 2007).

Ethnomedicinal uses: The irular tribes of red hills, Tamilnadu, India eat raw leaves daily in empty stomach to treat stomach ulcers (Francisca and Rajendran, 2012).

Lantana camara L. (Verbenaceae)

Description: It is a low, erect or subscandent, vigorous shrub which can grow to 2 to 4 m in height. The leaf is ovate or ovate oblong, 2 to 10 cm long and 2 to 6 cm wide, arranged in opposite pairs. Leaves are bright green, rough, finely hairy, with serrate margins and emit a pungent odour when crushed. The stem in cultivated varieties is often non-thorny and in weedy varieties with recurved prickles. It is woody, square in cross section, hairy when young, cylindrical and up to 15 cm thick as it grows older. Lantana is able to climb to 15 m with the support of other vegetation. Flower heads contain 20 to 40 flowers, usually 2.5 cm across; the colour varies from

white, cream or yellow to orange pink, purple and red. Commonly known as sleeper weed or wild sage and locally known as karadikke.

Major constituents: Sterols, glycosides, saponins, carbohydrates, alkaloids, flavanoid, tannins, proteins and ti-terpenoids (Jitendra et al., 2011).

Pharmacodynamic uses: Antiseptic, antispasmodic, carminative, diaphoretic, antiinflammatory, antipyretic and analgesic (Jitendra et al., 2011).

Ethnomedicinal uses: The badagas of Nilgiris uses the leaf decoction internally to expel worms and externally to treat cuts and wounds (Sathyavathi and Janardhanan, 2007).

Leucas aspera (Wild.) Link. (Lamiaceae)

Description: It is an annual plant that can reach heights of 15 to 60 cm. The leaves can be obtuse, linear or linearly lanceolate or petiolate. The stem quadrangular and contains a wide stele. The epidermis of the stem is covered in a thick waxy cuticle and contains few traversed stomata. The roots contain epidermal cells which are very narrow and closely packed together. It is commonly known as common leucas and locally known as thumbaigidu.

Major constituents: Triterpenoids, sterols, glucosides, and phenol compounds (Prajapati et al., 2010).

Pharmacodynamic uses: Antifungal, antioxidant, antimicrobial, antinociceptive and cytotoxic Activity (Prajapati et al., 2010).

Ethnomedicinal uses: In Pandalur village, Nilgiris, the people uses leaf decoction used as to cure cold, cough, and skin disorders. Healthy leaves are used for the curry preparation (Govindaraj et al., 2011).

Lobelia nicotianaefolia Roth E & S. (Lobeliaceae)

Description: It is a tall, erect, much branched, somewhat hairy herb, which grows to 1.5 to 3 m in height. The leaves, resembling those of tobacco, are narrowly obovate-lanceolate, the lower ones being 30×5 cm, while the upper ones gradually become smaller. The flowers are large, white, and borne in terminal racemes 30 to 50 cm long. Flowers are 3 to 4 cm long, two-lipped. The sepal is smooth or hairy, narrow, about 1.2 cm long. The capsules are 2-celled, somewhat rounded, and about 1.5 cm in diameter. The seeds are numerous very small, ellipsoids and compressed. It is commonly known as wild tobacco and locally known as upperichedi.

Major constituents: Alkaloids (Abrar et al., 2012).

Pharmacodynamic uses: Respiratory stimulant, smoking cessation and antiepileptic (Arbar et al., 2012).

Ethnomedicinal uses: The kurichiar tribes of wayanad district, Kerala, uses Leaf paste mixed with a pinch of lime is applied to foul smelling wounds for speedy healing (Udayan et al., 2008).

***Melilotus indica* L. (Fabaceae)**

Description: It is an annual herb, sprawling in the absence of a crop, but erect in crops such as wheat. The stem is thin and wiry when mature. A characteristic feature is the appearance of anthocyanin coloring in the form of a red stripe along the midrib of the leaflets which disappears at the time of flowering. The inflorescence is a dense raceme arising from leaf axils, 2 to 3 cm long with 15 to 50 flowers on a short peduncle 1.5 to 2 cm long. Flowers 2 to 2.5 mm long, yellow or pale-yellow, of typical leguminous structure. It is commonly known as Indian sweet clover and locally known as vana methika.

Major constituents: Flavanoid, coumarin glycosides, triterpenes and fatty acids (Suhail et al., 2012).

Pharmacodynamic uses: Emmolient, carminative and digestive (Suhail et al., 2012).

Ethnomedicinal uses: In Margallah hills (Pakistan), people uses plant paste traditionally leaf as Emollient, in treating swelling, and internally to treat diarrhoea, bowl complaints (Asma et al., 2009).

***Mirabilis jalapa* L. (Nyctaginaceae)**

Description: It is a long-lived (perennial) herb growing up to 2 m high, with a tuberous root. Its leaves are egg-shaped in outline with broad end at base (ovate), oblong, or triangular, measuring to 9 cm long.; the leaf tip is acute, base cordate. The leaf stalk (petiole) is 4 cm long. Flowers of occur in groups of 3 to 7; flower stalks more or less absent; flowers are fragrant and open in the afternoon; flowers are tubular, white, pink or red in color, up to 6.5 long by 3.5 wide with 5 to 6 stamens. The fruit is a small, one-seeded capsule (anthocarp). It is commonly known as Four O clock flower and locally known as tolahoo.

Major constituents: Alkaloids, steroids, flavonoids, saponins, phenol compounds and tannins (Subin et al., 2012).

Pharmacodynamic uses: Antinociceptive, antibacterial

and antioxidant activities (Subin et al., 2012).

Ethnomedicinal uses: The badagas of Nilgiris uses the leaf paste externally to cure wounds (Sathyavathi and Janardhanan, 2007).

***Mollugo pentaphylla* L. (Molluginaceae)**

Description: It is Annual herb up to 24 cm tall. Stem and branches slender, glabrous. Leaves cauline and ramal, pseudo-vericillate, 1.2 to 4.0 cm long, 1.5 mm broad, elliptic lanceolate. Sepals 1.5 to 2 mm long, elliptic ovate. Stamens 5, antisepalous, c. 1.2 mm long; filaments dilated at the base, anthers less than 1 mm long, basifixed, dehiscing longitudinally. Ovary sub-globose, c. 1.5 mm broad, Fruit c. 9 mm broad, membranous. Seed less than 1 mm long, granulate dark brown. It is commonly known as carpet weed and locally known as kuttuttiray.

Major constituents: Flavanoid, glycosides and saponins (Valarmathi et al., 2010).

