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MEDICINAL AND AROMATIC WEED DIVERSITY IN BOTANIC GARDEN AND THEIR SUSTAINABLE UTILISATION FOR CONSERVATION

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ABSTRACT

Total 81 weeds belonging to 59 genera and 31 families growing in the University botanic garden at Sagar were found medicinally important. Various parts of all the weeds have been analyzed for their medicinal utility. Out of 81 weeds, leaves of 64 plants are found useful for various disorders. This is followed by root of 25 plants which are medicinally important. Disease wise analysis has also been carried out. Analysis reveals that for cut, wounds, boils and burns about 29 weed plants are used, whereas 21 weed species each are used for asthma and skin diseases.

INTRODUCTION

Despite the use of disease free and healthy seeds, ploughing, cultivation, hoeing, hand pulling and crop rotation, weeds persist because of our inability to cope up with their great reproductive capacity and mass recycling potential. In contrast to the cultivated plants, the weed is the invader, an uninvited guest in any cultivated field or garden. Weeds are an excellent example of the successful struggle for existence. Out of more than 3,00,000 plant species known in the world, about 30,000 are the weeds.

Botanical garden weeds have a large ecological amplitude, so they multiply and flourish well even in changed environmental conditions. Since they have unique potentialities for adaptation, they survive almost in any environment and adjust themselves to the changed conditions (Sen, 1982; Kasera, 1988). Man has been mostly indifferent towards weeds and has allowed them to create havoc by growing, spreading and disseminating their seeds at will. Fortunately, a large majority of the weeds are not very harmful to cultivated plant with which they are associated (Holzner, 1978; Kasera 1988; Sen, 1979; 1990a, b).

Man managed ecosystems like Botanic garden, Park, Agricultural fields, etc. provide an opportunity to weeds for their invasion. Most of the weeds are capable of thriving in varied habitats. Different portion of Botanic Garden have different characteristic weeds. Once a certain weed species is introduced, its abundance or scarcity within given portion of garden is determined largely by the degree of competition. The competitive ability of

a weed depends upon its vegetative habit, potentiality of seed germination, seedling growth, ecesis and life span.

The Department of Botany Dr. Hari Singh Gour University, Sagar is having one University Botanic Gardens. On account of good moderate climatic conditions a large number of rare and important plants are being cultivated and maintained here. The present work relates to survey and medicinal utility of weeds of Botanic Garden which grow along with the cultivated plants, from time to time.

OBSERVATIONS

Medicinal uses of garden weeds are described below. The names of plants are arranged in alphabetical order followed by family name, vernacular name and medicinal uses of plant parts.

1. **Abutilon indicum** Sweet (Malvaceae)

The roots are given for cough, leprosy and also as cooling agent. Leaf juice is given for boil, bronchitis and headache and ulcers. Plant axis is used in bone fracture, dysentery and cough. Leaf juice applied on the body of cattle to kill lice and other parasites.

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

The whole plant is used in curing bronchitis, asthma, pneumonia. Leaf juice is also given in pneumonia treatment. Plant latex contains acalyphin alkaloids which is given in snake bite as antidote, and disease of scabies. Decoction of leaf is given in ear pain and skin disease.

3. **Achyranthus aspera** L. (Amaranthaceae)
"Addajhara"

The root is given for easy delivery. It is also given with cold water to stop bleeding after abortion. Root paste is applied externally in scorpion sting. The whole plants is used in pains of tooth .Plant ash with a small quantity of sugar given orally for cough. Seeds are cooked and eaten as rice during fast. Root is given in bronchitis, asthma and dysentery. Leaf paste is useful in skin disease and piles.

4. **Aerva lanata** (L.) Juss. (Amaranthaceae)

The whole plant is given to increase milk in cows and buffalows. The paste of whole plant is applied on cuts, wounds, burns and skin diseases. The whole plant is also useful in malaria and headache. Plant axis is used in cholera, dysentery and snake bite.

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

The flowers are used in treatment of cancer. The leaves are use in leprosy and uterine disorder. It is also used in piles and killing the lice of hairs. Leaf paste is applied on cuts, wounds, boils and burns. Seeds are given to cure diarrhoea. Leaf is also useful for skin disease and scabies.

