



ISSN: 0975-766X  
CODEN: IJPTFI  
Review Article

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**REVIEW: SIGNATURE ON MEDICINAL PLANTS USED IN HYPERTENSION**

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Received on 20-08-2011

Accepted on 30-08-2011

**Abstract**

Hypertension is one of the most common disorders. Approximately one billion people world-wide are affected with hypertension. About 90-95% of cases are categorised as primary hypertension, which means with no obvious medical cause. Treatment of hypertension includes ACE inhibitors, alpha blockers, beta blockers, calcium channel blockers, diuretics etc. Drug therapy like many synthetic drugs and antihypertensive medicaments has a risk of causing side effects depending on the person as well as the type of drug being taken. These include dizziness, nausea, stomach problems, impotence, fatigue, insomnia, loss of appetite and others. There is a great deal of scientific evidence to suggest that the use of carefully chosen herbal remedies and dietary supplements can help to lower blood pressure, as well as to improve the overall functioning of heart, arteries and the entire cardiovascular system. Conventional medicines usually treat the symptoms of high blood pressure but seldom address the underlying causes. Naturopathy believes in removing the causes of high blood pressure with a combination of lifestyle changes and natural remedies, rather than simply treating symptoms. Hence the present article focuses on different medicinal plants worldwide used for hypertension rather than on medications.

**Keywords:** Hypertension, medication side effects, medicinal herbs.

**Introduction**

High blood pressure is a cardiac chronic medical condition in which the systemic arterial blood pressure is elevated above the normal.

**Table 1: Status of blood pressure.**

Stage	Systolic pressure	Diastolic pressure
Normal	120	80
Pre-hypertension	120-139	80-89
Stage I	140-160	90-100
Stage II	>160	>100

Hypertension means high pressure in the arteries that carry blood from pumping heart to all the tissues and organs of the body. Hypertension is mainly of two types:

**Primary or essential hypertension** has no specific cause which may contribute to increase in blood pressure.

**Secondary hypertension** is caused by underlying diseases like renal damage, pheochromocytoma, muscular disorders etc.

About 90-95% cases reported are of primary hypertension and remaining 5-10% is of secondary hypertension. Persistent hypertension is one of the risk factors for stroke, myocardial infarction, heart failure and arterial aneurysm and is leading cause of chronic kidney failure. Moderate elevation of arterial blood pressure leads to shortened life expectancy. These complications of hypertension are often referred to as end organ damage which is the end result of chronic high blood pressure. For this reason, diagnosis of high blood pressure is important, so efforts can be made to normalise blood pressure and prevent complications. Dietary and life style changes can improve blood pressure control and decrease the risk of associated health complications, although drug treatment may prove necessary in patients for whom life style changes prove ineffective or insufficient. The treatment include Angiotensin converting enzyme inhibitors, Angiotensin II receptor antagonists, Alpha blockers, Beta blockers, Calcium channel blockers, Diuretics, Direct rennin inhibitors, Vasodilators.

Conventional medicines usually treat the symptoms of high blood pressure but seldom address the underlying causes. Increasingly more people are becoming concerned about the long term harmful effects that blood pressure medications have on their body. In some cases the long term harmful effects can outweigh the

benefits, which is why large number of people are turning to natural treatments and remedies. Side effects of blood pressure medication include Dry cough, Dizziness, Swollen ankles, Tiredness, Depression, Insomnia, Impotence, Palpitations, Slow heartbeat, Constipation, Loss of taste, Headache, Gout, Kidney damage (rare).

Naturopathy believes in removing causes of high blood pressure with a combination of life style changes and natural remedies, rather than simply treating the symptoms. There is a great deal of scientific evidence to suggest that the use of carefully chosen herbal remedies and dietary supplements can help to lower blood pressure, as well as to improve the overall functioning of heart, arteries, and entire cardiovascular system. There are some advantages of natural medicine treatment over medicine such as:

Natural therapy is comparatively cheaper than modern remedies and treatments.

Complementary therapy is easily available.

Unlike allopathic remedies, natural and traditional medicines using herbs, vegetables and fruits are free from any unwanted, undesired side effects.

Natural remedy does not produce any reaction unless intake of such medicine is not followed as per advice.