Pharmacodynamic uses: Anti-microbial, anti-inflammatory, anti-cancer, hepatoprotective and antipyretic (Valarmathi et al., 2010).

Ethnomedicinal uses: In India, the whole plant is used as a mild laxative medicine, stomachic, antiseptic and emmenagogue, while a decoction of the roots is used to treat eye diseases (Valarmathi et al., 2010).

***Nicandra physaloides* (L.) Gaertn. (Solanaceae)**

Description: Plants grow to 1 m tall and are vigorous with spreading branches and ovate, mid-green, toothed and waved leaves. The flowers are bell-shaped and 5 cm or more across, pale violet with white throats. The flower becomes lantern-like towards the end of its bloom. It is commonly known as apple of peru and locally known as Ummathakkai.

Major constituents: Flavanoid, saponins, carbohydrates, terpenoids and alkaloids (Devi et al., 2010).

Pharmacodynamic uses: Diuretic and anticancer activities (Devi et al., 2010).

Ethnomedicinal uses: The badagas of Nilgiris uses the leaf paste externally to cure wounds (Sathyavathi and Janardhanan, 2007).

***Oenothera rosea* L' Hér. ex Ait. (Onagraceae)**

Description: It is an annual herb grows up to 2 ft (60 cm)

tall. The flowers open at sunrise, are less than 1 inch (2.5 cm) wide, and have cream-colored anthers and 4 egg-shaped petals with conspicuous darker veins. The flowers fade to a dark pink color and are followed by club-shaped seed capsules that are widest near the tip. The leaves are both in a basal rosette and on the stems, and they are green, alternate, hairless to sparsely hairy, variably wavy-toothed, and elliptic or oblanceolate in shape. The lower leaves are sometimes pinnatifid at the base. The multiple stems are green, hairy, branched or not, and erect to ascending. It is commonly known as rosy evening – primrose and locally known as Mexican rose.

Major constituents: Carbohydrates, steroids, glycosides and tannins (Sumitra et al., 2012).

Pharmacodynamic uses: In treatment of hepatic pain, liver and skin problems and anti-diarrheic effect (Andrade-Cetto, 2009).

Ethnomedicinal uses: In the Himalayas. traditionally, the aqueous infusion of the leaves has been used in hepatic pains and kidney problems (Sumitra et al., 2012).

***Opuntia stricta* (Ker-Gawler) Haw (Cactaceae)**

Description: It is a shrub or tree up to 5 m tall, forming sturdy trunk with age. Joints flattened, narrowly elliptic to ovate, varying in size, 30 to 60 cm long and 6 to 12 cm broad, attenuate below, often acute above, fairly thick, glaucous-green; areoles small to large, raised and woolly, with 3 to 6 radiating, unequally long, greyish white spines up to 3 (-10) cm long, straight or occasionally slightly curved, or spineless (in older plants and some cultivars). Leaves, if developed, are minute, subulate and early deciduous. Flowers about 7 cm long; hypanthium broadly cylindrical, contracted below, with numerous raised areoles spirally arranged, densely woolly and filled with glochidia, occasionally also bearing small spines and minute leaves; petaloid segments yellow or orange. Fruits ellipsoid, about 7 cm long, reddish, succulent, edible. Seeds are about 5 mm long. It is commonly known as noppales and locally known as nagakalli.

Major constituents: Alkaloids, steroids, saponins and flavanoid (Naod and Tsige, 2012).

Pharmacodynamic uses: Antiulcer, anti-inflammatory, antiviral and anticancer (Naod and Tsige, 2012).

Ethnomedicinal uses: The tribals of Sudi Konda Forest, East Godavari District, Andhra Pradesh used to treat for menorrhagia and metrorrhagia, 10 ml fruit juice mixed with 10 ml Of rice washed water and a spoonful of sugar is administered twice a day for 3 days till to cure (Aniel et

al., 2012).

***Oxalis corniculata* L. (Oxalidaceae)**

Description: It is a annual/perennial growing to 0.1 m (0ft 4 in) by 0.3 m (1 ft). It is a somewhat delicate-appearing, low-growing, herbaceous plant. It has a narrow, creeping stem that readily roots at the nodes. The trifoliate leaves are subdivided into three rounded leaflets and resemble a clover in shape. Some varieties have green leaves, while others, have purple. The leaves have inconspicuous stipules at the base of each petiole.

The fruit is a narrow, cylindrical capsule, 1 to 2 cm long and noteworthy for its explosive discharge of the contained, 1 mm long seeds. It is commonly known as sleeping beauty and locally known as Kunnaullumajigai.

Major constituents: Carbohydrates glycosides, phytosterols, phenol compounds, tannins, flavanoid, proteins, amino acids and volatile oils (Raghvendra et al., 2009).

Pharmacodynamic uses: Antibacterial and antiulcer activity (Raghvendra et al., 2009).

Ethnomedicinal uses: In Jarkhand, India the people uses fresh juice internally to treat anemia, tympanitis, dysentery and piles (Hari et al., 2012).

***Persicaria nepalensis* (Meissn.) H. (Polygonaceae)**

Description: A slender spreading or procumbent annual herb, rooting at the lower nodes. Stem pale green, greenish-brown or red to bright red, ascending up to 50 cm, glabrous or with scattered gland-tipped hairs, these more numerous below the ocrea. Leaf lamina with the upper part 0.5-6 × 0.5-3 cm, ovate to ovate-deltate, acute at the apex, tapering or abruptly contracted and decurrent below for up to 1.5 cm forming a false petiole with auricles at the base, glabrous or with scattered hairs, gland-dotted beneath. Ocrea brown, membranous, 6 to 8 mm long, entire at the apex. Flowers in small, pedunculate heads 6 to 9 mm in diameter; heads solitary or paired, c. 12-flowered, subtended by a sessile involucre leaf; peduncles up to 5 cm long, with deflexing glandular hairs below the inflorescence; bracts hyaline, 3.5-5 × 1.5-2.5 mm, broadly lanceolate to ovate. It is commonly known as Nepalese smartweed or knotweed and locally known as Actalaree.

Major constituents: Alkaloids, tannins, saponins and flavanoid (Faraz et al., 2003).

Pharmacodynamic uses: Antibacterial, antifungal and insecticidal activities (Farrukh et al., 2010).

Ethnomedicinal uses: In Nilgiris, the badaga community uses the root decoction internally to treat fever and vomiting as a home remedy (Sathyavathi and Janardhanan, 2007).

