

An inventory of weed flora and its medicinal importance from Palasdari, Maharashtra

Lakshmi Girish

Department of Botany, University of Mumbai, Smt. Chandibai Hiamathmal Mansukhani College, Maharashtra, India

Abstract

The present study documented the medicinal weeds from Palasdari, Maharashtra. A total of 90 species of weeds belonging to 81 genera of 41 families were recorded during the study. Majority of the plants studied were permanent weeds of the study area. Maximum number of weeds were represented from the family Compositae. Botanical name, common name, family, medicinal uses and pharmacological activities and the phytochemical constituents were reported. The study was an attempt to create awareness among the public of the medicinal treasure of the area. With proper plans and community participation, Palasdari could be developed not only as a promising economic and bioresource centre for medicinal drugs but also conservation of the rare medicinal weeds.

Keywords: weed flora, Palasdari, medicinal uses, phytochemicals

Introduction

Weed is a plant which is judged by man to be not of use and undesirable at a place where it flourishes ^[10]. The plants growing in a wrong place i.e. in agriculture fields are often referred to as weeds. These plants have a short vegetative phase with high reproductive potential. Weeds differ from other plants in being more adaptive and having peculiar characteristics that make them more competitive ^[7]. Weeds are genetically labile and phenotypically plastic; these characters enable them to successfully pass-through adverse habitats ^[11]. Weeds have always been portrayed as the one which competes with the crop plants, reducing the crop production and thereby increasing the cost of production, harboring insect-pests & disease pathogens, poison to human beings, cattle and furthermore reduces the value of land. But on the other hand, its positive facts go unnoticed. The weeds add organic matter and nutrients to soil, check wind, water, and soil erosion, can be used as fodder for animals, some are even used as leafy vegetables. Many weeds repel insects and pests through their distinct odour, spines, or through allelopathy. They play a very prominent role in reclamation of soil and is an important resource for pharmaceutical drugs. Urbanization and modernization have resulted in dwindling habitat of the medicinal plants and the ever-increasing demand for raw drugs pose great threats to some species which are in the verge of extinction. Intensive studies on indigenous medicinal plants and germplasm collection of the various species are therefore very effective. The bridge between botany and tribal knowledge of medicinal plants is always Medico-ethnobotany ^[8]. Keeping in view of the immense importance of weeds, the present study aims to explore and document the weeds of Palasdari area to highlight their medicinal importance and urgent need for their conservation. Humans tend to neglect the weeds, but there is a need to understand the immense potential that they hold.

Materials and Methods

Palasdari is a village located 62.42 m above the sea level, 3 km from the Karjat station. Palasdari is a popular tourist

place on Karjat-Khopoli route of Mumbai Suburban Railway. Palasdari name is derived from "Palas" tree and "Dari" means "Darrah - A route through hills". It is a lush green hilly terrain with rich floral biodiversity. Frequent visits were conducted during different seasons for two years from 2017 – 2019 to list out the plants in the area. The plant samples were collected and brought to laboratory and identified with the help of Flora of Maharashtra Vol – I-V ^[1-6], A Textbook of Systematic Botany by Sutaria ^[13]. The parts used and their medicinal value were recorded as per Indian Medicinal Plants ^[9].

Results and Discussion

The botanical name of weeds, their family, common name, medicinal importance, pharmacological activities and phytoconstituents are listed in detail. In the present study a total of 90 weeds flora is documented belonging to 41 families. The maximum number of weeds belonged to the family Compositae. The results obtained clearly establish the fact that there is vast diversity in Palasdari. The result presents an overview of the unnoticed medicinal treasure of the study area. The study revealed that most of the weeds were used for treatment of various ailments such as ulcer, injuries, wounds, cuts, fever, diarrhea, swelling, poisons, skin care, toothache, asthma, cough and cold. Since Palasdari is located very close to tourist spots like Karjat and Matheran, developmental activities have become a great threat to this region. Moreover, the knowledge of wealth of these common weeds are getting lost due to the negligence towards traditional healthy lifestyle ^[12]. Different weeds with their botanical name, common name, medicinal uses, pharmacological activities and the major class of phytochemicals present are discussed below.

1. Botanical Name - *Tinospora cordifolia* Miers. Common Name – Indian Tinospora, Heart leaved moonseed; Family – Menispermaceae; Diseases treated /pharmacological activities - diabetes, high cholesterol, allergic rhinitis (hay fever), upset stomach, gout, lymphoma and other cancers, rheumatoid arthritis, hepatitis, peptic ulcer, fever, gonorrhoea, syphilis, and to

