

Brief introduction of selected plants

i) Medicinal plants:

1 *Acalypha indica* L.

Family: Euphorbiaceae

Active compounds: Tannins, phlobotannin, saponins, flavonoids, terpenoids, cardiac glycosides and steroids (Tamil et al. 2012)

Pharmacological use: Pneumonia, asthma, rheumatism (Chopra et al. 1956), antifungal (Sakhati et al. 2011)



2 *Adhatoda vasica* (L.) Nees

Family: Acanthaceae

Active compounds: Alkaloids like vasicine, two major alkaloids called vasicine, vasicinone.

Pharmacological use: Used in Cough and bleeding, in excessive menstruation-bleeding piles (Sampath et al. 2010)



3 *Andrographis paniculata* (Burm.f.) Nees

Family: Acanthaceae

Active compounds: Include over 20 diterpenoids and over ten flavonoids Andrographolide, deoxyandrographolide, neoandrographolide, isoandrographolide

Pharmacological use: Antipyretic, Anti-inflammatory, antidiarrhoeal, immune-stimulatory, anti-HIV, anti-malarial hepatoprotective, cardiovascular (Pholphana et al. 2004)



4 *Aerva lanata* (L.) Juss. ex Schult.

Family: Amaranthaceae

Active compounds: Canthin-6-one and beta-carboline, aervine, methylaervine, aervoside

Pharmacological use: Anthelmintic, anti-inflammatory, diuretic, expectorant, hepatoprotective, nephroprotective, anti-diabetic, anti-microbial, cytotoxic, urolithiatic, antihyperlipidaemic (Yamunadevi et al. 2011)



5 *Asparagus racemosus* Willd.

Family : Liliaceae

Active compounds: Shatavarins I–IV), isoflavones, asparagamine, racemosol (Chawala et al. 2011)

Pharmacological use: Galactagogue, Aphrodisiacs, demulcent, rheumatism, diarrhoea, dysentery, tuberculosis, diabetes, antioxidant, anti-tussive, nervous disorders, hyperacidity, general debility, habitual abortion and safe delivery



6 *Artemisia annua* L.

Family: Asteraceae

Active compounds: Different terpenoids such as artemisinin, flavanoids, (Biesen 2010)

Pharmacological use: Anti-malarial (Biesen 2010)



7 *Boerhaavia diffusa* L.**Family :** Nyctaginaceae

Active compounds: Punarnavine, boeravinone A-F hypoxanthine 9-Larabinofuranoside, ursolic acid, punarnavoside, liirodendrin, β -Sitosterol, α -2-sitosterol, urosilic acid, hentriacontane, β -Ecdysone, triacontanol

Pharmacological use: Anti-inflammatory, antibacterial, cardiotonic properties, elephantiasis, night blindness, corneal ulcers (Murti et al. 2010)

8 *Catharanthus roseus* (L.) G. Don**Family :** Apocynaceae

Active compounds: more than 100 monoterpenoid indole alkaloids (MIAs) including alkaloids used in cancer chemotherapy (Jaleel et al. 2009)

Pharmacological use : Diabetes, menstrual regulators, hypertension, cancer and antilactagogue (Aslam et al. 2010)

9 *Chlorophytum borivilianum* San. and Fern.**Family:** Liliaceae

Active compounds: Saponins of stigmasterol and sarsasapogrnin with sugars as xylose, arabinose and glucose

Pharmacological use: as tonic, important ingredient of 35 Ayurvedic and unani preparation (Chakraborty et al. 2009)



10 *Coleus forskohlii* Briq.**Family:** Lamiaceae**Active compounds:** diterpenoids viz., deactylforskolin, 9 - deoxyforskolin, 1, 9- deoxyforskolin, 1, 9 - dideoxy - 7- deacetylforskolin, forskolin**Pharmacological use:** in dysentery and digestive disorders, expectorant, emmenagogue, diuretic, stomach and intestinal disorders (Kavitha et al. 2010)11 *Curculigo orchoides* Gaertn.**Family:** Amaryllidaceae**Active compounds:** hentriacontanol, srtosterol, stigmasterol, cycloartenol, sucrose and a new phenolic glycoside, named corchioside A**Pharmacological use:** tonic, restorative, in piles, diarrhoea, Jaundice, asthma, poultice, skin diseases (Garg et al. 1989)12 *Dioscorea alata* L.**Family :** Dioscoreaceae**Active compounds:** Canthin-6-one and beta-carboline, aervine, methylaervine, aervoside, aervolanine, propionic acid)**Pharmacological use:** Used As Anthelmintic, Demulcent, Anti-inflammatory, Diuretic, expectorant, hepatoprotective, Nephroprotective, Anti-Diabetic, Antihyperglycaemic, Anti-microbial, Cytotoxic (Bradbury and Hammer 1990)