Plantago erosa ex Roxb. (Plantaginaceae)

Description: It is a sub shrub growing to 60 cm (23.5 in) tall. The leaves are sessile, but have a narrow part near the stem which is a pseudo-petiole. They have three or five parallel veins that diverge in the wider part of the leaf. Leaves are broad or narrow, depending on the species. The inflorescences are borne on stalks typically 5 to 40 cm (2.25 to 15.75 in) tall, and can be a short cone or a long spike, with numerous tiny wind-pollinated flowers. Commonly known as plantain and locally known as nelavarikke.

Major constituents: Tannins, diterpenoids and steroids (Baural et al., 2011).

Pharmacodynamic uses: Astringent, antitoxic, antimicrobial, demulcent, expectorant, diuretic, anti-inflammatory and analgesic (Baural et al., 2011).

Ethnomedicinal uses: In Nilgiris, the badaga community uses the whole plant juice uses externally and internally to treat muscle pains (Sathyavathi and Janardhanan, 2007) and the Adi tribe of Arunachal Pradesh, India uses the leaves as vegetable to treat constipation and also to improve digestion (Srivastava and Adi community, 2009).

Plectranthus barbatus Andr. (Lamiaceae)

Description: It is a densely hairy perennial herb, with pale blue flowers arranged in whorls, forming long leafless interrupted spikes. Flowers are up to 2 cm long, tube bent abruptly downward, longer than the sepal cup. Flowers are 2-lipped, the upper lip short, turned back, 3-lobed, the lower much longer, boat-shaped, pointed. Sepal cup is hairy, bell-shaped, with lance shaped, prickly-tipped sepals. Bracts are broadly ovate, pointed, overlapping in bud, soon falling. Leaves are ovate to oblong, blunt, rounded-toothed, short-stalked, 5 to 8 cm long. They are arranged in opposite pair's perpendicular to each other, along a 1 to 3 ft tall stem. It is commonly known as Indian coleus and locally known as karpuravalli.

Major constituents: Flavonoid glucuronide and diterpenoids (Porfírio et al., 2010).

Pharmacodynamic uses: Antioxidant activity, acetyl cholinesterase Inhibition, anticonvulsant, spasmolytic and antihypertensive (Porfírio et al., 2010).

Ethnomedicinal uses: Kothas, the native tribes of

Trichigadi in Nilgiris, South India consider the decoction of tuberous roots as tonic for well being (Rakshapal et al., 2011).

Polygonum chinense L. (Polygonaceae)

Description: The genus primarily grows in northern temperate regions. They vary widely from prostrate herbaceous annual plants under 5 cm high, others erect herbaceous perennial plants growing from 3 to 4 m tall and yet others perennial woody vines growing from 20 to 30 m high in trees. Several are aquatic, growing as floating plants in ponds. The smooth-edged leaves range from 1 to 30 cm long, and vary in shape between species from narrow lanceolate to oval, broad triangular, heart-shaped, or arrowhead forms. The stems are often reddish or red-speckled. The small flowers are, pink, white, or greenish, forming in summer in dense clusters from the leaf joints or stem apices. It is commonly known as tear thumb and locally known as Kappu annu gidu.

Major constituents: Flavones and flavanones, phenol compounds and tannins (Shu et al., 2012).

Pharmacodynamic uses: Antihelmenthic (Shu et al., 2012).

Ethnomedicinal uses: In Nilgiris, the badaga community uses the whole plant juice internally to treat paralysis, giddiness, quenching thirst (Sathyavathi and Janardhanan, 2007).

Prinsepia utilis Royle. (Rosaceae)

Description: It is a spiny shrub, growing up to 1 to 5 m tall. Branches are grayish green, robust, branchlets green to grayish green, angled, brown velvety to hairless. Spines are up to 3.5 cm long. Winter buds are purplish red, ovoid to oblong, hairless. Leaf stalks are about 5 mm long. Leaf blade is oblong to ovate-lance shaped, 3.5 to 9 cm long, 1.5 to 3 cm wide, base broadly wedge-shaped to rounded, margin toothed, tip pointed to long pointed. Flowers are borne in racemes in leaf axils, or on short branchlets, 3 to 6 cm, many-flowered. Flowers are 1 cm in diameter. Flower- stalks are 4 to 8 mm, up to 1 cm in fruit. Flower base is cup-shaped, outside brown velvety. Commonly known as Himalayan cherry and locally known as cherara.

Major constituents: Hemiterpenoids, fatty acids, hydrocyanic acid and flavanoid (Jun et al., 2006).

Pharmacodynamic uses: Anti rheumatic and anti diabetic (Umar et al., 2008).

Ethnomedicinal uses: In Garhwal, Himalayas, seed oil

warmed and massaged twice a day in arthritic pain. The paste of root is applied for healing of cuts, wounds and boils.

***Ricinus communis* L. (Euphorbiaceae)**

Description: It is a fast-growing, suckering perennial shrub that can reach the size of a small tree (around 12 m or 39 feet), but it is not cold hardy. The glossy leaves are 15 to 45 cm (5.9 to 18 in) long, long-stalked, alternate and palmate with 5 to 12 deep lobes with coarsely toothed segments. In some varieties they start off dark reddish purple or bronze when young, gradually changing to a dark green, sometimes with a reddish tinge, as they mature. The leaves of some other varieties are green practically from the start, whereas in yet others a pigment masks the green colour of all the chlorophyll-bearing parts, leaves, stems and young fruit, so that they remain a dramatic purple-to-reddish-brown throughout the life of the plant. The flowers are borne in terminal panicle-like inflorescences of green or, in some varieties, shades of red monoecious flowers without petals. The male flowers are yellowish-green with prominent creamy stamens and are carried in ovoid spikes up to 15 cm (5.9 in) long; the female flowers, born at the tips of the spikes, have prominent red stigmas. It is commonly known as castor oil plant and locally known as Aamanakku.

Major constituents: Tannins, saponins, alkaloids, carbohydrates, phenols, flavonoids, sterols and resins (Mary et al., 2011).

Pharmacodynamic uses: Antibacterial, purgative, anti-inflammatory, hepatoprotective, hypoglycemic and insecticidal (Mary et al., 2011).

Ethnomedicinal uses: In Nilgiris, the tribal people use the seed decoction in treatment of stomach pain and dysentery and externally the seed oil is applied over skin to remove black scars (Sathyavathi and Janardhanan, 2007).

***Rubus ellipticus* Smith. (Rubiaceae)**

Description: It is a stout evergreen shrub with prickly stem that grows approximately 4.5 m tall. Its stems are covered with prickles and reddish hairs. Leaves are alternate and compound with three round to blunt leaflets of 5 to 10 cm long. The underside of the leaves is lighter than the upper surface and covered with downy hairs. The flowers are small and white with five petals. The fruit is a round yellow cluster of droplets which is easily detached from the receptacle. It is commonly known as yellow Himalayan raspberry and locally known as Tuppa muli.