- boost the immune system. Anti-diabetic, anti-spasmodic, anti-malarial, anti-inflammatory, anti-arthritic, antioxidant, anti-allergic, anti-stress, anti-leprotic, hepatoprotective, immunomodulatory and anti-neoplastic activities. Major Phytoconstituents - alkaloids, glycosides, steroids, sesquiterpenoids, essential oils, flavonoids, phenols, tannins
2. Botanical Name - *Cissampelos pereira* L.; Common Name - Velvet Leaf, False Pareira Brava; Family – Menispermaceae Diseases treated /pharmacological activities - chronic non-healing ulcers, sinuses, skin diseases and poisonous bites. Anti-inflammatory, analgesic, anti-pyretic, immune modulatory, neuroprotective, antifertility, anti-venomous, anti-diabetic, hepatoprotective, cardiovascular, anti-cancer, anti-oxidant, anti-ulcer, anti-malarial, anti-microbial. Major Phytoconstituents - Alkaloids, flavonoids, tannins, volatile oils and glycosides.
 3. Botanical name – *Argemon mexicana* L.; Common Name – Mexican Poppy; Family – Papavaraceae; Diseases treated /pharmacological activities — antimicrobial activity, wound healing property, larvicidal and chemosterilant activity, ne-maticidal and allelopathic potential, antimalarial, antibacterial and antifungal, molluscicidal, anticancer, hepatoprotective, anti-HIV and neuropharmacological activity; Major Phytoconstituents - alkaloids, phenols, fatty acids.
 4. Botanical name – *Cardamine hirsuta* L.; Common Name – Hairy Bitter Cress, Lamb's Cress, Land Cress, Hoary Bitter Cress; Family – Cruciferae Diseases treated /pharmacological activities — Dysentery and to eye diseases. Major Phytoconstituents – Tannins, terpenoids, carbohydrates, steroids, flavonoids, phlobatannins, alkaloids, cardiac glycosides, saponins.
 5. Botanical name - *Cleome viscosa* L.; Common Name - Asian spider flower or tick weed, Wild or Dog Mustard; Family – Capparidaceae; Diseases treated /pharmacological activities — carminative, antiseptic, anthelmintic, sudorific rubefacient, vesicant and vermifuge; Major Phytoconstituents - alkaloids, phenols, fatty acids, flavonoids, tannins and carbohydrates
 6. Botanical Name – *Portulaca oleracea* P.; Common Name – Purslane; Family – Portulacaceae; Diseases treated /pharmacological activities - Fever, dysentery, diarrhoea, carbuncle, eczema, wound-healing and hematochezia. Febrifuge, antiseptic, vermifuge, neuroprotective, antimicrobial, antidiabetic, antioxidant, anti-inflammatory, antiulcerogenic, anticancer. Major Phytoconstituents – flavonoids, alkaloids, polysaccharides, fatty acids, terpenoids, sterols
 7. Botanical Name – *Urena sinuata* L. Common Name - Burr mallow; Family - Malvaceae; Diseases treated /pharmacological activities - Inflammation of intestine and bladder, bronchitis, malaria, fever, toothache, lumbago and rheumatism; Major Phytoconstituents - Terpenes, flavonoids and saponins Common Name - Air potato, yam.
 8. Botanical Name – *Urena lobata* L. Mast.; Common Name - Congo Jute, Caesar weed; Family - Malvaceae; Diseases treated /pharmacological activities - expectorant in dry coughs and sore throat. diuretic, emollient, antispasmodic and antirheumatic. Major Phytoconstituents - Alkaloids, glycosides, tannins, saponins, steroids and reducing sugars.
 9. Botanical Name - *Sida acuta* Burm. F.; Common Name - Country Mallow; Family – Malvaceae; Diseases treated /pharmacological activities - nervous and sexual debility, hemorrhoids, biliary disorders testicular swellings and elephantiasis. astringent, cooling, stomachic, diuretic and demulcent; Major Phytoconstituents - Alkaloids, fatty oil, steroids, phytosterols, resin, resin acids.
 10. Botanical name - *Sida rhombifolia* L.; Common Name - Common Bala; Family – Malvaceae; Diseases treated /pharmacological activities - pulmonary tuberculosis, nervous diseases and rheumatism, skin diseases. demulcent and emollient, diuretic and febrifuge. Major Phytoconstituents- Alkaloids, ephedrine, si-ephedrine and cryptolepine.
 11. Botanical name - *Malachra capitata* L.; Common Name – Brazil Jute, Family – Malvaceae Diseases treated /pharmacological activities - epilepsy, pain, hepatic cirrhosis, inflammation, diarrhea, convulsion, dementia, pyrexia, ulcer, healing of wounds, anti-inflammatory, analgesic, hepatoprotective, antidiarrhoeal. Major Phytoconstituents- alkaloids, anthocyanoides, coumarins, flavonoids, phenol, protein, tannin and terpenoids.
 12. Botanical Name - *Helicteres isora* Lin.; Common Name - East Indian Screw tree.; Family – Sterculiaceae; Diseases treated /pharmacological activities – dysentery, skin diseases. Antidiarrhoeal, anthelmintic, astringent, antibilious, antigalactic, demulcent, expectorant. Major Phytoconstituents - carbohydrates; anthraquinone, glycosides, proteins, tannin and phenolic compounds and steroids
 13. Botanical Name – *Melochia corchorifolia* L.; Common Name – chocolate weed.; Family – Sterculiaceae; Diseases treated /pharmacological activities – Smallpox, antidote, abdominal swellings, dysentery, vomiting, headache, hepatoprotective, antibacterial, antioxidant, anthelmintic. Major Phytoconstituents – Triterpenes, glycosides, beta sitosterols, flavonoids, alkaloids, steroids
 14. Botanical name - *Corchorus olitorius* L.; Common Name - Jew's Mallow; Family – Tiliaceae Diseases treated /pharmacological activities - stomachic, carminative, diuretic, antidysenteric, purgative. Major Phytoconstituents - alkaloids, cardiac glycosides, saponins, phenols and flavonoids
 15. Botanical name - *Trumphetta rhomboidea* Jacq.; Common Name - Burbush, Burweed; Family - Tiliaceae; Diseases treated /pharmacological activities - Internal ulcerations, leprosy, diarrhoea, dysentery, internal haemorrhages, gonorrhoea and promote childbirth. Antihypertensive, astringent, diuretic, mucilaginous and emollient Major Phytoconstituents - carbohydrate glycosides, phytosterol, steroids, flavonoids, tannin & phenolic compounds and triterpenoids.
 16. Botanical Name - *Impatiens balsamina* L.; Common Name - Garden Balsam.; Family – Balsaminae; Diseases treated /pharmacological activities – burns and scalds. Cathartic, diuretic, antirheumatic; Major Phytoconstituents – Flavonoids, alkaloids, phenol,