6. **Alternanthera sessilis** (L.) R.Br. ex DC. (Amaranthaceae)

Plant axis is used in various disorders such as dysentery , malaria, diarrhoea. Leaf paste is applied on the treatment of bone fracture. Leaves are also edible.

7. **Alysicarpus monilifer** DC. (Fabaceae)

The whole plant is useful antidote to snake bite. The mixture of crushed plants with cow dung is used for destroying the bed bugs and white ants. Paste of whole plant is warmed and applied on boils.

8. **Alysicarpus tetragonolobus** Edgew. (Fabaceae)

Root is given for median antifertility. Whole plant is useful in bone fracture and also in pains in joints. Root is also useful as expectorant.

9. **Anagallis arvensis** L. (Primulaceae)

"Nil Krishna"

The leaf is given in treatment of leprosy and hydrophobia. Leaf is also given for median cerebral affection. Whole plant is useful in gout disease.

10. **Anisomeles indica** (L.) O. Kuntze. (Lamiaceae)

The root is ground with water and the decoction is orally administered. The lotion is also massaged over the bitten part of snake-bite.

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

"Pili Kateli"

The paste of leaves is used in ulcer, leprosy. Seeds are used in cough, asthma and headache. Paste of root is given in piles. Whole plant (without root) is made into fine paste and applied on white patches in lips and body. Latex is given for pains, swelling and body pains.

12. **Basella alba** L. (Basellaceae)

"Poi"

Plant axis is given to cure syphilis, ulcers in nose. Leaf is used in constipation. Mixture of shoots and leaves is used as vegetables.

13. **Biophytum sensitivum** (L.) DC. (Oxalidaceae)

The paste of leaf is used in cuts and headache. It is also useful in antifertility and as antiseptic. Plants axis is given for malaria and diarrhoea. Leaf paste with cow milk is useful in treatment of menstrual disorders. Leaf is also given in muscle and rheumatic pain.

14. **Blepharis maderaspatensis** (L.) Roth. (Acanthaceae)

Leaves are mixed with some garlic and ground into a paste and given for treatment of gastric disorders.

15. **Blumea lacera** (Burm.f.) DC. (Asteraceae)

Leaf is used in burns, cuts and wounds. The whole plant is useful in bronchitis fever.

16. **Boerhavia diffusa** L. (Nyctaginaceae)

The whole plants is used in headache. Leaves are used for blood purifying. Root is given for asthma, cough fever, dysentery, inflammation and stomach disorders. Root paste with cow milk is given for abortion. Tender leaves are eaten as vegetables for jaundice.

17. **Borerria auriculata** (L.f.) Willd. (Rubiaceae)

Root extract is given in snake bite, bleeding in child birth and for antifertility. Leaves are used in skin diseases, scabies, ulcers. The whole plant is useful in bodyache and swelling.

18. **Brynopsis laciniosa** Naud. (Cucurbitaceae)

"Shivlingi"

Seeds are used in sex determination of children. The plant axis is useful in snakebite.

19. **Caesulia axillaris** Roxb. (Asteraceae)

Leaves are used in treating goitre. The whole plant is used in stomach complaints and also used as vegetables. Plant axis is used in baldness.

20. **Cassia absus** L. (Caesalpiniaceae)

Leaf extract is useful in cough and healing. Seed is useful in eye infection, skin disease and also act as cooling agent. Seed is cooked as a pulse.

21. **C. pumila** Lamk. (Caesalpiniaceae)

Leaf with plant axis and whole plant is used singly or in combination with others for wound healing, fever and vomiting.

22. **C. tora** L. (Caesalpiniaceae)

"Chakoda"

Leaves are useful in night blindness and paste of leaf is used in cuts, boils and antiseptic treatment. Seed is given in stomach pain as a tonic. Root is given in fever and abnormal child growth. Leaves are also useful in bone fracture, intestinal disease and stomach pain.

23. **Centella asiatica** (L.) Urban (Apiaceae)

"Brahmi"

Five to six leaves are chewed four time a day to treat mouth sore. Leaves are very useful in fever, cough, eczema, gastric disorder. Leaves used as brain tonic. Fruits used in skin diseases.

