

ANNEXURE

Three groups of plants were used for the study: 1) Medicinal Plants 2) Weeds and 3) Legumes. A short description for all is given below.

1. Medicinal plants:

a) *Scientific name- Artemisia annua L.*

Family- Asteraceae

Common name- Sweet wormwood

Habit - Annual Herb (Cultivated in India)

Active chemical compound- Sesquiterpenoids (Artemisinin), other Terpenoids, coumarins, flavones, flavonols, Phenols. (Biesen, 2010)

Medicinal use-

Used for antimalarial drug. Other than this it is also reported to show anticancerous, anti asthmatic, antifungal and antimicrobial activity. (Biesen, 2010)

b) *Scientific name- Tridax procumbens L.*

Family- Asteraceae

Common name- Coat button, Tridax daisy

Vernacular name- Ghamra

Habit – A small perennial Herb, (Available in wild throughout India).

Active chemical compound- Alkaloids, flavonoids (quercetin, procumbenetin), tannins and micro minerals. (Kuldeep and Pathak, 2013)

Medicinal use- Used in Ayurveda and has been found to possess significant medicinal properties against blood pressure, bronchial catarrh,

malaria, dysentery, diarrhea, stomach ache, headache, wound healing, It has anticancerous and anti diabetic activity(Kumar *et. al.*, 2012)

c) Scientific name- *Swertia chirata* Buch – Ham

Family- Gentianeaceae

Common name- chirata

Vernacular name- chirayta, kariyata

Habit- An erect annual herb. (Wildly available in North east Himalayas and cultivated on large scale in Central India)

Active chemical compound- Alkaloids and flavanoids, **ophelic acid**, glucosides, chiratin and amarogentin, phenols, swertanone, swertenol, ursolic acid.(Sobia *et al.*,2012).

Medicinal use- It is used as tincture and infusions. In ayurveda , it is described for its cooling effect for liver and blood and for gastrointestinal infections. It is also good for fever and skin problems. Used as antidiabetic and antimalarial drugs also (Sobia et al, 2012).

c) Scientific name- *Ocimum sanctum* L.

Syn Ocimum tenuiflorum

Family- Lamiaceae

Common name- Holy basil

Vernacular name- Tulsi

Habit – Small Herb (Cultivated throughout India.)

Active chemical compound of this herb include ursolic acid,and essential oil like eugenol, oleanolic acid, rosmarinic acid, linalool and carvacrol. The plant also contains β -caryophyllene, β -elemene and germacrene D. (Rehman *et. al*, 2011)

Medicinal use- Different parts of Tulsi plant e.g. leaves, flowers, stem, root, seeds etc. are known to possess therapeutic potentials and have been used, by traditional medical practitioners, as expectorant, analgesic, anticancer, antiasthmatic, antiemetic, diaphoretic, antidiabetic, antifertility, hepatoprotective, hypotensive, hypolipidmic and antistress agents. Tulsi has also been used in treatment of fever, bronchitis, arthritis, convulsions (Rehman *et al.*, 2011)

d) Scientific name- *Tephrosia purpurea* (L.) Pers.

Common name- Wild Indigo.

Vernacular name- Sarpankho

Morphology- Wildly available Perennial Herb

Active chemical compound- Leaves and roots contain glycosides- tephrosin, and Flavanoids (Rastogi & Mehrotra, 1993)

Medicinal use- it is utilised mainly to cure liver (Jain *et al.*, 2010) and skin disease (Kumar *et al.*, 2007), anti-inflammatory, anti-ulcer (Parmar *et al.*, 1998), antibacterial, antiviral wound healing properties (Santram *et al.*, 2010).

2. Weeds

a) **Scientific Name:** *Acalypha indica* L.

Common name: Indian acalypha, three seeded mercury

Family: Euphorbiaceae

Ecological status: It is native herb of south East Asian countries and Africa. Found as common weed in many crop fields.

b) **Scientific Name:** *Amaranthus spinosus* L

Common name: Spiny Pigweed

Family: Chenopodiaceae

Ecological status: It is native to the tropical America, but now present as noxious weed in India.

c) **Scientific Name:** *Chloris barbata* Sw.

Common name: Peacock plum grass

Family: Poaceae

Ecological status: It is a common weed in coastal zone and tropical region of the country. It is found in dryland field crops, pastures, wastelands, roadsides, borders of plantation crops. (Sohmer and Gustafson, 1987).

c) **Scientific Name:** *Dichanthium annulatum* (Forssk.) Stapf.,

Common name: Delhi Grass, Santa Barbara grass

Family: Poaceae

Ecological status: Mostly grows in grass lands and used for fodder but also occur as a weed in crop fields.

d) **Scientific name:** *Parthenium hysterophorus* L.

Common name: Carrot Grass

Family: Asteraceae

Ecological status: Noxious and Invasive weed in every possible agriculture land, barren fields, road sides and ground.

3. **Legumes** are the most important plant based dietary food for protein source. They are also utilised for oil and fodder purpose. As per the FAO source India is the leading country in legume production with 8832500MT/ year. As per the

ICAR date of 2013 -14, pulse cultivation area in India was 9.93 Million Ha,
Pulses have fast growth rate and short life cycle.

Selected legumes for primary screening are listed below with their protein
content

Scientific Name of Legume	Common Name	Protein Content (g) In Mature Raw Seed Per 100g
<i>Cicer arietinum</i> L.	Chick Pea (CP),	19
<i>Vigna aconitifolia</i> (Jacq.) marechal	Moth Bean (MB),	22.94
<i>Dolichos lablab</i> L.	Lablab Bean (LB),	23.90
<i>Pisum sativum</i> L.	Green Peas (GP),	23.82
<i>Vigna mungo</i> L.Heeper .	Black Gram (BG),	25.21
<i>Lens esculenta</i> Moench.	Lentil (LE),	24.63
<i>Cajanus cajan</i> L	Pigeon Pea (PP),	21.7
<i>Vigna unguiculata</i> L.Walp	Cow Pea (CP) ,	23.85
<i>Vigna radiata</i> L. R.Wilczek	Green Gram (GG) ,	23.86
<i>Cyamopsis tetragonolobus</i> L.	Cluster Bean (CB).	23

* As per USDA report data