- tannin, steroid, saponin, triterpenes, glycosides and carbohydrates.
17. Botanical name - *Biophytum sensitivum* (Linn.) DC.; Common Name - Little tree plant; Family- Oxalidaceae Diseases treated /pharmacological activities – insomnia, convulsions, cramps, chest complaints, inflammations, tumors, chronic skin diseases and asthma. Diuretic, astringent, antiseptic and antidiabetic. Major Phytoconstituents – Flavonoids, saponins, tannins, terpenes, steroids, amino acids, essential oil, polysaccharides and pectin.
 18. Botanical Name - *Mollugo oppositifolia* Linn.; Common Name - Carpet weed; Family -Aizoaceae, Molluginaceae; Diseases treated /pharmacological activities – bitter tonic for liver disorders. Stomachic, aperient and antiseptic and spermistatic; Major Phytoconstituents – Carbohydrates, reducing sugar, glycosides, proteins, alkaloids, steroids, flavonoids, saponins, mucilage and organic acids.
 19. Botanical Name -*Leea indica* (Burm. f.) Merr.; Common name - Bandicoot berry; Family – Vitaceae; Diseases treated /pharmacological activities – Digestive, gastric troubles and constipation, vertigo, foul and indolent ulcers. Antidiarrhoeal, antidyenteric, antispasmodic, cooling, sudorific; Major Phytoconstituents – Phenolics, flavonoids, catechins, dihydrochalcones, coumarins, megastigmanes, and oxylipins
 20. Botanical Name - *Leea macrophylla* Roxb.; Common Name - Hathikarna; Family – Vitaceae; Diseases treated /pharmacological activities – Wounds and sores; against ringworm and guinea worm. Astringent, styptic, antiseptic; Major Phytoconstituents –Alkaloids, steroids, glycosides, saponins, carbohydrates, proteins and tannins.
 21. Botanical Name - *Sesamum indicum* L.; Common Name - Sesame, Gingelly.; Family – Pedaliaceae; Diseases treated /pharmacological activities – Burns, scalds, piles, diarrhea, dysentery, kidney - bladder troubles, acute cystitis and strangury. Diuretic, laxative, emollient. Major Phytoconstituents – Flavonoids, phenolic acids, alkaloids, tannins, saponins, steroids, terpenoids.
 22. Botanical Name -*Sesbania bispinosa* W. F. Wight.; Common Name -Prickly Sesban, Dhaincha; Family – Papilionaceae Diseases treated /pharmacological activities – against ringworm, wounds and skin diseases. Major Phytoconstituents - Triterpenoids, carbohydrates, tannins, saponins, glycosides and steroids.
 23. Botanical Name - *Alysicarpus longifolius* W. and A. Prodr.; Common Name - Longleaf Alyce Clover Family – Papilionaceae Diseases treated /pharmacological activities – root a substitute for liquorice. Major Phytoconstituents -Alkaloids, steroids, flavonoids and tannins.
 24. Botanical Name -*Vigna trilobata*. (L). Verdcourt.; Common Name -Wild Gram; Family -Papilionaceae Diseases treated /pharmacological activities - sedative, cooling and against fever. Febrifuge. Major Phytoconstituents - Flavonoids, steroids, terpenoids, saponin, glycoside and tannin.
 25. Botanical Name - *Desmodium trifolium*. (Linn.) DC.; Common Name -Tropical Trefoil; Family - Papilionaceae; Diseases treated /pharmacological activities - Diarrhoea; wounds and abscesses, cough, asthma, rheumatism, malaria, hepatitis and hemoptysis, pyrexia, dysentery. Galactagogue and diuretic. Major Phytoconstituents - Alkaloids, pterocarpan, phospholipids, sterols and flavonoids.
 26. Botanical Name - *Mucuna pruriens* D. C; Common Name – Velvet Bean; Family -Papilionaceae; Diseases treated /pharmacological activities – menstruation disorders, constipation, edema, fever, tuberculosis, bone fractures, cough, dog-bite, madness, pain, ring worm, scorpion sting, snakebite, sores and syphilis. Anticholesterolemic, antidiabetic, aphrodisiac, anti-inflammatory and antimicrobial, Major Phytoconstituents – Alkaloids, glycosides, reducing sugars, saponins, tannins, terpenoids.
 27. Botanical Name - *Canavalia ensiformis* D.C.; Common Name – Jack Bean; Family -Papilionaceae; Diseases treated /pharmacological activities – vomiting, asthma, obesity, stomach- ache, dysentery, coughs, headache, epilepsy, schizophrenia inflammation and swellings; Major Phytoconstituents – Tannins, flavonoids, alkaloids, saponins and cardiac glycosides.
 28. Botanical Name - *Cassia tora* L.; Common Name - Sickle Senna, Ringworm Plant.; Family- Caesalpiniae; Diseases treated /pharmacological activities – eczema, ringworm, cuts, jaundice, dysentery. Anthelmintic and antifungal; Major Phytoconstituents – Anthraquinone glycosides and flavonoids.
 29. Botanical Name – *Mimosa pudica* L.; Common Name – Touch me not; Family- Mimosae Diseases treated /pharmacological activities – urogenital disorders, piles, dysentery, sinus, and wounds. Antibacterial, antivenom, antifertility, anticonvulsant, antidepressant, aphrodisiac; Major Phytoconstituents – Alkaloids, flavonoids, cardiac glycosides, phenols and saponins whereas tannins, and terpenoids.
 30. Botanical name – *Ammania baccifera* L.; Common Name -Blistering Ammania, Monarch red stem, Tooth cup; Family-Lythraceae Diseases treated /pharmacological activities – scabies, ringworm, parasitic skin infections, common cold, typhoid, strangury, spinal disease. Antitumor, anti-inflammatory, antiarthritic, antianalgesic, antipyretic, antidiuretic, and wound healing. Major Phytoconstituents –Flavonoids, tannins, polyphenols, triterpenes and sterols
 31. Botanical Name- *Woodfordia fruticosa* Kurz; Common Name - Fire-flame Bush; Family – Lythraceae; Diseases treated /pharmacological activities – blood purification, heals ulcers, dysentery, diarrhoea, menorrhagia, haemorrhages, ulcerations and leucorrhoea and uterine sedative. Major Phytoconstituents – Terpenoids, tannins, flavonoids and ascorbic acid.
 32. Botanical Name - *Ludwigia parviflora* Roxb.; Common Name - Water Primrose, paddy clove; Family – Onagraceae; Diseases treated /pharmacological activities – dysentery, poultice in wound dressings, flatulence and constipation. Anticancer, antioxidant, anti-inflammatory, antihelminthic, and antimicrobial; Major Phytoconstituents –flavonoids, terpenoids, steroids, phenols, carbohydrates.
 33. Botanical Name - *Ludwigia octovalvis* (Jacq.) Common Name - Willow Primrose; Family - Onagraceae