Natural remedy is less likely to affect other bodily systems and hence comparatively safe.

Natural remedies, being general daily health supplements, not only help in curing the main disease but also soothe other body systems.

Holistic remedies help in rejuvenating and revitalising the human health.

Rather than working precisely on signs and symptoms, natural herbal remedies treat the root cause. Thus, helps in terminating health ailment permanently.

According to a WHO report, about 70-80% of the world's population rely on non-conventional medicine mainly from herbal sources in their primary health care. It is specially in the developing countries where the cost of consulting a western style doctor and the price of medication are beyond the means of most people<sup>1</sup>. A medicinal plant is factually any plant which in one or more of its parts contains substances that can be used for therapeutic purposes or which are precursors for the synthesis of direct therapeutic agents<sup>2</sup>.

Use of medicinal plant is increasing in many countries where 35% of drugs contain natural products.

Natural remedies have a huge demand across the globe due to its word-of mouth spread.

This article mainly focuses on the medicinal herbs used for hypertension in the world wide. More than 100 medicinal herbs from different families are used for treating hypertension. Though these plants are native of particular places, they can be cultivated as per the availability and need. The medicinal plants used in the treatment of hypertension are as following.

**Table 2: List of medicinal plants used in the treatment of hypertension.**

S. No	Plant name	Family	Local name	Part used	Uses	Native to
1	<i>Viscum album</i> <sup>3</sup>	Santalaceae -e	Mistletoe Bird lime All heal	Leaves, stem	Cardio active, nervine tonic, anti- tumour ,epilepsy	Europe, western& southern Asia
2	<i>Achillea millefolium</i> <sup>4</sup>	Asteraceae	Yarrow, devil's nettle, nose bleed plant	Aerial parts, young leaves	Diuretic,antiinflam matory,tonic ,in haemorrhage, amenorrhea,rheum atism,system relaxant	Northern hemispher e, new Mexico
3	<i>Crataegus monogyna</i> <sup>5</sup>	Rosaceae	Hawthorn, quick thorn, whitethorn, motherdie	Floweri ng tops, leaves, dried ripe fruits	Cardiotonic, in hypertension, angina, arrhythmia, decreases cholesterol	Europe, north west Africa, west Asia
4	<i>Allium sativum</i> <sup>6</sup>	Amarylida -ceae	Garlic	Cloves	In hypertension, asthma, diarrhoea, amenorrhea, migraine, rheumatism, diuretic anthelminthic	Central Asia, Africa, Europe
5	<i>Apium graveolens</i> <sup>7</sup>	Apiaceae	Celery	Petiole or root	Diuretic, in rheumatism, gout, cough, digestive	India, Europe

					aid	
6	<i>Olive europaea</i> <sup>8</sup>	Oleaceae	Olive tree, Masline, Zeytin	Leaves, oil, bark	Hypotensive, antiseptic, astringent, immunostimulant, emollient	Southeast Europe, west Asia, north Africa
7	<i>Parietaria officinalis</i> <sup>9</sup>	Urticaceae	Wall pellitory, lich wort	Leaves	Diuretic, emollient, in asthma, high BP	Mediterranean regions
8	<i>Viola odorata</i> <sup>10</sup>	Violaceae	Sweet violet, English violet, garden violet	root	Diuretic, emetic, expectorant, antipyretic, astringent, demulcent, diaphoretic, purgative, sedative	Europe, Asia, India, Australia North America
9	<i>Panax ginseng</i> <sup>11</sup>	Araliaceae	Yenshen, man root, red berry & five fingers	Root	Hypotensive, Circulatory stimulant, nervous tonic, adaptogenic, antioxidant	Eastern Asia, china, North America
10	<i>Juniperus communis</i> <sup>12</sup>	Cupressaceae	Common juniper	Berries	In high BP, type II diabetes, UTI rheumatism, diuretic, antiseptic	N. America, Europe, Asia
11	<i>Fumaria officinalis</i> <sup>13</sup>	Fumariaceae	Earth smoke, fumitory	Fruit	In hypertension, skin diseases, conjunctivitis	Western & central Europe
12	<i>Arthrospira platensis, maxima</i> <sup>14</sup>	Algae	Spirulina, cyanobacteria	-	Antioxidant, immunostimulant, hay fever, anti-inflammatory, hypotensive	Africa, Asia, South America
13	<i>Cynodon dactylon</i> <sup>15</sup>	Poaceae	Bermuda grass, devil's grass, dubo, grama	Whole plant	Antimicrobial, antiviral, hypoglycaemic, hypotensive, in UTI	Asia, Australia, India, S. Europe, N. America, Africa