24. **Chenopodium murale** L. (Chenopodiaceae)

"Bathua"

Leaf is used in veterinary asthma. Leaf and stem is used as vegetables.

25. **Cissampelos pariera** L. (Menispermaceae)

Leaf is given for treatment of jaundice and liver disorders. Paste of leaves, flowers and root is also used for itch and small pox.

26. **Cleome gynandra** L. (Capparidaceae)

"Hurhur"

Leaf paste is given for ear pain and boil. Seed is useful in cough, skin diseases and headache. Leaf is useful as vermicide, in pyrrhoea. Paste of plant axis is given in wounds.

27. **C. viscosa** L. (Capparidaceae)

Leaf paste is given for ear pain. Seed is used in diarrhoea and skin disease. Leaf

powder and sugar (each half spoon) with one cup of milk is given in morning and evening for urinemia disease.

28. **Cocculus hirsutus** (L.) Diels.
(Menispermaceae)
"Solenta"
The leaf decoction is given in fever, eczema, urine disorder. Root is useful for deworming.

29. **Commelina benghalensis** L. (Commelinaceae)
"Kankaua"
Leaf paste is given in scorpion bite and wounds. It is also used in diarrhoea and irritation by bristles of caterpillar.

30. **Commelina diffusa** Burm.f. (Commelinaceae)
Roots are used as antidote in snake bite, bilious affect. Extracts of root is given in fever.

31. **Convolvulus arvensis** L. (Commelinaceae)
Seeds are purgative. The whole plant is used detergent.

32. **Cuscuta reflexa** (Roxb.) Cuscutaceae
"Amarbel"
The whole plant is used in body pain, fever, skin diseases. The paste of whole plant is applied on burns, cuts, swelling of legs, wounds and killing of lice. Seed is purgative in nature.

33. **Cymbopogon martini** (Roxb.) Wats. (Poaceae)
Oil is used in skin diseases and also in bilious affect. Leaves are given in rheumatism.

34. **Cynodon dactylon** Pers. (Poaceae)
"Doob Grass"
The whole plant is used to cure ulcers in stomach. Paste of leaves is applied for piles and to stop bleeding. Leaves are also given in vomiting.

35. **Cyperus rotundus** L. (Cyperaceae)
Root is useful in diarrhoea and dysentery .Root powder with salt is given in treatment of indigestion and vomiting.

36. **Datura innoxia** Mill. (Solanaceae)
"Datura"
Leaf paste is applied on boils. Seeds extract is used in pyrrohoea. Leaves are also used in asthma. The whole plant is useful in antihydrophobia.

37. Datura metal L. (Solanaceae)
"Kala Dhatura"
Seeds paste mixed with turmeric powder is applied locally to treat skin diseases. Leaf is used in treatment of cough, snake bites. Mixture of leaf, seed and root is used in skin diseases. The plant axis is given in madness, mumps and smallpox.

38. **Desmodium triflorum** (L.) DC. (Fabaceae)

The whole plant is useful in body pain. Leaf is used in dysentery, diarrhoea and toothache.

39. **Eclipta prostrata** L. (Asteraceae)

"Brangraj"

Root paste is applied externally as antidote to snake bite. The whole plant is useful in antifertility, asthma, bronchitis and jaundice. Plant powder is boiled in water and used in treatment of malaria. The whole plant is also useful to remove filarial disease. Whole plant is burnt and made into powder which is mixed with coconut oil and applied on eyelids for conjunctivitis.

40. **Eichhornia crassipes** Solm. (Pontederiaceae)

"Water hyacinth"

Leaves are used in ear disorders. Paste of whole plant is applied on swelling.

41. **Enicotema verticillatum** (L.) Engl. (Gentianaceae)

Fresh leaves of whole plant produced fall in fasting blood sugar in diabetic patients. The whole plant is also useful in treatment of malaria, and snake bite.

42. **Euphorbia hirta** L. (Euphorbiaceae)

"Doodhi"

The whole plant is used in boils of mouth, cough and dysentery. It is also given in toothache and vomiting. Leaf is given in treatment of snake bite as an antidote, and also given for pains in joints. Latex is useful in scabies and scorpion bite.