- Diseases treated /pharmacological activities – catarrhal affections of children; dysentery. burns and scalds. Cooling, diuretic, astringent, febrifuge and mild laxative. Major Phytoconstituents – Glycosides, alkaloids, flavonoids, saponins, tannins, reducing sugars, phenolic compounds, carbohydrates, steroids and terpenoids.
34. Botanical name – *Passiflora foetida* L. Common Name -Stinking Passion flower; Family-Passifloraceae Diseases treated /pharmacological activities – Hysteria, headache, skin diseases, cold, cough, sleeping disorders, tuberculosis, inflammation and healing wounds. Antispasmodic, anthelmintic. Major Phytoconstituents – alkaloids, flavonoids, tannins, phenols, steroids, cardiac glycosides, saponins and terpenoids.
 35. Botanical Name - *Mukia madraspatna* (L.) M. Roem.; Common Name - Madras pea pumpkin, Rough bryony; Family – Cucurbitaceae; Diseases treated /pharmacological activities – vertigo and biliousness, amoebiasis a wound-dressing, burns, scabies, headache, to relieve facial neuralgia, toothache, flatulence. Aperient and diaphoretic, vermifuge. Major Phytoconstituents –Flavonoids, carbohydrates, steroids, tannins, alkaloids and phenolic compounds.
 36. Botanical Name - *Coccinia indica* W. & A.; Common Name - Ivy-Gourd.; Family -Cucurbitaceae; Diseases treated /pharmacological activities – expectorant, to stop vomiting, used in slow pulse and convulsions, also against infective hepatitis. Carminative, antipyretic, galactagogue, antiprotozoal, antispasmodic and antidiabetic; Major Phytoconstituents – Steroids, terpenoids, saponins, flavonoids alkaloids, tannins, glycosides, phenol and mucilage.
 37. Botanical Name -*Cucurbita maxima* Duchesne; Common Name - Red Gourd, Red Pumpkin; Family – Cucurbitaceae Diseases treated /pharmacological activities – Headache, bronchitis, asthma; treat intestinal infections and kidney problems as diuretic in genitourinary disorders, heal boils and earache. Anthelmintic against tapeworms; Major Phytoconstituents – Alkaloids, flavonoids, proteins, carbohydrates, polyphenols, glycosides, saponins and terpenoids.
 38. Botanical name -*Synedrella nodiflora* L Gaertn; Common name - Node weed, Cinderella weed Family - Compositae; Diseases treated /pharmacological activities – Inflammation, headache, earache and rheumatism. Major Phytoconstituents –Flavonoids, alkaloids, glycosides, steroids, tannins, saponins and phytosterols.
 39. Botanical Name - *Ageratum conyzoides* L.; Common Name - Goat Weed, White Weed; Family – Compositae; Diseases treated /pharmacological activities – Inflammation, pneumonia, wounds and burns, fever, rheumatism, headache, and colic pain. Anti-inflammatory, antibacterial, antifungal, antidiysenteric. Major Phytoconstituents – Flavonoids, alkaloids, coumarins, essential oils, tannins, and terpenoids.
 40. Botanical Name - *Blumea lacera* (Burm. f.) DC.; Common Name - Lettuce-Leaf Blumea; Family – Compositae; Diseases treated /pharmacological activities – bronchitis, fever, thirst and burning sensation antipyretic, astringent, febrifuge, diuretic, anthelmintic, anticholerin, antibacterial and antifungal. Major Phytoconstituents - steroids, terpenoids, glycosides, phenolic compounds, alkaloids, flavonoids and tannins.
 41. Botanical Name – *Sphaeranthus indicus* L.; Common Name - East Indian globe thistle; Family - Compositae Diseases treated /pharmacological activities - Jaundice, diabetes, hernia, hemorrhoids, helminthiasis, skin infections, bronchitis, cough, piles. epilepsy, mental illness, jaundice, hepatopathy, leprosy, fever, dyspepsia. Hypotensive, anxiolytic, neuroleptic, hypolipidemic, immunomodulatory, antioxidant, anti-inflammatory, bronchodialatory, antihyperglycemic and hepatoprotective. Major Phytoconstituents - Sesquiterpenoids, sterols, sterol glycoside, alkaloid, peptide alkaloids.
 42. Botanical Name - *Parthenium hysterophorus* L. Common Name - Parthenium weed, bitter weed, bitter-broom, bitterweed, carrot grass. Family – Compositae Diseases treated /pharmacological activities – fever, diarrhoea, neurologic disorders, urinary tract infections, dysentery, malaria, skin inflammation, rheumatic pain and neuralgia; Major phytoconstituents - Carbohydrates, alkaloids, steroids, sterols, glycosides, saponin, flavonoid, tannin, phenolic compounds.
 43. Botanical name - *Eupatorium odoratum* L; Common Name - Siam Weed; Family – Compositae Diseases treated /pharmacological activities –wound, burns, skin infections. Anticancer, antidiabetic, anti-hepatotoxic, anti-inflammatory, antimicrobial, and antioxidant activities; Major Phytoconstituents – Alkaloids, flavonoids, flavanone, essential oils, phenolics, saponins, tannins, and terpenoids
 44. Botanical Name -*Tridax procumbens* L.; Common Name - Mexican Daisy, Coat buttons or tridax daisy, Family – Compositae; Diseases treated /pharmacological activities – check haemorrhage from wounds, cuts and bruises, restoring hair growth. Antidiarrhoeal, antidiysenteric, antiseptic, insecticidal and parasiticidal; Major Phytoconstituents – flavonoids, alkaloids, hydroxycinnamates, tannins and phytosterols,
 45. Botanical name -*Eclipta alba* (Linn.) Hassk.; Common Name - Trailing Eclipta Plant; Family -Compositae Diseases treated /pharmacological activities – hepatitis, spleen enlargements, chronic skin diseases, insomnia and promotes hair growth. Antihepatotoxic, febrifuge. Major Phytoconstituents – Alkaloids, flavonoids, glycosides, polyacetylenes, triterpenoids
 46. Botanical Name -*Vernonia cinerea* Less.; Common Name - Purple Fleabane, Ash coloured Fleabane, Little iron weed; Family – Compositae Diseases treated /pharmacological activities – Malaria, asthma leucorrhoea, dysuria, spasm of bladder, for haematological disorders, as a blood purifier, dysuria, leucoderma, psoriasis and other skin diseases. Febrifuge, diaphoretic, styptic, anthelmintic, antifatulent, antispasmodic; Major Phytoconstituents – steroids, triterpenoids, esters, flavonoids, glycosides and saponins.
 47. Botanical Name -*Spilanthes acmella* Murr.; Common Name - Toothache plant, Family – Compositae Diseases treated /pharmacological activities – Toothache, throat and gum infections, flu, cough, rabies