14	<i>Hibiscus species</i> <sup>16</sup>	Malvaceae	Sorrel, rose mallow, flor de Jamaica	Leaves, root, flowers	Mild hypotensive, cough, prevent hair loss ,hair greying	Throughout the world
15	<i>Citrus limonum</i> <sup>17</sup>	Rutaceae	Lemon	Oil, fruit	In rheumatism, hypertension, anaemia, antiseptic, antimicrobial, hemostatic, diuretic	Asia
16	<i>Zea mays</i> <sup>18</sup>	Poaceae	Corn, maize	Corn silk	Diuretic, demulcent, tonic, in edema, kidney stones, lung cancer	Europe, America, Mexico, Australia, S. Africa.
17	<i>Oryza sativa</i> <sup>19</sup>	Poaceae	Asian rice	Seed	Brown rice lowers cholesterol, rice water in diarrhoea, dysuria, inflammation, dysentery	Asia
18	<i>Betula alba</i> <sup>20</sup>	Betulaceae	Birch	Leaves, inner bark, sap	Diuretic, in rheumatism, gout, kidney stones, bitter	Northern hemisphere
19	<i>Chicorium intybus</i> <sup>21</sup>	Asteraceae	Chicory, coffee weed	Root, flowers	Hypo-lipidaemic, hypoglycaemic, anti-inflammatory, anticancer, diuretic	Europe, Australia, N. America
20	<i>Lavendula officinalis</i> <sup>22</sup>	Lamiaceae	Lavender , lilac, violet	Essential oil	Hypotensive, antiseptic, anti-inflammatory, antiviral, in rheumatism, convulsions	Africa, Asia, south east India, Arabia
21	<i>Rauwolfia serpentina</i> <sup>23</sup> (sarpagandha)	Apocynaceae	snakeroot, chota -Chand	Root	Hypotensive, anxiolytic, tranquiliser, psychiatric diseases	Asia, America, India
22	<i>Capsella</i>	Brassicaceae	Shepherd's	Leaves	Diuretic,	E. Europe,

	<i>bursa pastoris</i> <sup>24</sup>	ae	purse		astringent, antipyretic, anti-haemorrhagic, uterine stimulant	Asia, China, N. Africa, N. America
23	<i>Leonurus cardiaca</i> <sup>25</sup>	Lamiaceae	Mother wort, throw wort, lion's ear	Aerial parts	Cardiac, nervine, uterine stimulant, sedative, vasodilator, anti – thyroid, tonic	Central Asia, world wide
24	<i>Hippophae rhamnoides</i> <sup>26</sup>	Elaeagnac -eae	Sea buckthorn, sand thorn, sea berry	Whole plant (berry)	Anticancer, antibacterial, antiulcer, hepatoprotective antiplatelet, anti-viral ,antioxidant, immunomodulatory	Europe – north west China
25	<i>Catharanthus roseus</i> <sup>27</sup>	Apocyanaceae	Periwinkle, vinca	Whole plant	Hypotensive, antineoplastic, anti-diabetic.	Africa, Asia, Europe, India, U.S.A
26	<i>Vaccinium corymbosum</i> <sup>28</sup>	Ericaceae	Blue berries	Berries	Hypotensive, antioxidant, anti-inflammatory	Asia, Europe, N.America
27	<i>Plantago lanceolata</i> <sup>29</sup>	Plantagina -ceae	Ribwort plantain, snake weed	Leaves, roots	Hypotensive, antibacterial, analgesic, antioxidant anti-inflammatory	America, Australia, India
28	<i>Urtica dioica</i> <sup>30</sup>	Urticaceae	Nettle	Roots, leaves	In hypertension, diabetes, asthma, U.T.I, renal diseases, bleeding, diarrhoea	Asia, Africa, Europe N.America
29	<i>Orthosiphon thymiflorus</i> <sup>31</sup>	Rhamiaceae	Misai kucing	Leaves	Diuretic, hypotensive, in rheumatism, gout, diabetes,	Southeast Asia, Australia