Major constituents: Flavonoids, phenolic compounds and tannins (Vadivelan et al., 2009).

Pharmacodynamic uses: Diabetes, diarrhea, gastralgia, wound healing, dysentery, antifertility, analgesic, and epilepsy (Vadivelan et al., 2009).

Ethnomedicinal uses: The tribal of Nilgiris uses the decoction of this plant as an abortifacient (Vadivelan et al., 2000).

***Rumex nepalensis* Sprengel. (Polygonaceae)**

Description: A stout, perennial herb up to 1.8 m tall. Stems green to greenish-brown, hollow, glabrous, striate. Leaf lamina 25–45 × 7–9 cm, oblong-lanceolate to linear-lanceolate, obtuse or rounded at the apex, cuneate at the base, entire or crisped on the margin, glabrous or with scattered papillae on the undersurface, the upper leaves smaller; petiole of basal leaves 13 to 30 cm long. Flowers hermaphrodite, pedicellate, pendulous, in whorls borne in terminal racemose panicles; the basal whorls in the axils of foliaceous bracts; pedicels filiform, articulated near the base. Commonly known as dock weed and locally known as gongu.

Major constituents: Anthraquinones, flavonoids and glycosides (Surjeet et al., 2010).

Pharmacodynamic uses: Psychopharmacological, antioxidant, antimicrobial, antidiarrhoeal and Muscle relaxant (Surjeet et al., 2011).

Ethnomedicinal uses: In Nilgiris, the root and leaves paste is taken internally to treat jaundice (Sathyavathi and Janardhanan, 2007).

***Sarothamnus scoparius* L. (Fabaceae)**

Description: It typically grow to 1 to 3 m (3–9 ft) tall, rarely to 4 m (13 ft), with main stems up to 5 cm (2 in) thick, rarely 10 cm (4 in). The shrub have green shoots with small deciduous trifoliate leaves 5 to 15 mm long, and in spring and summer is covered in profuse golden yellow flowers 20 to 30 mm from top to bottom and 15 to 20 mm wide. Flowering occurs after 50 to 80 growing degree days. In late summer, its legumes (seed pods) mature black, 2 to 3 cm long, 8 mm broad and 2 to 3 mm thick; they burst open, often with an audible crack, forcibly throwing seed from the parent plant. It is commonly known as Scotch broom and locally known as kothikeerai.

Major constituents: Phenolics, tannins and flavanoid (Jayabalan et al., 2008).

Pharmacodynamic uses: Antioxidant and anti-stress (Jayabalan et al., 2008).

Ethnomedicinal uses: In Nilgiris, the tribes use the leaf decoction internally as a good diuretic (Sathyavathi and Janardhanan, 2007).

***Siegesbeckia orientalis* L. (Asteraceae)**

Description: It is an annual herb growing to 1.2 m (4 ft). The flowers are hermaphrodite (have both male and female organs). Leaves ovate, florets in solitary, axillary or terminal, heterogamous head, fruit achene and obovoid. It is commonly known as Holy herb and locally known as kadambu.

Major constituents: Phenols, tannins, lignans, flavonoids, sterols, phenolic compounds, glycosides and Triterpenoids (Geetha and Gopal, 2011).

Pharmacodynamic uses: Larvicidal, anti-inflammatory and analgesic (Geetha and Gopal, 2011).

Ethnomedicinal uses: In Nilgiris, the tribal people use the plant extract externally to treat various skin infections (Sasikumar et al., 2007).

***Silybum marianum* (L.) Gaertn (Asteraceae)**

Description: It grows 30 to 200 cm tall, having an overall conical shape with a approx. 160 cm max. diameter base. The stem is grooved and more or less cottony, and with the largest specimens the 'trunk' is hollow. The leaves are oblong to lanceolate. They are either lobate or pinnate, with spiny edges. They are hairless, shiny green, with milk-white veins. The flower heads are 4 to 12 cm long and wide, of red-purple colour. They flower from June to August in the North or December to February in the Southern Hemisphere (Summer through Autumn). The bracts are hairless, with triangular, spine-edged appendages, tipped with a stout yellow spine. The achenes are black, with a simple long white pappus, surrounded by a yellow basal ring. Commonly known as milk thistle and locally known as dudh patra.

Major constituents: Alkaloids, amino acids, flavonoids, carbohydrates, phenolics, steroids and tannin (Bilani et al., 2006).

Pharmacodynamic uses: Anti-inflammatory, anticancer, antioxidant and hepatoprotective (Bilani et al., 2006).

Ethnomedicinal uses: In Nilgiris, Kattunayakas tribes use the leaves and seed decoction internally to treat burning pain in anus and jaundice pain (Selvaraj et al.,

2009).

***Stellaria media* L. (Caryophyllaceae)**

Description: It is an annual herb growing to 0.1 m (0ft 4in) by 0.5 m (1ft 8in). Cotyledons are ovate, 1-12 mm long by 0.25-2 mm wide, with a slender reddish hypocotyl that is sparsely hairy, stems are usually running prostrate along the ground, rooting at the nodes, with the upper portion erect or ascending and freely branching. Stems are light green in color and with hairs in vertical rows. Fruits are oval, one-celled capsule, whitish in color, containing numerous seeds and flowers are alone or in small clusters at the ends of stems. Flowers are small (3-6 mm wide) and consist of 5 white petals that are deeply lobed, giving the appearance of 10 petals. It is commonly and locally known as chick weed.

Major constituents: Saponin, flavonoids, steroids, triterpenoids, glycosides, and anthocynidine (Chidrawar et al., 2011).

Pharmacodynamic uses: Antiobesity, anti-inflammatory and antihepatitis B (Chidrawar et al., 2011).

Ethnomedicinal uses: In Dibrugarh District (Assam, India). The whole plant paste and decoction is used externally and internally in treatment of skin diseases, bronchitis, rheumatic pains and dysmenorrhoea (Dilip et al., 2005).

***Taraxacum officinale* F.H. Wigg. (Asteraceae)**

Description: It grows from generally unbranched taproots and produces one to more than ten stems that are typically 5 to 40 cm tall but sometimes up to 70 cm tall. The stems can be tinted purplish and produce flower heads that are held as taller than the foliage; the stems can be glabrous or are sparsely covered with short hairs. It is commonly known as Dandelion and locally known as Kanphul.

Major constituents: Saponins, triterpenes, sterols, phenolics and tannins (Oseni and Yussif, 2012).

Pharmacodynamic uses: Antibacterial, hepatoprotective and mild laxative (Oseni and Yussif, 2012).