- diseases, and tuberculosis, wound healing, snakebite, rheumatism, haemorrhage, helminthiasis, gingivitis, laceration, malaria, oral and gastric ulcer and infections, dysentery, urinary calculi, leucorrhoea. Antifungal, antipyretic, local anesthetic, anticonvulsant, antioxidant, aphrodisiac, analgesic, antimicrobial, diuretic, vasorelaxant, anti-human immunodeficiency virus and anti-inflammatory, antiseptic, antimalarial; Major Phytoconstituents – phytosterols, and tannin, spilanthol, carbohydrates, steroids, carotenoids, essential oil.
48. Botanical Name - *Carissa carandas* Linn. var. *congesta* (Wt.) Bedd.; Common Name - Christ's Thorn, Bengal Currant.; Family – Apocynaceae; Diseases treated /pharmacological activities – acidity, flatulence, poor digestion, as slimming diet, scabies, intestinal worms, snakebite, astringent, anemia, stomachache, diarrhea, rheumatism, earache female libido, mouth, diabetic ulcer and sore throat, wound healing. syphilitic pain, burning sensation fever, biliary dysfunction and as an appetizer, obstinate skin diseases and urinary disorders. Anthelmintic, antimicrobial, anti-fungal, analgesic, anti-inflammatory; Major Phytoconstituents – alkaloids, carbohydrates, glycosides, unsaturated sterols, phenolics, saponins, flavonoids, steroids, triterpenoids, tannins, proteins, cardiac glycosides, phytosterol, phlobatannins, leucoanthocyanin, coumarin, anthracyanin, minerals acids, vitamins and anthraquinone glycosides.
49. Botanical Name - *Trichodesma indicum* R. Br.; Common Name - Indian Borage; Family - Boraginaceae. Diseases treated /pharmacological activities – fever, joint disorders, diseases of eye and ear. Diuretic, anodyne, emollient, febrifuge, carminative, depurative, anti-inflammatory, astringent, antidiysenteric and anti-cancerous. Major Phytoconstituents – Steroids, triterpinoidal saponins and flavonoids.
50. Botanical Name - *Heliotropium indicum* Linn.; Common Name - Scorpion Tail.; Family – Boraginaceae; Diseases treated /pharmacological activities – used against scorpion bite, urticaria and fevers, ulcers, wounds, sores, gum boils and skin infections and coughs. Diuretic, astringent, emollient and stomachic. Major Phytoconstituents – Flavonoids, phenols, tannins, steroids, alkaloids, and saponins.
51. Botanical Name - *Evolvulus alsinoides* L.; Common Name – Dwarf morning glory; Family - Convolvulaceae Diseases treated /pharmacological activities – loss of memory, sleeplessness, chronic bronchitis, asthma, and in syphilis. It is also used in the treatment of epilepsy, leukoderma, cuts, and ulcer; Major Phytoconstituents –Alkaloids, glycosides, flavonoids, phenols, saponins, tannins and terpenoids.
52. Botanical Name - *Evolvulus nummularis* (L.) L.; Common Name – Roundleaf Bindweed; Family - Convolvulaceae Diseases treated /pharmacological activities - hysteria, burns, cuts, wounds and scorpion bites, antihelminthic, wound healing activity, sedative and anticonvulsant. Major Phytoconstituents – proteins, carbohydrates, phenols, tannins, flavonoids, saponins, glycosides, terpenoids and alkaloids.
53. Botanical Name – *Operculina turpethum* Silva.; Common Name – Indian Jalap; Family - Convolvulaceae Diseases treated /pharmacological activities – skin disorders, fistulas, constipation, chronic gout, fever, bronchitis, ulcers, hemorrhoids, tumors, obesity, jaundice, herpes, rheumatism, paralysis, scorpion sting, and snake bite. Antibacterial, anti-inflammatory, analgesic, hepatoprotective, anti-arthritis, ulcer protective, antidiarrheal, antidiabetic and cytotoxic; Major Phytoconstituents – Steroids, reducing sugars, terpenoids, alkaloids, flavonoids, cardiac glycosides, saponins and tannins.
54. Botanical Name - *Ipomea carica* (L.) Sweet; Common Name - Railroad Creeper, morning glory Mile-a-minute Vine, Messina Creeper, Cairo Morning Glory; Family – Convolvulaceae; Diseases treated /pharmacological activities – rheumatism and inflammation. antioxidant, anti-diabetic, antinociceptive, antimicrobial; Major Phytoconstituents – Alkaloids, carbohydrates, tannins, phenolic compounds, proteins, and amino acids, terpenoids, sterols, and saponins.
55. Botanical Name - *Cuscuta reflexa* Roxb.; Common Name - Giant dodder; Family – Convolvulaceae; Diseases treated /pharmacological activities – fits, insanity, fertility problems, tumors, scabies, eczema, chronic ulcer, jaundice, inflammation, chest pain, fever, itching, osteoporosis, diarrhea, oedema, stomachache, infections, measles, sores, kidney problems, sprain, high blood pressure, leucorrhea, obesity, migraine, amnesia, epilepsy, constipation and hair-growth promoting. antitumor, antimicrobial, hepatoprotective, anticonvulsant immunostimulatory, antioxidant, anti-steroidogenic, anti-inflammatory, diuretic, analgesic, antipyretic, anti-HIV, antidiabetic, neuroprotective, antiulcer, antispasmodic, cardiogenic, and muscle relaxant activities. Major Phytoconstituents – phenolic compounds, flavonoids, alkaloids, phytosterols, beta sterol, stigmaterol, glycosides, saponins, coumarin, cuscutamine, luteolin, fixed oils, fats, and carbohydrates
56. Botanical Name - *Ipomea carnea* Jacq.; Common Name - Bush morning glory; Family - Convolvulaceae Diseases treated /pharmacological activities – Wound healing. Anti-bacterial, anti-fungal, antioxidant, anti-cancer, anti-convulsant, immunomodulatory, anti-diabetic, hepatoprotective, anti-inflammatory, anxiolytic, sedative and anticarcinogenic; Major Phytoconstituents – Phenolic acid, alkaloids, flavonoids, coumarins and sterols.
57. Botanical Name - *Physalis minima* L.; Common Name - Sun-berry.; Family – Solanaceae; Diseases treated /pharmacological activities – gout and urinary diseases. Diuretic, aperient, alterative; Major Phytoconstituents – Alkaloids, steroids, tannin, flavonoids and protein.
58. Botanical Name – *Solanum nigrum* L.; Common Name – Black Nightshade.; Family – Solanaceae; Diseases treated /pharmacological activities - pneumonia aching teeth, stomach ache, tonsillitis, wing worms, pain, inflammation, fever, tumor, as tonic, as antioxidant, as anti-inflammatory, as hepatoprotective, as diuretic, and as antipyretic; Major Phytoconstituents – alkaloids, flavonoids, phenols, steroids, and tannins.
59. Botanical Name – *Solanum xanthocarpum* S & W.; Common Name – Yellow-Berried Nightshade; Family – Solanaceae Diseases treated /pharmacological activities - bronchitis, asthma, fever, lumbago, pains,