					antibacterial	
30	<i>Aeglemarmelos correa</i> <sup>32</sup>	Rutaceae	Bael,bilwa	Leaves	Hypotensive, antioxidant, anticancer, anti-inflammatory	India, southeast Asia
31	<i>Allium cepa</i> <sup>33</sup>	Amarylida -ceae	Onion, bulb onion	Bulbs	Antioxidant, anticancer, anti-inflammatory, ↓ cholesterol, in heart diseases	India
32	<i>Bambusa vulgaris</i> <sup>33</sup>	Poaceae	Golden bamboo	Leaves	Expectorant, astringent, cardi tonic, diuretic, aphrodisiac	Tropical Asia, china
33	<i>Bidensa pilosa</i> <sup>33</sup>	Asteraceae	Devil's needle	Leaf	Diuretic, hypotensive, hepatoprotective, antimicrobial, anti-inflammatory, antimalarial, in dysentery	S.America , tropical & subtropical areas
34	<i>Carica papaya</i> <sup>33</sup>	Caricaceae	Papaya	Leaf	hypotensive, diuretic, antifertility, in ulcer, amoebiasis, wound, antioxidant	Africa, Mexico
35	<i>Crescentia cujete</i> <sup>33</sup>	Bigoniaceae	Calabash	Leaf, fruit	Hypotensive, in asthma, diarrhoea, cough	Central & south America
36	<i>Cassia occidentalis</i> <sup>33</sup>	Caesalpina -ceae	Cassia	Seed	Tonic, febrifuge, purgative, diuretic, cough, convulsions	Central & south America
37	<i>Crysophyllum cainito</i> <sup>33</sup>	Sapotacea e	Star apple	Leaf	In angina, diabetes, pneumonia, febrifuge, constipation	



38	<i>Clerodendrum inerme</i> <sup>33</sup>	Verbenaceae	Indian privet, glory bower	Leaf	Inhypertension, diabetes, tumour, diarrhoea, malaria, inflammation, antioxidant	Seashore in tropical asia, pacific
39	<i>Coffea canephora</i> <sup>33</sup>	Rubiaceae	Conillon	Leaf	In parkinsonism, diabetes, cancer, obesity, mental disorder, hypertension	Africa, brazil, india Indonesia
40	<i>Cymbopogon citrates</i> <sup>33</sup>	Poaceae	Lemon grass	Leaf	Hypotensive, cytoprotective, antioxidant, hypnotic, anxiolytic, anti-inflammatory	Southeast Asia
41	<i>Garcinia kola</i> <sup>33</sup>	Clusiaceae	Bitter kola	Seed	Antispasmodic, in glaucoma, arthritis, antimicrobial	Tropical & subtropical moist lands
42	<i>Gmelina arborea</i> <sup>33</sup>	Verbenaceae	Beech wood	flower	Diuretic, in ulcer, leprosy, blood disorders, stomachic, galactagogue	India
43	<i>Jatropha gossypifolia</i> <sup>33</sup>	Euphorbiaceae	Physic nut	Leaf	Haemostatic, in eczema, itches	Africa, America, India
44	<i>Mangifera indica</i> <sup>33</sup>	Anacardiaceae	Mango	Leaf	Hypotensive, hypoglycemic, in allergy, cancer, antioxidant, antiviral, antifungal, anti-inflammatory	India, Africa, brazil, Portuguese
45	<i>Morinda lucida</i> <sup>33</sup>	Rubiaceae	Brimstone tree, moindo	Bark, stem	In diabetes, hypertension, ulcer, dysentery, leprosy, gonorrhoea	Senegal-Sudan, angola, Zambia
46	<i>Musa</i>	Musaceae	Banana	Fruit	In cancer, jaundice, renal calculi,	Topical, southeast