Ethnomedicinal uses: The Irula and Kurumba tribes of Niligiris use the fresh plant juice internally against liver diseases and intermittent fevers (Selvaraj et al., 2009).

***Tephrosia purpurea* (L.) Pers. (Fabaceae)**

Description: A small spreading perennial herb grows up

to 50 cm in height. Leaves compound, imparipinnate, with 11 to 21 leaflets, oblong-lanceolate, small; flowers red or purple, in axillary racemes. Fruits pod, containing 4 to 8 seeds. It is commonly known as wild indigo and locally known as kavali.

Major constituents: Flavanoid, tannins, phenols and anthocyanins (Shivaraj and Khobragade, 2011).

Pharmacodynamic uses: Antioxidant, antiulcer, hepatoprotective and wound healing (Shivaraj and Khobragade, 2011).

Ethnomedicinal uses: In Jharkhand, India, the tribal uses the boiled extract of plant is a vermifuge and used to kill the intestinal worms (Hari et al., 2012).

***Tithonia diversifolia* (Hemsl.) A.Gray. (Asteraceae)**

Description: It is 2 to 3 m (6.6–9.8 ft) in height with upright and sometimes ligneous stalks in the form of woody shrubs. The large, showy flowers are yellow to orange colored and 5 to 15 cm wide and 10 to 30 cm long. Leaves are sub-ovate, serrate, acute, 10 to 40 cm long, simply or mostly 3 to 7 lobed, somewhat glandular, and slightly grayish beneath. The seeds are achenes, 4-angled, and 5 mm long seeds are spread by wind. It is commonly known as tree marigold and locally known as Kattu suryakanthi.

Major constituents: Alkaloids, flavanoids, phlobatanins, terpenoids and saponins (Ezeonwumelu et al., 2012).

Pharmacodynamic uses: Antidiarrhoeal, antiplasmodial, anti-inflammatory, analgesic and antimicrobial (Ogundare, 2007).

Ethnomedicinal uses: In Nigeria, the decoctions of its various parts are used for the treatment of malaria, diabetes mellitus, sore throat, liver and menstrual pains (Ogundare, 2007).

***Trifolium repens* L. (Fabaceae)**

Description: This perennial plant is about 6" tall, branching from the base. Initially, it produces several compound leaves from a short stem that grows only a little, after which this stem rapidly elongates and becomes up to 1' long. These elongated stems sprawl along the ground and have the capacity to root at the nodes. They are hairless and light green. The alternate compound leaves are trifoliate and hairless. They occur at intervals along the elongated stems and have long hairless petioles. The leaflets are obovate or ovate. Their margins are finely serrate. Across the upper surface of each leaflet are white markings in the form of a chevron

(an upside down "V"), although for this species these markings are often degenerate, irregular, or absent. Each leaflet is about $\frac{3}{4}$ " long and about half as wide. At the base of each petiole there are a pair of small lanceolate stipules that are light green and membranous; sometimes they wrap around the elongated stems. Each stipule is less than $\frac{1}{2}$ " in length. It is commonly and locally known as white clover.

Major constituents: Phenolics, saponins, flavanoids and cyanogenic glucosides (Agnieszka and Maria, 2011).

Pharmacodynamic uses: Antirheumatic, antiscrophulatic, depurative, leucorrhoea and anticestodal (Agnieszka and Maria, 2011).

Ethnomedicinal uses: The naga tribes of India use the whole plant decoction as deworming agent (Hornoy et al., 2012).

***Urtica parviflora* Roxb. (Utricaceae)**

Description: An erect biennial herb grows up to 60 cm in height. Leaves are solitary, alternate, dentate, chordate base, with minute hairs, which produce intense itching when touched. Flowers are minute, greenish yellow, seen in long axillary panicles, with numerous minute seeds. It is commonly known as Nettle and locally known as aanathumba.

Major constituents: Alkaloids, flavanoids, terpenoids, glycosides, saponins and tannins (Prasanna et al., 2009).

Pharmacodynamic uses: Wound healing, hepatoprotective, antioxidant and hypoglycemic activity (Prasanna et al., 2009).

Ethnomedicinal uses: In Sikkim, the leaves and fresh roots are used for the treatment of fracture, dislocation of bones, boils, and decoction of herb is used as a febrifuge (Srivastava, 1993).

***Verbascum thapsus* L. (Scrophulariaceae)**

Description: It is a dicotyledonous plant that produces a rosette of leaves in its first year of growth. The leaves are large, up to 50 cm long. The second year plants normally produce a single unbranched stem usually 1 to 2 m tall. In the East of its range in China, it is, however, only reported to grow up to 1.5 m tall. The tall pole-like stems end in a dense spike of flowers that can occupy up to half the stem length. All parts of the plants are covered with star-shaped trichomes. This cover is particularly thick on the leaves, giving them a silvery appearance. It is commonly known as Common Mullein and locally known as kadu gidu.

Major constituents: Flavanoid, saponins, tannins, terpenoids, glycosides, carbohydrates and proteins (Ali et al., 2012).

Pharmacodynamic uses: Antihelmenthic, Antiviral, antiangiogenic and antiproliferative activities (Ali et al., 2012).

Ethnomedicinal uses: In Nilgiris, the badaga tribal people uses the leaf paste externally in treatment of cuts and wounds as an antiseptic (Sathyavathi and Janardhanan, 2007).

Conclusion

This review article has a paramount importance creating awareness for the public regarding the medicinal importance of weeds removing the misunderstanding from their minds that they consider it as useless. Moreover, it helps to motivate the public to safe guard these medicinally important weeds from all in once destruction. It is a misconception in people minds to consider all weeds as useless or hurdles to public, as some of these weeds having good ethno medicinal values globally and is good sources for new drug discovery and grows naturally in bulk, no need of specialized good agricultural practices, easily available in all the seasons. It is our duty to safe guards these beautiful nature gifts.

Globally some of these weeds are used as ethnomedicinal aids in treatment of fevers, pains, inflammations, microbial infections, worm infestations, cancer, wounds etc. But very less scientific validation is available on this area so there is a great scope for the phytoscientists to work on this area in order to explore the phytochemical or pharmacological importance of weeds. It is the duty of phytoscientists establish the scientific validation for these medicinally important weeds, so that the misconception of weeds as useless or public hurdle will convert to weeds as a pharmacologically and economically valuables.