- piles, urinary and heart diseases. Antiasthmatic, hypoglycemic, hepatoprotective, appetizer, laxative, anthelmintic, stomachic, antibacterial anti-fertility, anti-inflammatory and anti-fungal; Major Phytoconstituents – Alkaloids, phenolics, flavonoids, sterol, saponins and glycosides.
60. Botanical Name- *Lindernia crustacea* (L.) F. Muell.; Common Name- False Brittle Pimpernel.; Family – Scrophulariaceae; Diseases treated /pharmacological activities – for umbilical infections, boils, uterine hemorrhage, bilious disorders, dysentery, amenorrhea, and hepatitis boils and itches and herpes-like sores leucorrhea, jaundice diarrhea, vomiting and cholera and colic. anti-inflammatory, analgesic, emetic, cathartic and antipyretic Major Phytoconstituents – Flavanoids.
 61. Botanical Name - *Adathoda vasica* (L.) Nees; Common Name -Malabar nut; Family - Acanthaceae; Diseases treated /pharmacological activities – cold, sore throat. Bronchial, asthmatic, antispasmodic, expectorant, febrifuge, anti-bacterial, anti-inflammatory; Major Phytoconstituents – alkaloids, phenolics, flavonoids, sterols, and their glycoside derivatives
 62. Botanical Name - *Barleria prionitis* Lin.; Common Name - Common Yellow Nail Dye Plant. Family – Acanthaceae; Diseases treated /pharmacological activities – stomach disorders, urinary affections, fever, catarrh, pimples, boils and glandular swellings, bleeding gums, asthma and arresting greying of hair. Diuretic, diaphoretic and expectorant; Major Phytoconstituents – flavonoid, glycoside, saponin, tannins and steroids.
 63. Botanical Name - *Asteracantha longifolia* (L.) Nees.; Common Name – Hygrophyla; Family -Acanthaceae; Diseases treated /pharmacological activities – anemia and for treating blood diseases, inflammations, hyperdipsia, strangury, jaundice and vesical calculi, flatulence and dysentery, rejuvenating and nerve tonic, lower the blood sugar level, used in burning sensation, fever, headaches, diarrhea and dysentery, rheumatism, gonorrhoea, and other diseases of the genito-urinary tract, jaundice. Diuretic, anti-inflammatory, antioxidant, analgesic, hepatoprotective, febrifuge, antidiabetic, stomachic, ophthalmic; Major Phytoconstituents –Polyphenols, proanthocyanins, mucilage, alkaloids, carbohydrates, flavonoids, terpenoids, vitamins and glycosides.
 64. Botanical Name - *Scoparia dulcis* Linn.; Common Name - Sweet Broomweed; Family-Verbenaceae; Diseases treated /pharmacological activities – Fever, cough and bronchitis, anemia, albuminuria, ketonuria and other complications associated with diabetes mellitus. Febrifuge; Major Phytoconstituents – Flavonoids, terpenoids, phenols, tannins, saponins, amino acids, coumarins and carbohydrates
 65. Botanical Name -*Lantana camara* Linn.; Common Name- Lantana; Family – Verbenaceae; Diseases treated /pharmacological activities – cuts, ulcers and swellings, tetanus and ataxy of abdominal viscera. Antirheumatic, antimalarial; Major Phytoconstituents – flavones, isoflavones, flavonoids, anthocyanins, coumarins, lignans, catechins, isocatechins, alkaloids, tannin, saponins and triterpenoids.
 66. Botanical Name - *Vitex negundo* Linn.; Common Name - Five-leaved Chaste tree.; Family - Verbenaceae Diseases treated /pharmacological activities –Promoting spermiogenesis, rejuvenating tonic for retarding old age and for retaining and promoting virility, removes foetid discharges, liver complaint, sinus, scrofulous sores, excessive vaginal discharges, oedema, skin diseases, pruritus, helminthiasis, rheumatism, and puerperal fever. Anti-inflammatory, analgesic, astringent, febrifuge and antidiarrhoeic. Major Phytoconstituents – Carbohydrates, proteins, amino acids, saponins, flavonoids, anthraquinones, tannins and phenolic compounds.
 67. Botanical Name -*Leucas aspera* Spreng; Common Name - Tamaba.; Family – Labiatae; Diseases treated /pharmacological activities – Jaundice, anorexia, dyspepsia, fever, helminthic manifestation, respiratory and skin diseases, psoriasis, chronic skin eruptions, antibacterial and chronic rheumatism, stomach pain, indigestion, cough and cold. Carminative, antihistaminic, antipyretic, febrifuge, antiseptic, stimulant, expectorant, diaphoretic. Major Phytoconstituents – triterpenoids, oleanolic acid, ursolic acid and b-sitosterol, nicotine, sterols, glucoside, diterpenes, phenolic compounds.
 68. Botanical Name - *Hyptis suaveolens* (Linn.) Poit.; Common Name- Pignut, stinking Roger.; Family – Labiatae; Diseases treated /pharmacological activities – uterine affections, parasitical cutaneous diseases, epistaxis. Carminative, antispasmodic, antisporific, antirheumatic, anticephalalgic, lactagogue; Major Phytoconstituents – Carbohydrates, alkaloids, cardiac glycoside, coumarin glycoside, saponins, flavonoids, phytosterols, fat and oils, and phenols, tannins and terpenoids.
 69. Botanical Name -*Pogostemon benghalensis* Kuntze; Common Name - Bengal pogostemon.; Family – Labiate; Diseases treated /pharmacological activities – Uterine hemorrhage. cleaning wounds. Antifungal and antibacterial; Major Phytoconstituents –Flavonoids, phenols, phytosteroids, carbohydrates, fatty acids, glycosides, sterols, terpenoids, tannins, essential oil and alkaloids.
 70. Botanical Name - *Boerhaavia diffusa* L.; Common Name – Spreading Hog weed; Family –Nyctaginaceae; Diseases treated /pharmacological activities – Blood purification, leucorrhoea, anemia, inflammations, heart diseases, asthma, appetizer, ophthalmia, joint pains, lumbago, scabies, dyspepsia, tumors, spleen enlargement and abdominal pains. Analgesic, anti-inflammatory, diuretic, hepatoprotective, expectorant, carminative, immunomodulator, nephroprotective, antiulcer and antihistaminic. Major Phytoconstituents – Carotenoids, flavonoids, flavonoid glycosides, xanthenes, purine nucleoside, lignans and steroids.
 71. Botanical Name - *Alternanthera sessilis* (Linn.) R. Br. ex DC.; Common Name - Sessile joyweed and dwarf copperleaf.; Family – Amaranthaceae; Diseases treated /pharmacological activities – hepatitis, tight chest, bronchitis, asthma and other lung troubles, to stop bleeding and as a hair tonic. Febrifuge, galactagogue, anti-diabetic, anti-cancer, anti-ulcer, antioxidant, anti-malarial, anti-diarrheal, anti-fungal, prophylactic, anti-microbial, anti-inflammatory and anti-pyretic; Major Phytoconstituents – Phenols, alkaloids, tannins, and flavonoids.