	<i>paradisiaca</i> <sup>33</sup>				produce dopamine	Asia
47	<i>Ocimum gratissimum</i> <sup>33</sup>	Lamiaceae	Hawaii	Leaves	Antibacterial, antidiabetic, anticancer hepatoprotective	African basil, wild basil
48	<i>Paullinia pinnata</i> <sup>33</sup>	Sapindaceae	–	Leaves	Vasodilator, antioxidant, anticonvulsant, antivenom	America
49	<i>Persea americana</i> <sup>33</sup>	Lauraceae	Avocado	Leaves	Hypotensive, hypoglycemic, analgesic, in convulsion, inflammation	Mexico, Puebla
50	<i>Phyllanthus amarus</i> <sup>33</sup>	Euphorbiaceae	Nela usrika	Leaves	Antiviral, hepatoprotective, diuretic, hypoglycaemic, in ulcer, dysentery	Tropics & subtropics in sandy regions
51	<i>Picralima nitida</i> <sup>33</sup>	Apocynaceae	Akuamma	Seed	Hypotensive, analgesic, antipyretic, anti-inflammatory	West Africa
52	<i>Rauwolfia vomitoria</i> <sup>33</sup>	Apocynaceae	–	Stem bark	In hypertension, cholera, CNS disorders	Congo , Africa
53	<i>Saccharum officinarum</i> <sup>33</sup>	Poaceae	Sugarcane, shunkora	Leaf	Diuretic, in cough , erectile dysfunction	Tropical Asia
54	<i>Schrankia leptocarpa</i> <sup>33</sup>	Mimosaceae	–	Leaves	Antioxidant, antibacterial, in malaria, hypertension	Asia, africa, America
55	<i>Sida acuta</i> <sup>33</sup>	Malvaceae	Wire weed	Leaf	Analgesic, diuretic, hypotensive, astringent, in ophthalmia,	Central America, pantropic distributed

					rheumatism, cystitis, hematuria, colic , gonorrhoea	
56	<i>Solanum americanum</i> <sup>33</sup>	Solanaceae	American night shade	Leaf	In hypertension, asthma, epilepsy, arthritis, inflammation, liver diseases	America, africa, china, hawaii
57	<i>Solanum lycopersicum</i> <sup>33</sup>	Solanaceae	Tomato	Leaf	Antioxidant, anticancer, in lower UTI, neurodegenerative disorders	South America
58	<i>Solenostemon monostachyus</i> <sup>33</sup>	Lamiaceae	–	Leaf	Antioxidant, sedative, stomachic, in fever, rheumatism, dysmenorrhoea, cough, snake bite	Africa
59	<i>Terminalia catappa</i> <sup>33</sup>	Combretaceae	Beach/sea almond, indian almond	Leaf	Antioxidant, in dysentery, diarrhoea, cancers, liver diseases	Africa, Asia, Australia, India
60	<i>Trema orientalis</i> <sup>33</sup>	Ulmaceae	Pigeon wood	Leaf	In asthma, dysentery, arthritis hypoglycaemic, analgesic, hypotensive	S. Africa, china, India, Australia
61	<i>Vernonia amygdalina</i> <sup>33</sup>	Asteraceae	Bitter leaf	Leaf	Blood purifier, in atherosclerosis, diabetes, AIDS, uterine tonic	America, Mexico
62	<i>Taraxcum officinale</i> <sup>34</sup>	Asteraceae	Dandelion	Root, leaf	Diuretic, hepatoprotective, in anaemia, jaundice, tumour, anti-inflammatory	Temperate regions of world
63	<i>Oenothera</i>	Onagraceae	Evening	Whole	Hypotensive,	North &