43. **Evolvulus alsinoides** L. (Convolvulaceae)

"Sankhpushpi"

The leaf is given in asthma, bronchitis and ulcers. Whole plant is given for stomach pain and scorpion sting. Ash of whole plant along with mustard oil is applied externally on skin disease. Leaf is useful in treatment of asthma, and bronchitis.

44. **Fumaria indica** Pugley (Fumariaceae)

The whole plant is good purifier, also given for treatment of fever, body pain and in various skin diseases. Mixture of leaf and stem is given for treatment of diarrhoea. Seed is used in body pain.

45. **Heteropogon contortus** (L.) P. Beauv. (Poaceae)

Roots are chewed by the victim of snakebite.

46. **Hygrophylla auriculata** (Schum.) Heyne (Acanthaceae)

Paste of leaves is used in body pain and jaundice. Plant axis is used in cancer, induces flow of urine. The whole plant extract is given in malaria. Seeds are used as tonic.

47. **Hyptis suaveolens** (L.) Poit. (Lamiaceae)

"Ban Tulsi"

Leaf juice is dropped in eye for conjunctivitis Root is given as the median antidote

to poison. Plant axis is used as tooth brush for toothache and also in headache.

48. **Ichnocarpus frutescens** (L.) Br.
(Apocynaceae)
Plant axis is useful in bronchitis, cough, cholera, dysentery. Root is used in skin diseases, fever, blood purifying and as a tonic. Leaf is given in fever and stomach pain.

49. **Indigofera cordifolia** Heyne (Fabaceae)
Leaf is useful in curing swelling in mouth.

50. **Indigofera linifolia** (L.f.) Retz. (Fabaceae)
The paste of whole plant is applied on sores and wounds. Seeds are edible.

51. **Lagascea mollis** Cav. (Asteraceae).
Leaf paste is given in cuts and wounds. Flowers are given for ear complaints.

52. **Launea asplenifolia** Hook. (Asteraceae)
Leaf is used in median fever and also used as vegetable.

53. **Malvastrum coramandelianum** (L.) Garche. (Malvaceae)
Leaf paste is applied on wounds, cuts, sores and sprain. Leaf is also given for jaundice.

54. **Nicotiana tabacum** L. (Solanaceae)
"Tambaku"
Juice of green leaves is used as insecticide and germicide. Paste of flowers is apllied to cure eczema, ringworm. Hot leaves are tied over boils for hastening their suppression.

55. **Oxalis corniculata** L. (Oxalidaceae)
"Katti Buti"
Leaf is given in cough, indigestion, dysentery and fever. Leaf is also useful in insect bite and skin disease. Extract of plant is used for stomach complaints. Whole plant mixed with black pepper is used for skin eruption, Alpaca and wounds.

56. **Oxalis latifolia** H.B. & K. (Oxalidaceae)
"Katti Buti"
Leaf is useful in gastric fever .Bulb is given as tonic.

57. **Parthenium hysterophorus** L. (Asteraceae)
"Gajar Grass"
Flowers are useful in nasal block in cold season. Leaves mixed with two or three pieces of garlic and made into fine paste, the paste is squeezed and juice put in ear to stop pus flow.

58. **P. amarus** Schumach. & Thonn. (Euphorbiaceae)
"Bhui-Amla"
The whole plant is used in dysentery, jaundice. Paste of whole plants on boils, sores, swelling and ulcers. Root extract is given in gastric disorder and indigestion.

59. **Phyllanthus virgatus** Forst.f. (Euphorbiaceae)

"Bhui Amla"

The whole plant is useful in cold and fever, paste of whole plant in piles. Leaves are applied in treatment of irritation on skin. Mixture of leaf, flowers and fruits is given in gonorrhoeal disorder.

60. **Physalis minima** L. (Solanaceae)

"Rasbhary"

Its fruits are given as a tonic. Mixture of leaf and stem is given in gastric disorder, also given in stomach pain. The whole plant is used in ear pain. Leaf used in fever.

61. **Polygala arvensis** Willd. (Polygalaceae)

Root is useful in treatment of cough, nervous disorder and asthma complaints. The whole plant is given in bronchitis. Leafpaste is given in swollen joints.