REFERENCES

- Abrar M, Tamboli, Rukhsana A Rub, Pinaki Ghosh, Bodhankar SL (2012). Antiepileptic activity of lobeline isolated from the leaf of *Lobelia nicotianaefolia* and its effect on brain GABA level in mice. *Asian Pac J. Trop. Biomed.* 2:537-542.
- Adejumo OE, Owa-Agbanah IS, Kolapo AL, Ayoola MD (2011). Phytochemical and antisickling activities of *Entandrophragma utile*, *Chenopodium ambrosioides* and *Petiveria alliacea*. *J. Med. Plants Res.* 5:1531-1535.
- Agnieszka K, Maria Wolbiś (2011). Study on the phenol constituents of the flowers and leaves of *Trifolium repens* L. *Nat. Prod. Res.* 26(21):2050-2054.
- Ali N, Ali Shah SW, Shah I, Ahmed G, Ghias M, Khan I, Ali W (2012). Anthelmintic and relaxant activities of *Verbascum thapsus* Mull. *BMC Complement Altern. Med.* 30:12-29.
- Asma RM, Rahmatullah Q, Raza B (2010). Ethnomedicinal uses of herbs from Northern part of nara desert, Pakistan, Pak. *J. Bot.* 42(2): 839-851.
- Andre V (1988). *Grass Productivity*, Island Press, Washington, D.C., pp. 48-53.
- Andrade-Cetto (2009). Ethnobotanical study of the medicinal plants from Tlanchinol, Hidalgo, México., *J. Ethnopharmacol.* 122:163-171.
- Aniel kumar O, Krishna Rao M, Raghava Rao TV (2012). Ethno medicinal plants used by the tribals of Sudi Konda Forest, East Godavari District, Andhra Pradesh to cure women problems. *J. Phytol.* 4(1):10-12.
- Anu W, Rajat M, Satish S Vipin S, Sumeet G (2011). Hepatoprotective effects from the leaf extracts of *Brassica juncea* in CCl4 induced rat model. *Der Pharmacia Sinica* 2(4):274-285.
- Aziz B, Islam K (2012). Antibacterial activity of coumarine derivatives synthesized from 8-amino-4, 7-hydroxy-chromen-2-one and comparison with Standard drug. *J. Chem. Pharm. Res.* 4(5):2495-2500.
- Babu, Niranjana M, Elango K (2011). Pharmacognostical, Phytochemical and Antioxidant studies of *Achyranthes aspera* Linn and *Achyranthes bidentata* Blume. *J. Pharm. Res.* 4:1050-1053.
- Baker HG (1974) *The Evolution of Weeds*, *Ann. Rev. Ecol. Systematics* 5:1-24.
- Barua CC, Buragohain B, Roy JD, Talukdar A, Barua AG, Borah P, Lahon LC (2011). Evaluation of analgesic activity of hydroethanol extract of *Plantago erosa* ex roxb. *Pharmacologyonline*, 2:86-95.
- Bhanu PK (2011). Evaluation of wound healing activity of leaves of *Ageratum conyzoides*. *Int. J. P'Prac. Drug. Res.* 1:8-13.
- Biller A, Boppre M, Witte L, Hartmann T (1994). Pyrrolizidine alkaloids in *Chromolaena odorata*, Chemical and chemo ecological aspects. *Phytochemistry* 35:615-619.
- Charles LP, Kokati Venkata BR (2012). Ethnobotanical and Current Ethnopharmacological Aspects of *Argemone Mexicana* Linn: An Overview. *Int. J. Pharm. Pharm. Sci.* 3:2143-2148.
- Chidrawar VR, Patel KN, Sheth NR, Shiromwar SS, Trivedi P (2011). Antiobesity effect of *Stellaria media* against drug induced obesity in Swiss albino mice. *Ayu.* 32:576-584.
- Chharba SC, Mahunnah RLA, Mshiu EN (1993). Plants used in traditional medicine in eastern Tanzania. *J. Ethnopharmacol.* 39:83-103.
- Christopher L (2001). *The Well-Tempered Garden (Revised)*, Charles Elliot, Cassell & Co, London, pp. 25-27.
- Devi PM, Muthumani R, Ratnaji CP, Vijayakumar T, Duddu VD, Murthy K, Jeyasundari (2010) Evaluation of alcoholic and aqueous Extracts of *Nicandra Physalodes* Leaves for Diuretic Activity. *Int. J. Pharmaceut. Biological Arch.* 1:331-334.
- Devmurari VP, Jivani NP (2010). *Annals of Biological Research*, 1(1):10-14.
- Dheeraj VL, Srikanth Reddy A, Subramanyam S, Raj S (2010). Evaluation of Nephroprotective and antioxidant activity of *Anthoxanthum odoratum* on acetaminophen induced toxicity in rat. *Int. J. Pharm. Res. Dev.* 2:1-5.
- Dilip K, Manashi D, Nazim FI (2005). Few plants and animals based folk medicines from Dibrugarh District, Assam. *Indian J. Trad. Knowl.* 4:81-85.
- Ezeonwumelu JO, Omolo RG, Ajayi AM, Agwu E, Tanayen JK, Adiukwu CP (2012). Studies of phytochemical screening, acute toxicity and anti-diarrhoeal effect of aqueous extract of kenyan *Tithonia diversifolia* leaves in rats. *Br. J. Pharmacol.* 3:127-134.
- Francisca GB, Rajendran A (2012). Ethnobotany of irular tribes in redhills, tamilnadu, India. *Asian Pac. J. Trop. Biomed.* 1:S874-S877.
- Faraz M, Mohammad K, Naysaneh G, Hamid R, Vahidipour (2003). Phytochemical Screening of Some Species of Iranian Plants. *Iran. J. Pharm. Res.* 2:77-82.
- Geetha R, Gopal GV (2011). Phytochemical screening of *Siegesbeckia orientalis* L., a medicinal plant of Asteraceae. *J. Basic. Appl. Biol.* 5:156-164.
- Govindaraj R, Pandiarajan G, Balakumar, Makesh K, Sankarasivaraman K (2011). Beneficial usage of weeds in the tea fields of Pandalur Village, Nilgiris District, Tamilnadu. *J. Biol. Res.* 2:49-54.
- Hari SL, Sanjay S, Kumari P (2012). Study of Ethno Medicinal Uses of Weeds in Rice Field Of Hazaribag District Of Jharkhand India. *IJIT* 1:23-26.