	<i>biennis</i> <sup>35</sup>	-e	primrose	plant	astringent, sedative, in asthma, wound healing, g.i disorder	south America
64	<i>Astragalus membranaceus</i> <sup>36</sup>	Fabaceae	Yellow vetch	Root	Hypotensive, antiviral, diuretic, hepatoprotective, anti-inflammatory	Temperate regions of northern hemisphere
65	<i>Passiflora incarnata</i> <sup>37</sup>	Passifloraceae	Passion flower, maypop	Flower	Hypotensive, anxiolytic, antispasmodic, in convulsions, inflammation, vermifuge	Argentina, Brazil, Southern USA
66	<i>Tribulus terrestris</i> <sup>38</sup>	Zygophyllaceae	Puncture vine, devil's thorn, caltrop	leaves	Diuretic, nervine tonic, analgesic, in asthma, inflammation, hypotensive	S.asia, Africa, Australia, S.europe
67	<i>Skulterceria species</i> <sup>39</sup>	Labiatae	Skull cap	Whole plants	Hypoensive, antispasmodic, antipyretic anti-inflammatory	North America
68	<i>Peganum harmala</i> <sup>40</sup>	Nitrariaceae	Syrian rue	Seeds	Analgesic, antiinflammatory, anticancer, antiprotozoal, abortifacient, antidepressant	India
69	<i>Valerian officinalis</i> <sup>41</sup>	Valerianaceae	Garden valerian	Root	Anti-inflammatory, antispasmodic, hypotensive, antiemetic, hypnotic,	Europe, parts of Asia, N.America
70	<i>Yucca species</i> <sup>42</sup>	Asparagaceae	Yucca	Roots, leaves	↓ cholesterol, anti-inflammatory, analgesic, in arthritis,	Hot & dry parts of America,

					hypotensive	Caribbean
71	<i>Curcuma longa</i> <sup>36</sup>	Zingiberac -eae	Turmeric, Indian saffron	Rhizom e	Hypotensive, anti- inflammatory, anti -cancer, antioxidant	Tropical south Asia
72	<i>Grifola frondosa</i>  <i>Lentinus edodes</i> <sup>36</sup>  <i>Ganoderma spp</i>	Polyporac- eae	Maitake  Shitake  Reishi	Fruiting bodies	Hypotensive, anticancer, antiviral, Adaptogen, immune stimulant, immuno Modulator	Japan, N.America , Asia
73	<i>Piscidia erythrina</i> <sup>43</sup>	Legumino -sae	Jamaican dog wood		Hypotensive, in insomnia, pain	America, west indies ,Caribbean
74	<i>Bontia daphnoides</i> <sup>44</sup>	Myoporac -eae	Olive bush White alling	leaves	In Diabetes, hypertension, jaundice	North America ,Florida
75	<i>Aloe vera</i> <sup>44</sup>	Lilliaceae	Aloes	Leaf gel	Hypotensive, in diabetes, ulcer, burns, immunostimulant	Sudan, Africa, India
76	<i>Cercopia peltata</i> <sup>44</sup>	Cercopiac- eae	trumpet tree	leaves	Hypotensive, Wound healing	Central & S.America
77	<i>Annona muricata</i> <sup>44</sup>	Annonace- ae	Sour sop, graviola ,guanaba	Leaves, fruit, root, seeds	Hypotensive, in cancer, depression, convulsions	Central America, Caribbean
78	<i>Artocarpus altilis</i> <sup>44</sup>	Moraceae	Bread fruit	Leaves	In Hypertension	Phillipines , Asia
79	<i>Bixa orellana</i> <sup>44</sup>	Bixaceae	Roucou	Leaf, root	In hypertension, diabetes, jaundice	Tropical regions of America

80	<i>Citrus paradisi</i> <sup>44</sup>	Rutaceae	Grape fruit	Peel	Hypotensive	America
81	<i>Cola nitida</i> <sup>44</sup>	Sterculaceae	Obie seed	Seed	Hypotensive	Rainforest of Africa
82	<i>Gomphrena globosa</i> <sup>44</sup>	Amaranthaceae	Bachelor button	Leaves	Hypotensive, antitussive, antiasthmatic	Brazil, panama, Guatemala
83	<i>Kalanchoe pinnata</i> <sup>44</sup>	Crassulaceae	Air plant	Leaves	Hypotensive, immunosuppressive	Madagascar
84	<i>Morus alba</i> <sup>44</sup>	Moraceae	Pawi bush, white mulberry	Fruit	Diuretic, Hypotensive, in diabetes, constipation	Northern China
85	<i>Nopalea cochenillifera</i> <sup>44</sup>	Cactaceae	Rachette	joint	Hypotensive, antifungal, antibacterial	America
86	<i>Passiflora quadrangularis</i> <sup>44</sup>	Passifloraceae	Barbadine	Leaves	Hypotensive, sedative, stomachic, in asthma, diarrhoea	Tropical America
87	<i>Ocimum campechianum</i> <sup>44</sup>	Lamiaceae	Ti born	Leaves	Hypotensive	America
88	<i>Tamarindus indica</i> <sup>44</sup>	Fabaceae	Tamarind	Leaves	In ↑BP, diabetes, asthma, astringent	Africa-Asia
89	<i>Alstonia scholaris</i> <sup>45</sup>	Apocynaceae	Tombolik	Root	In hypertension, diabetes, malaria	India, south east Asia
90	<i>Centella asiatica</i> <sup>45</sup>	Umbelliferae	Pegagoh	Leaves	Diuretic, in UTI diarrhoea, high BP	Srilanka, Australia, India etc.
91	<i>Morinda citrifolia</i> <sup>45</sup>	Rubiaceae	Bingkudu	Root	In hypertension, ulcer, tooth decay	Southeast Asia