72. Botanical Name - *Celosia cristata* L.; Common Name - Cock's Comb; Family – Amaranthaceae; Diseases treated /pharmacological activities – menorrhagia and diarrhea, headache, sores, ulcers, eye inflammations, skin eruption, painful menstruation and dysentery; Major Phytoconstituents – flavonoids, saponin, tannins, phenols, terpenoids and steroids
73. Botanical Name - *Achyranthes aspera* L.; Common Name - Prickly Chaff Flower; Family – Amaranthaceae; Diseases treated /pharmacological activities – Menorrhagia, asthma and cough. Diuretic, hepatoprotective, abortifacient, astringent, hemostatic and antifungal; Major Phytoconstituents – Alkaloid, glycoside, volatile oils, tannins, saponins and flavonoids.
74. Botanical Name - *Aerva lanata* (L.) Juss. ex Schult; Common Name - The Mountain Knotgrass; Family - Amaranthaceae Diseases treated /pharmacological activities – Hepatitis, strangury catarrh of bladder and headache. Anticalculus, diuretic, demulcent, antihelminthic, antidiarrheal, anticholerin; Major Phytoconstituents – Tannins, flavonoids, alkaloids, terpenoids, glycosides, saponins and resins.
75. Botanical Name - *Polygonum glabrum* Willd.; Common Name - Common marsh, Buckwheat Family – Polygonaceae; Diseases treated /pharmacological activities - Stomachaches caused by intestinal worms, treatment of pain, jaundice, piles, pneumonia, burn, wound. Anti-inflammatory, analgesic, antifungal, antibacterial, antidepressant, hepatoprotective, antioxidant, antimalarial, nephroprotective, anti-HIV, antidiabetic, and antiproliferative; Major Phytoconstituents - Steroids, alkaloids, phenolic groups, cardiac glycosides, flavonoids, saponins and tannins.
76. Botanical Name - *Phyllanthus niruri* L.; Common Name - Chanca Piedra.; Family – Euphorbiaceae; Diseases treated /pharmacological activities – Jaundice, gonorrhoea, frequent menstruation, diabetes, skin ulcers, sores, swelling, and itchiness. Antispasmodic, antipyretic, diuretic, antiviral and bactericidal; Major Phytoconstituents – Flavonoids, alkaloids, terpenoids, lignans, polyphenols, tannins, coumarins and saponins
77. Botanical Name - *Pedilanthus tithymaloides* (L) Poit.; Common Name -Slipper Plant, Red Bird-Cactus.; Family – Euphorbiaceae Diseases treated /pharmacological activities – warts, leucoderma, venereal diseases. Emetic, anti-inflammatory, antibiotic, antiseptic, antihemorrhagic, antiviral, antitumoral, and abortive; Major Phytoconstituents – Saponins, coumarins, tannins, triterpenes and steroids. diterpenoids, flavonoids and carotenoids.
78. Botanical Name – *Euphorbia heterophylla* L.; Common Name – Mexican Fire Plant.; Family – Euphorbiaceae; Diseases treated /pharmacological activities – stomach-ache and constipation, and to expel intestinal worms, gonorrhoea, increase lactation, remove warts, body pain; Major Phytoconstituents – Alkaloid, flavonoid, tannin, saponin, sterol, quinone, lignin and coumarin.
79. Botanical Name – *Euphorbia hirta* L.; Common Name – Asthuma weed.; Family – Euphorbiaceae; Diseases treated /pharmacological activities – Cough, bronchitis, asthma, worm infestations, dysentery, jaundice, pimples, gonorrhoea, digestive problems tumors. Analgesic, antipyretic, anti-inflammatory; antioxidant, antitumor, antidiabetic, anti-allergic, sedative, antiarthritic, antidiarrheal, diuretic, immune stimulatory, antiviral, anthelmintic, antimalarial and antimicrobial; Major Phytoconstituents – Alkanes, triterpenes, phytosterols, tannins, polyphenols and flavonoids.
80. Botanical Name - *Tragia involucrata* Linn.; Common Name - Forget me not, Indian stinging Nettle. Family – Urticaceae; Diseases treated /pharmacological activities – Blood purifier in venereal diseases; asthma, rheumatic disorders, skin eruptions, baldness. Febrifuge, diaphoretic, alterative, diuretic, antispasmodic, expectorant; Major Phytoconstituents – Alkaloids, carbohydrates, protein, tannins, flavonoids, sterols and saponins.
81. Botanical Name - *Pouzolzia zeylanica* (L.) Benn.; Common Name - Pouzol's Bush; Family - Urticaceae; Diseases treated /pharmacological activities – Boils, dysentery, fevers, toothaches and urinary problems sores, boils, gangrenous ulcers, in syphilis and gonorrhoea and stomachache. Anthelmintic and galactagogue vulnerary; Major Phytoconstituents – Carbohydrates, gums, reducing sugar, alkaloids, steroids, glycosides, tannins, flavonoids and saponins.
82. Botanical Name - *Dioscoria bulbifera* L.; Common Name - Air potato, yam; Family – Dioscoriaceae; Diseases treated pharmacological activities - Conjunctivitis, diarrhea, dysentery, skin allergy due to spider bites; Major Phytoconstituents - Steroids, flavonoids, cardiac glycosides, saponins, and reducing sugars.
83. Botanical Name - *Gloriosa superba* L.; Common Name - Glory Lily, Super Lily, Tiger's Claws; Family - Liliaceae; Diseases treated /pharmacological activities - Piles, swollen joints, parasitical affections of skin, gout. Anti-inflammatory, alterative, anthelmintic, antileprotic; Major Phytoconstituents -Alkaloids, flavonoids, terpenoids, tannins, saponins, aromatic acids, phenolic compounds, xanthoproteins, triterpenoids, amino acids, phlobatanins, carbohydrate, reducing sugar, and proteins.
84. Botanical Name - *Commelina benghalensis* L.; Common Name - Benghal dayflower, tropical spiderwort, or wandering Jew; Family – Commelinaceae; Diseases treated /pharmacological activities – Treat infertility, eye complaints, pain, constipation, headache, leprosy, snake bite and jaundice, mouth thrush, epilepsy, insanity, and psychosis. Astringent, demulcent, laxative and mucilaginous. Major Phytoconstituents – Alkaloids, lactones and coumarins, triterpenoids and steroids, resins, reducing agents, phenols and tannins, quinones, flavonoids, astringents, saponins, oils and fats.
85. Botanical Name - *Cyanotis tuberosa* (Roxb.) Schult. & Schult. f. Common Name - Sahyadri Dew Grass, Greater cat ears; Family – Commelinaceae; Diseases treated /pharmacological activities – Treatment of cough, diarrhea, dysentery, eczema, indigestion, insect bite, rheumatism; Major Phytoconstituents – Alkaloids, reducing sugars, tannins, proteins, carbohydrates, glycosides and saponins.
86. Botanical Name - *Murdannia nudiflora* (L.) Brenan.; Common Name - Dove weed; Family - Commelinaceae; Diseases treated /pharmacological