- Hemadri RS, Chakravarthi M, Chandrashekara, Naidu CV (2012). Phytochemical Screening and Antibacterial Studies on Leaf and Root Extracts of *Asclepias Curassavica* (L.). IOSR-JPBS 2:39-44.
- Hornoy B, Atlan A, Tarayre M, Dugravot S, Wink M (2012). Alkaloid concentration of the invasive plant species *Ulex europaeus* in relation to geographic origin and herbivory. *Naturwissenschaften* 99:883-892.
- Hungeling M, Lechtenberg M, Fronczek FR, Nahrstedt A (2009). Cyanogenic and non-cyanogenic pyridine glucosides from *Acalypha indica* (Euphorbiaceae). *Phytochemistry* 70:270-277.
- Ibrahim JA, Vivian C, Egharevba, HO (2010). Pharmacognostic and Phytochemical Analysis of *Commelina benghalensis* L. *Ethnobotanical Leaflets* 14:610-615.
- Ingrid E, Jordon Thaden, Svata M Louda (2003). Chemistry of *Cirsium* and *Carduus*. A role in ecological risk assessment for biological control of weeds. *Biochem. Sys. Ecol.* 31:1353-1396.
- Jayabalan N, Chidambaram SB, Thanukrishnan H, Muthiah R (2008). Evaluation of behavioural and antioxidant activity of *Cytisus scoparius* Link in rats exposed to chronic unpredictable mild stress. *BMC CAM* 8:1-8.
- Jhade D, Ahirwar D, Jain R, Sharma NK, Gupta S (2011). Pharmacognostic Standardization, Physico and Phytochemical Evaluation of *Amaranthus Spinosa* Linn. *Root. J. Young Pharm.* 3:221-225.
- Jia RY, Yin ZQ, Wu XL, Liu DB, Du YH, Luo LY, Li C, Xiong Y (2008). Hypoglycemic effect of flavonoids from *Prinsepia utilis* on alloxan-induced diabetic mice. *Zhong Yao Cai*. 31:399-403.
- Jitendra Patel Kumar GS, Deviprasad SP, Deepika S, Shamim Qureshi Md (2011). Phytochemical and anthelmintic evaluation of *Lantana camara* (L.) var. *aculeate* leaves against *Pheretima posthuma*. *JGTPS* 2:11-20.
- Jitin A, Suresh J, Deep A, Madhuri Pratyusha R (2011). Phytochemical Screening of Aerial Parts of *Artemisia parviflora* Roxb. A medicinal plant. *Der Pharmacia Lettre* 3:116-124.
- Joanne P, Nynke B, David H, Jitendra G, Ronald H, Yaegl CE, Shoba R, Subramanyam V, Joanne J (2012). An ethnobotanical study of medicinal plants used by the Yaegl Aboriginal community in northern New South Wales, Australia. *J. Ethnopharmacol.* 139:244-55.
- Jun Yi Hu, Wei Q, Yoshihisa T, Hong QD (2006). A New Hemiterpene Derivative from *Prinsepia utilis*. *Chinese Chemical Lett.* 17:198-200.
- Larguita P, Reotutar ED, Gemma, AR, Supnet MST (2008). Phytochemical screening of wellawel (*Chromolaena odorata*) Leaves, its Antimicrobial and Coagulative Properties. *JPAIR Multidiscipl. J.* 1:111-122.
- Lucia MC, Jesu C, Ferreira (2012). *Borreria* and *Spermacoce* species (Rubiaceae): A review of their ethno medicinal properties, chemical constituents, and biological activities. *Pharmacognosy Rev.* 6:46-55.
- Maluventhan V, Sangu M (2010). Phytochemical analysis and antibacterial Activity of medicinal plant *cardiospermum Halicacabum* linn. *J. Phytol.* 2:68-77.
- Mary, kensa V, syhed YS (2011). Phytochemical screening and antibacterial activity on *Ricinus communis* L. *Plant Sci. Feed* 1:167-173.
- Mouli KC, Vijaya T, Dattatreya Rao S (2012). Effectiveness of flavonoid-rich leaf extract of *Acalypha indica* in reversing experimental myocardial ischemia: biochemical and histopathological evidence. *Zhong Xi Yi Jie He Xue Bao.* 10(7):784-792.
- Naod G, Tsige GM (2012). Comparative Physico-Chemical Characterization of the Mucilages of Two Cactus Pears (*Opuntia* spp.) obtained from Mekelle, Northern Ethiopia. *J. Bio. Nanobiotech.* 3:79-86.
- Odukoya OA, Inya-Agha SI, Segun FI, Sofidiya MO, Ilori OO (2007). Antioxidant activity of selected Nigerian green leafy vegetables. *Am. J. Food Technol.* 2:169-175.
- Ogundare AO (2007). Antimicrobial effects of *Tithonia diversifolia* and *Jathropa gossypifolia* leaves extract collected from Ogbomoso, Oyo State, Nigeria. *Adv. Nat. Appl. Sci.* 4:31-54.
- Okwu DE, Nnamdi FU (2011). Two novel flavonoids from *Bryophyllum pinnatum* and their antimicrobial Activity. *J. Chem. Pharm. Res.* 3:1-10.
- Oseni LA, Yussif I (2012). Screening ethanolic and aqueous leaf extracts of *Taraxacum officinale* for in vitro bacteria growth inhibition. *J. Biomed. Pharma. Sci.* 20:1-4.
- Panda H (2000). *Medicinal Plants Cultivation and Their Uses*. Asia Pacific Business Press Inc., Delhi, India. pp 503-05.
- Prajapati MS, Patel JB, Modi K, Shah MB (2010). *Leucas aspera*: A review. *Pharmacogn Rev.* 4:85-87.
- Porfirio S, Fale PL, Madeira PJA, Florencio MH, Ascensa L, Serralheiro MLM (2010). Antiacetylcholinesterase and antioxidant activities of *Plectranthus barbatus* tea, after in vitro gastrointestinal metabolism. *Food Chem.* 122:179-187.
- Prasanna KK, Sutharson L, Lila KN, Bhagabat N (2009). Evaluation of wound-healing activity of leaves of *Urtica parviflora* Roxb and *Callicarpa arborea* Roxb in rats. *Pharmacologyonline* 1:1095-1103.
- Rajamanickam V, Rajasekaran A, Anandarajagopal K, Sridharan D, Selvakumar K, Stephen Rathinaraj B (2010). Anti-diarrheal activity of *dodonaea viscosa* root extracts. *Int. J. Pharma. Biol. Sci.* 1:182-185.
- Rajan S, Sethuraman M, Mukherjee Pulok K (2002) Ethnobiology of the Nilgiri Hills, India. *Phytother. Res.* 16:98-116.
- Rajan S, Jayendran M, Sethuraman M (2005). Folk herbal practices among Toda tribe of the Nilgiri Hills in Tamil Nadu, India. *J. Nat. Rem.* 5:52-58.
- Rakshapal S, Surendera PG, Deepmala S, Rachana S, Rakesh P, Alok K (2011). Medicinal plant *Coleus forskohlii* Briq. : Disease and management. *Med. Plants* 3:1-7.
- Risky P (2008). Supplements to avoid. *Consumer Rep.* 73(1):46-47.
- Samuel JL, Vipin CP, Senthil Kumar KL, Ram KS, Amit R (2010). Antitumor activity of the ethanol extract of *Amaranthus spinosus* leaves against EAC bearing Swiss albino mice. *Der Pharmacia Lettre* 2:10-15.
- Sanjay KU, Singh KN, Brij L (2006). Traditional use of medicinal plants among the tribal communities of Chhota Bhangal, Western Himalaya. *Pp.03-20*.
- Sasikumar JM, Thayumanavan Tha, Subashkumar R, Janardhanan K, Lakshmanaperumalsamy P (2007) Antibacterial activity of some ethnomedicinal plants from the Nilgiris, Tamil Nadu, India. *NPR* 6:34-39.
- Sathyavathi R, Janardhanan KJ (2007). Folklore Medicinal Practices Of Badaga Community In Nilgiri Biosphere Reserve, Tamilnadu, India. *IJPRD* 3:50-63.
- Selvaraj N, Mohandas B, Anita B, Murugesha KA (2009). Medicinal plants of Nilgiris- an organic prespective. Nandiseva printing works, Udhagamandalam- 643001, pp. 156-157.
- Shivaraj H Nile, Kobragade, CN (2011). Phytochemical analysis, antioxidant and Xanthine oxidase inhibitory activity of *Tephrosia purpurea* Linn root extract. *J. Nat. Prod. Res.* 2:52-58.
- Shu ML, Sudhakar D, Anandarajagopal K (2012). Evaluation of antibacterial and antifungal activities of *Persicaria chinensis* leaves. *IJBPR* 3:400-404.
- Singh S, Singh TD, Singh VP, Pandey VB (2010). Quaternary Alkaloids of *Argemone mexicana*. *Pharmaceutical Biol.* 48:158-160.
- Srivastava RC (1993). Medicinal plants of Sikkim Himalayan. *J Res Ind Med*, 121: 5-14.
- Srivastava RC, Adi C (2009). Traditional Knowledge of Adi tribe of Arunachal Pradesh on plants. *IJTK* 8:146-153.
- Srivastava RC, Nyishi C (2010). Traditional knowledge of Nyishi (Daffla) tribe of Arunachal Pradesh. *IJTK* 9:26-37.
- Subin MZ, Aley kutty NA, Jayakar B, Vidya V, Halima OA (2012). Estimation of Antioxidant and Total flavanoid content of *Mirabilis jalpa* Linn using invitro models. *Int. J. Pharm.* 3:187-92.
- Suhail AM, Mohtasheem M, Iqbal A, Ahmed SW, Bano H (2008). Chemical constituents from *Melilotus officinalis*. *J. Basic. Appl. Sci.* 4:89-94.
- Sukuman P, Nair AG, Chinmayee DM, Mini I, Sukumaran ST (2012). Phytochemical Investigation of *Bidens biternata* (Lour.) Merr. and Sheriff.-A Nutrient-Rich Leafy Vegetable from Western Ghats of India. *Appl. Biochem. Biotechnol.* 67:1795-1801
- Sumi W, Ting KN, Khoo TJ, Wardah MD, Christophe W (2011). Antioxidant, Anti-Inflammatory, Cytotoxicity and Cytoprotection activities of *Crassocephalum crepidioides* (Benth.) S. Moore. extracts and its phytochemical Composition. *Eur. J. Sci. Res.* 1:157-165.
- Sumitra S, Rupinder K, Surendra KR, Sharma (2012). Pharmacognostical evaluation of *Oenothera rosea* L'Hér. ex Aiton. root. *J. Pharm Res.* 5:3269-3271.
- Surjeet K, Lincy J, Mathew G, Lakhvir K, Vivek B (2011). Skeletal