92	<i>Phyllanthus niruri</i> <sup>45</sup>	Euphorbia -ceae	Nipon-nipon	leaves	In malaria, hypertension	Coastal areas
93	<i>Leucosyke captilleta</i> <sup>45</sup>	Urticaceae	Mandahasi	Leaves	In diabetes, hypertension	Philippine s
94	<i>Physallis minima</i> <sup>45</sup>	Solanacea- e	Tulapak	Leaves	In diabetes, malaria, hypertension	India, Africa, Ceylon
95	<i>Vitex pubescens</i> <sup>45</sup>	Verbenace -ae	Hairy leaf molave	Leaves	Hypotensive, analgesic, anti-inflammatory	Banglades h, Thailand India etc
96	<i>Ajuga iva</i> <sup>46</sup>	Lamiaceae	Bugle iva, herb ivy	Whole plant	Hypoglycaemic, anti-inflammatory, hypotensive, in ulcer	N.Africa, Egypt, Europe
97	<i>Carum carvi</i> <sup>46</sup>	Apiaceae	Meridian fennel	Fruits	Hypotensive, antiseptic, analgesic, antihistaminic	W.asia, Europe, Africa
98	<i>Nigella sativa</i> <sup>46</sup>	Ranuncula -ceae	Black seeds	seeds	Diuretic, hypotensi-ve, carminative etc.	S & south west Asia
99	<i>Rosemarinus officinalis</i> <sup>46</sup>	Lamiaceae	Rosemary ,old man	leaves	Anticancer, anti- inflammatory	Mediterran ean region
100	<i>Origanum majorana</i> <sup>46</sup>	Lamiaceae	Sweet majoran	leaves	Antioxidant, in ↑BP diabetes, cancer	Mediterran ean region
101	<i>Phoenix dactylifera</i> <sup>46</sup>	Arecaceae	Date palm	Fruit	Antioxidant, anti inflammatory, cytoprotective etc	Persian gulf
102	<i>Gentiana kochiana</i> <sup>46</sup>	Gentianac- eae	Trumpet gentian	leaves	In hypertension, cancer, diarrhoea, gatrinitis, sinusitis	Central & S.Europe
103	<i>Psidium guajava</i> <sup>47</sup>	Myrtaceae	Apple guava	Fruit	Antioxidant, in↑BP, hypoglycaemic,	Central & S.America

					diarrhoea, spasms	
104	<i>Piper guineense</i> <sup>47</sup>	Piperaceae	West African pepper	Seeds	Antifungal, hypotensive	West Africa
105	<i>Talinum triangulares</i> <sup>47</sup>	Portulacac -eae	Water leaf ,Ceylon spinach	Leaves	Antioxidant, hepatoprotective, hypotensive	Mexico, carribbean, S.america
106	<i>Senna</i> <sup>47</sup> <i>occidentalis</i>	Fabaceae	Coffee weed	Seeds, root, leaves	Hypotensive, laxative, hepatoprotective.	America, India, Brazil, Africa
107	<i>Euphorbia hirta</i> <sup>47</sup>	Euphorbiaceae	Tawa- tawa	Whole plant	In asthma, diabetes, hypertension	Philippines
108	<i>Peperomia pellucida</i> <sup>47</sup>	Piperaceae	Elder pepper	Fruits	Analgesic, hypotensive, anti-inflammatory	America, Asia, Philippines
109	<i>Ficus exasperata</i> <sup>48</sup>	Moraceae	Brahma's banyan	Leaves	In hypertension, arthritis, ulcer, etc.	Africa, Arabia, India, Ceylon
110	<i>Heliotropium indicum</i> <sup>48</sup>	Boraginac eae	Indian heliotrope	Whole plant	In hypertension, rheumatism, lung diseases, anticancer	Asia
111	<i>Afromomum melegueta</i> <sup>48</sup>	Zingiberac eae	Grains of paradise	Seeds	In hypertension, leprosy, measles etc.	West Africa