62. **Portulaca oleracea** L. (Portulacaceae)

The whole plant is a good blood purifying agent. Paste of whole plant is also useful for treatment of headache, fever, burns and burning sensation. Leaves are useful in fever and headache.

63. **Psoralea coryfolia** L. (Fabaceae)

"Bakkchi"

Seeds are very useful in leprosy, skin diseases and veterinary injuries and leucodermal treatment.

64. **Ranunculus sceeratus** L. (Ranunculaceae)

Leaf paste is applied in treatment of inflammation of skin. The whole plant is used as symbolic for destroying enemies.

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

"Arandi"

Hot leaves with coating of oil is applied on swelling leg. Extract of roots showed significant hypoglycaemic activity in albino rats.

66. **Rungia pectinata** (L.) Nees (Acanthaceae)

Mixture of leaf paste and milk is useful in treatment of small pox.

67. **Sida acuta** Burm.f. (Malvaceae)

Paste of flowers are given in boils and burns. Root paste is useful in snake bite and pain in back. Leaf is also given in gastric disorder and stomach pain.

68. **S. cordifolia** L. (Malvaceae)

"Mamas"

The whole plant is used in dysentery and gonorrhoea .Root paste is given in boils and wounds.

69. **Sida rhombifolia** L. (Malvaceae)

Root paste is applied on boils and cuts. Leaves are very useful in dysentery, swelling and wounds. Root extract is given for treatment of fever and as a tonic. Seed is used

as gum insecticide.

70. Solanum nigrum L. (Solanaceae)
"Makoi"
Leaf is used in dysentry, skin disease and stomach pain. Whole plant is useful in urine complaint and also in jaundice.

71. **Solanum surattense** Burm.f. (Solanaceae)
"Bhatkataiya"
Flowers with stamens are given in cough and cold. The whole plant is used in heart disorders and in swelling. Root is used in cold, fever and scorpine bite. Seeds are used in pain in jaws and pyrrhoea.

72. **Sonchus arvensis** L. (Asteraceae)
Leaf paste is given in cuts and injuries.Stem and whole plant is used as vegetables.

73. **Sphaeranthus indicus** L. (Asteraceae)
The whole plant is used in blood purifying, cough, gastric disorders and headache. Leaves are given in malarial treatment. Mixture of leaf and stem is given in fever. Flowers are given as tonic and act as cooling agent.

74. **Tephrosia purpurea** Pers. (Fabaceae)
Leaf paste is applied on wounds on goats and sheep. The plant axis is used in treatment of antidote to snake bite, in blood, purifying and tumor. Root extract is given for fever, stomach pain and toothache.

75. **Tribulus terrestris** L. (Zygophyllaceae)
Fruits are useful in asthma, cough, urinary diseases and liver complaints and are also for treatment of leucorrhoea and urine complaints.

76. **Trichosanthes cucumerina** L. (Cucurbitaceae)
"Rambel"
Mixture of leaf and root is given in treatment of heart disorders. Fruits are used in jaundice and as purgative. Root is used in stomach complaints.

77. **Trichodesma indicum** (L.) Br. (Boraginaceae)
The paste of whole plant is applied on boils. Leaves are useful in eczema and also edible. The whole plant is used as tonic for brain. Root extact is given in stomach pain. Fruit paste is applied on swelling.

78. **Tridax procumbens** L. (Asteraceae)
Paste of leaf is given in boils, cuts and wounds. Leaf is also useful in diarrhoea, dysentery and leprosy.

79. **Vernonia cinerea** (L.) Less. (Asteraceae)
The whole plant is useful in fever, piles and wounds. Plant axis is useful in cholera and dysentery. Powder of whole plant is given with cow milk to facilitate removal of kidney stones.

80. **Vicoa indica** (Willd.) DC. (Asteraceae)

Mixture of leaf and root is applied on headache. Leaves are given in stomach and kidney complaints. The whole plant is used in jaundice. Root is used in toothache pan and gum complaints.

81. **Zornia gibbosa** Span. (Fabaceae)

The whole plant is used in dysentery. Paste of whole plant is applied on healing of wounds, and sores. Root is used as sedative and spermatorrhoea.

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