- muscle relaxant activity of methanolic extract of *Rumex nepalensis* in albino rats. *J. Chem. Pharm. Res.* 3:725-728.
- Thangavel A, Muniappan A, Yesudason J, Koil P, Thangavel S (2011). Phytochemical screening and antibacterial activity of leaf and callus extracts of *Centella asiatica*. *Bangladesh J. Pharmacol.* 6:55-60.
- Udayan PS, Harinarayanan MK, Tushar KV (2008). Some common plants used by Kurichiar tribes of Tirunelli forest, Wayanad District, Kerala in medicine and other traditional uses. *IJTK* 4:250-255.
- Umar RA, Hassan SW, Ladan MJ, Nma M, Jiya IK, Matazu MK, Abubakar U, Nata`ala, Abdullahi K (2008). Therapeutic Efficacy of Chloroquine for Uncomplicated *Plasmodium falciparum* Malaria in Nigerian Children at the Time of Transition to Artemisinin-Based Combination Therapy. *Research Journal of Parasitology*, 3:32-39.
- Vadivelan R, Bhadra S, Ravi AV, Singh K, Shanish, Elango K (2009). Evaluation of anti inflammatory and membrane stabilizing property of ethanol root extract of *Rubus ellipticus* smith and albino rats. *J. Nat. Remed.* 9:74-78.
- Vjanick CC Jules (1979). *Horticultural Science*. W.H.Freeman, San Francisco, CA, USA. P. 308
- Valarmathi R, Rajendran A, .Akilandeswari S, Senthamarai R (2010). Study on Antipyretic Activity of a *Mollugo pentaphylla* Linn in Albino Mice. *Int. J. Pharm. Tech. Res.* 2:388-390.
- Venkatesh S, Reddy YSR, Ramesh M, Swamy MM, Mahadevan N, Suresh B (2008). Pharmacognostical studies on *Dodonaea viscosa* leaves. *J. Pharm. Pharmacol.* 2:83-88.
- Vijayalakshmi S, Nanjan MJ, Suresh B (2009). In vitro anti-tumour studies on *Cnicus wallichii* DC. *Anc Sci. Life* 29:17-19.
- Wang L, Zhu Y, Liao M (2011). Therapeutic effects of saponins from *Achyranthes bidentata* in SHRsp. 1. *Zhongguo Zhong Yao Za Zhi*, 36:1239-1241.
- Zhang QC, Zhang H (2007). A review of researches on medicinal plants of *Erigeron* in Asteraceae. *J. Tradit. Chin. Med.* 27:68-69.
<http://www.ethnologue.com>.
<http://www.fs.fed.us/ne/delaware/ilpin/ilpin.html>
<http://www.weeds.psu.edu>