13 *Enicostemma littorale* Blume**Family:** Gentianaceae**Active compounds:** alkaloids, catechins, saponins, sterols, triterpenoids, phenolic acids, flavonoids and xanthenes.**Pharmacological use:** Bitter tonic, febrifuge, anthelmintic, carminative, mild laxative and antimalarial agent, substitute of cinchona bark and *Swertia chirata*, antifungal (Gopal et al. 2011)14 *Euphorbia hirta* L.**Family:** Euphorbiaceae**Active compounds:** Flavonoids like Euphorbianin, leucocyanidol, quercitrin, quercitol, Triterpenes and phytosterols: β -Amyrin, 24-methylenecycloartenol, β -Sitosterol**Pharmacological use:** respiratory ailments, cough, female disorders, dysentery, gonorrhoea, jaundice, Pimples, digestive problems, tumours (Kirtikar and Basu 1991)15 *Solanum nigrum* L.**Family:** Solanaceae**Active compounds:** polyphenolics like flavonoids and steroids, solamargine, solasonine.**Pharmacological use:** antitumor properties (liver cancer, breast cancer, lung cancer, stomach cancer, colon cancer, bladder cancer), hepatoprotective, anti-inflammatory agent (Ikeda et al. 2000)

16 *Synedrella nodiflora* (L.) Gaertn.**Family:** Asteraceae**Active compounds:** steroids, reducing sugars, phenolic compounds, saponins, tannins, alkaloids, aromatic acids.**Pharmacological use:** The leaves are used as rheumatism and juice of the leaves is used for earache (Rathi and Gopalkrishnan 2006)17 *Tinospora cordifolia* (Willd.) Miers ex Hook. F. & Thoms**Family:** Menispermaceae**Active compounds:** Bebeerine, berberine, palmatine (Daniel 1990)**Pharmacological use:** dyspepsia, fever, urinary diseases, stimulates bile secretion, vomiting, enriches the blood and cures jaundice, anti-dote to snake bite and scorpion sting, anti-spasmodic, anti-allergic, anti-inflammatory, anti-leprotic (Singh et al. 2003)18 *Urginea indica* (Roxb.) Kunth**Family:** Liliaceae**Active compounds:** Sulphur compounds, phenolic compounds, saponins, flavonoids like quercetrin**Pharmacological use:** Wound healing, inflammation, disturbances in Gastrointestinal tract, Anti-allergic and (Panduranga et al. 2011)

ii) Test plants

- 1 ***Raphanus sativus* L.:** Commonly called as radish, is cultivated for utility of its tap root as vegetable. It is propagated by seeds. Radish was selected as a test plant as it is very sensitive to allelochemicals at low concentrations and has been extensively used as a test plant or a model plant in various allelopathic studies (Barnes and Putnam 1987; Tsuzuki et al. 1995; Haugland and Brandsaeter 1996; Hong et al. 2003; Chiapusio et al. 2004; Khanh et al. 2005; Gao et al. 2009; Othman et al. 2012).



- 2 ***Chloris barbata* Sw.:** It belongs to family Poaceae and is commonly known as swollen finger grass. It is a tufted annual grass, with lanceolate leaves, spikes about 6cm long, floral glumes densely hairy, awned, grains are oblong. The plant rapidly propagates through grains and is frequently found growing in the managed and unmanaged systems. This monocot weed was selected as a test plant as it is a rapidly propagating grass with high seed output and found to grow as weed among the major crop of area. Germination vigour of the grains is also high.



Sr. No.	Medicinal plant	Abbreviation (Genus species)
1	<i>Acalypha indica</i> L.	Ai
2	<i>Adhatoda vasica</i> (L.) Nees	Av
3	<i>Aerva lanata</i> (Linn.) Juss. ex Schult	Al
4	<i>Andrographis paniculata</i> (Burm.f.) Nees	Ap
5	<i>Asparagus racemosus</i> Willd.	Ar
6	<i>Artemisia annua</i> L.	Aa
7	<i>Boerhaavia diffusa</i> L.	Bd
8	<i>Catharanthus roseus</i> (L.) G. Don	Cr
9	<i>Chlorophytum borivilianum</i> San. and Fern.	Cb
10	<i>Coleus forskohlii</i> Briq.	Cf
11	<i>Curculigo orchioides</i> Gaertn.	Co
12	<i>Dioscorea alat</i> L.	Da
13	<i>Enicostemma littorale</i> (Blume)	El
14	<i>Euphorbia hirta</i> L.	Eh
15	<i>Synedrella nodiflora</i> (L.) Gaertn.	Sy.n
16	<i>Solanum nigrum</i> L.	So.n
17	<i>Tinospora cordifolia</i> (Willd.) Miers ex Hook. F. & Thoms	Tc
18	<i>Urginea indica</i> (Roxb.) Kunth.	Ui