112	<i>Justicia</i> <sup>48</sup> <i>schimperiana</i>	Acanthaceae	–	Leaves	Hypotensive	America
113	<i>Cystisus scoparius</i> <sup>49</sup>	Leguminosae	Green broom, Irish tops	Tops, whole plant	Diuretic, bladder and kidney infection	England, Europe, northern Asia
114	<i>Cimicifuge racemose</i> <sup>50</sup>	Ranunculaceae	Black cohosh	Roots and rhizomes	Pre-menstrual syndrome, mood stabilizer, tinnitus	North America and Europe
115	<i>Angelica sinensis</i> <sup>51</sup>	Apiaceae	Dong quai, female ginseng	Fruits, leaves, rhizomes	Gynaecological disorders, asthma, anaemia	China
116	<i>Caulophyllum thalictroides</i> <sup>52</sup>	Berberidaceae	Blue cohosh, papoose root	Root and rhizomes	Contraceptive, hypotensive	United states
117	<i>Hyssopus officinalis</i> <sup>53</sup>	Labiatae	-	Essential oils	Emmenagogue , expectorant	Middle east
118	<i>Andrographis paniculata</i> <sup>54</sup>	Acanthaceae	Kalmegh	Aerial parts, roots	Hypoglycaemic, Hepatoprotective, Anti-cancer	India, Sri Lanka

## Conclusion

The various plants available in the vicinity of the forest area have been collected and characterized into a specific order including botanical name, vernacular name, local name, family, characterization, plant part showing activity, pharmacological action. [Table: 2].

It was estimated that, the demand for herbal medicines and plant-based pharmaceuticals will reach 4500 billion dollars in worldwide sales through the year 2000.

Though there are many biogenic approaches for treatment of Hypertension indigenously it is pertinent to make it socially acceptable is difficult one because of its availability & identification. The pharmacists must take care in this aspect and try to make it into a suitable dosage form, which can improve compliance. Traditionally intake of some of these has being cultured through our system, it is necessary to propagate the significance and importance of these bio-intakes to the coming generation is explicitly so that the propagation of these beneficial effects will take on its own course of time. The market potentiality of certain drugs like *Andrographis paniculata*, *Tamarindus indica*, *Aloe vera*, *Curcuma longa*, is really demanding. Certain traditional ayurvedic drugs like *Terminalia chebula*, *Hibiscus species*, *Oryza sativa* and other 20 species which are mentioned in the table2 are having equal demand in the current market scenario of India. As per our literature most of the plants belongs to lamiaceae, poaceae and acanthaceae families. It helps the scholars for their studies on herbal drugs.

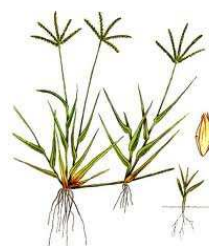
**Figures: Images of plants those are native to India.**



*Apium graveolens*



*Viola adorata*



*Cynodon dactylon*



Lavender



Nettle



Bael



*Coffea canephora*



*Gmelina arborea*



*Jatropha gossypifolia*



*Terminalia catappa*



*Trema orientalis*



*Peaganum harmala*



*Alstonia scholaris*



*Centella asiatica*



*Physalis minima*



*Vitex pubescens*



*Senna occidentalis*



*Aloe vera*



*Hibiscus species*



*Rauwolfia serpentine*



*Catharanthus roseus*



*Allium cepa*



*Mangifera indica*



*Andrographis  
paniculata*



*Curcuma longa*



*Tamarindus indica*

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