- activities-Burns, boils and sores; Major Phytoconstituents - Tannins, flavonoids, saponins, and alkaloids.
87. Botanical Name - *Amorphophallus commutatus* (Schott) Engl. Common Name - Dragon stalk yam. Family - Araceae Diseases treated /pharmacological activities –Bronchitis, asthma, abdominal pain, emesis, dysentery, enlargement of spleen, piles, elephantiasis, diseases due to vitiated blood, and rheumatic swellings. Major Phytoconstituents – Alkaloids, amino acids, carbohydrates, phenols, terpenoids, glycosides, fixed oils and fats, proteins, flavonoids, anthoquinones, saponins, coumarin, Anthocyanin, Flavanones, tannins, quinones and steroids.
88. Botanical Name - *Cyperus rotundus* Linn.; Common Name - Purple nutsedge or nutgrass; Family – Cyperaceae; Diseases treated /pharmacological activities - Intestinal problems, indigestion, sprue, diarrhea, dysentery, vomiting and fever, rheumatism, inflammations, dysuria, and obesity. Carminative, astringent, anti-inflammatory, antirheumatic, hepatoprotective, diuretic, antipyretic, analgesic, hypotensive, and nervine tonic; Major Phytoconstituents - Phenolic compounds, steroids, flavonoids, glycosides, saponin, alkaloids, tannins and reducing sugars.
89. Botanical Name - *Chloris barbata* (L.) Swartz; Common Name - Swollen Windmill grass; Family – Poaceae Diseases treated /pharmacological activities – Relieving painful, inflammatory conditions and rheumatism. Antidiabetic, antibacterial, and antioxidant; Major Phytoconstituents - Alkaloids, flavonoids, carbohydrate glycosides, tannins and saponins.
90. Botanical Name - *Erioclon heterolepis* Steud.; Common Name - Buttonhead Pipewort; Family – Eriocaulaceae; Diseases treated /pharmacological activities - Liver disorders, jaundice and splenomegaly Major Phytoconstituents - Flavonoids, alkaloids, saponins, terpenoids and steroids.

Conclusion

The present study was conducted as a first ever attempt on Palasdhary to explore and identify the weeds of medicinal importance. Many of these plants are a potential resource for modern drugs. Due to deforestation, overexploitation and urbanization, the existence of medicinal weeds is threatened. Ethnobotanical studies can be a guide in creating a database of these weeds which will help in preserving the traditional knowledge and wonderful treasures of nature. The documentation and identification of the weed flora revealed that this area is rich in medicinal weeds and most of the people are using these weeds as a primary source of health care. Annually large number of medicinal weeds can be harvested from the study area with participation of local people and brought to the ayurvedic industries, which can become a source of income for the locals of Palasdhary area. Furthermore, a large no of these weeds is consumed by the locals as wild food plants for enhancement of health. It thus becomes necessary to preserve this traditional system of medicine by documenting the medicinal weeds of Palasdhary.

References

- Almeida MR, Almeida SM. Flora of Maharashtra. St. Xavier's College, Mumbai, India, (Fabaceae-Apiaceae). 1998; 2:372.
- Almeida MR, Almeida SM. Flora of Maharashtra. St. Xavier's College, Mumbai, India, (Ranunculaceae-Connaraceae). 1996; 1:294.
- Almeida M R, Almeida S M. Flora of Maharashtra. St. Xavier's College, Mumbai, India, (Rubiaceae - Eheretiaceae). 2001b; 3A:300.
- Almeida MR, Almeida SM. Flora of Maharashtra. St. Xavier's College, Mumbai, India, (Cuscutaceae - Martyniaceae). 2001a; 3B:301-464
- Almeida MR, Almeida SM. Flora of Maharashtra. St.Xavier's College, Mumbai, India, (Acanthaceae - Ceratophyllaceae). 2003; 4A&B:279-399
- Almeida M R, Almeida S M. Flora of Maharashtra. St.Xavier's College, Mumbai, India. (Hydrocharitaceae - Cyperaceae). 2009; 5A&B:495.
- Dangwal LR, Singh A, Singh T, Sharma C. Effect of weeds on the yield of wheat crop in Tehsil Nowshera. J. American Sci. 2010; 6(10):405-407.
- Jomy A, Sreejesh KR, Bijeshmon PP. Ethnogynecological uses of plants prevalent among the tribes of Periyar Tiger Reserve, Western Ghats. Indian Journal of Traditional Knowledge. 2010; 9(1)73-76.
- Khare CP. Indian Medicinal Plants An Illustrated Dictionary. Springer. Springer Science Business Media, LLC, 2007, 836.
- Patil PS, Ahirrao YA, Dusing YA, Aher VP, Patil DA. Role of crop weeds in traditional medicines in Buldhana district (Maharashtra). Life sciences leaflets. 2010; 10:261-272.
- Prayaga Murty P, Venkaiah M. Biodiversity of Weed Species in Crop Fields of North Coastal Andhra Pradesh, India. Indian Journal of Fundamental and Applied Life Sciences. 2011; 1(2):59-67
- Sudeesh S. Ethnomedicinal plants used by Malayaraya tribes of Vannapuram village in Idukki, Kerala, India. Ind. J. Sci. Res. and Tech. 2012; 1(1):7-11
- Sutaria RN. A text book of Systematic Botany. Khadayata Book Depot. Ahmedabad, India, 1969, 683.