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Research Article

Observations on the Dicotyledonous Weed Flora of CMPRH, Indira Nagar, Emerald, The Nilgiris

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Abstract

The Present paper deals with weeds of cultivated fields of *Rosemary, Cineraria, Achillea, Thymus* and *Digitalis* occurring in and around the CMPRH garden in Emerald, The Nilgiris District. A total number of 78 Plants species belonging to 29 families have been recorded. These species have been enumerated alphabetically with correct binomial followed by brief description, Phenology and distribution. The Dominant family Asteraceae contains 26 species followed by Solanaceae 8 species, Caryophyllaceae 5 species, Brassicaceae, Oxalidaceae, Amaranthaceae, Polygonaceae 3 species each, Fabaceae, Rosaceae, Verbenaceae, Plantaginaceae, Amaranthaceae, families are represented by two species each remaining families are represented by single species each. The most commonly reported species are *Spergula arvensis* L., *Xerochrysum bracteatum* (Vent.) Tzvelev, *Bidens pilosa* L., *Erigeron canadensis* L. *and Hypochaeris glabra* L., *Centella asiatica* (L.) Urban., *Wahlenbergia marginata* (Thunb.) A. D C., *Spermacoce hispida* L., *Leucas aspera* L. and *Coronopus didymus* (L.) Smith. were compete with *Rosemary, Cineraria, Achillea, Thymus* and *Digitalis* crops for nutrients and space and bringing down the yields.

INTRODUCTION

A weed is a plant growing where it is not desired. The history of weeds is a history of man's efforts to collect or cultivate food. The problem of weeds is as old as the cultivation itself. Weeds compete with crops in which they grow for their resources like air, water, sunlight, mineral, nutrients, space, alleopathic effects and other soli content etc, increasing crop pest's harmful effect on human and animals. Ultimately this results in reduce crops yield, poor quality of produce by way of admixture and adulteration with weed seeds etc, and consequently in less market value. In addition weeds being hosts to several pathogens and other insect pests which are considered to be the natural enemies during the development of crop plants. They are harmful to human being also. The costs of removing weeds add to the cost of production of crops. Some weeds are also utilized by man in developing countries for medicinal, purposes but this does not in any way lower undesirable nature of weeds or reduce our concern towards them as harmful plants. Weeds cause great harmful effect in different ways and affect human being adversely either directly or indirectly. It has been claimed that weeds alone cause more agricultural losses than all other pests put together (Ajai Kumar Singh *et al*., 2009). Weeds indirectly elevate farm production costs through energy spents in controlling them. Further the negative values of weeds are depicted during, harvesting, marketing, storage and dockage of the weedy crops.

Earlier studies on the weed flora of the South India and Nilgiris district are scanty (Ramar Govindarajan *et. al.*, 2011, Manorama *et. al.*, 2010; Victor *et al.*, 2008 and Jery Thomas *et al.*, 1999).

The work on weeds has been done by many workers in India (Jain, 1980; Jain and Singh 1982; Mukhopadhyay 1965; Pandey 1956 a, b; Singh and Sing 1983; Singh and Jain 1986; Verma and Bharadwaj, 1959) But very few attempts have been made so far in medicinal and aromatic crops.

Since 1980, experiment on homoeopathic medicinal plants are being conducted in CMPRH Research unit. The most common among them are *Rosemarry, Cineraria, Achillea, Thymus* and *Digitalis, Cymbapogan spp. Mentha spp, Pelargonium graveolens, Vetiveria zizanoides, Artimisea annua.* Many physical and chemical measures are being applied for the control of weeds in Homeopathic medicinal plants and other medicinal and aromatic crops. The most commonly and noxious weeds like *Spergula, Helichrysum, Bidens, Erigeron, Hypocharis, Solanum* etc. reported in and around cultivated fields of CMPRH and these weeds are troublesome. The most of the man power are used in eradicating these weeds from cultivated field through labourers.

Floristic surveys of CMPRH in and around areas were done during the present study. Various literatures have been consulted for weed taxa. In the control of weeds one must be well acquainted with their systematic and phenology, with this in view, a survey of undertaken of the weeds flora of CMPRH.

MATERIAL AND METHODS

Survey of CMPRH cultivated field was undertaken to identity and enlists the weeds occurring in area for their utilization as medicinal herbs and other uses. Efforts were made to collect all the weeds in flowering and fruiting in different season. Herbarium sheets were made and have been deposited in CMPRH herbarium, Weeds have been arranged as for Bentham and Hooker System of Plant classification, period of flowering and fruiting have been given to facilitate easy eradication of weeds before their flowering and fruiting.

The species are enumerated or arranged with correct binomial name, common names, phenology and distribution (Abundance: Occasional or abundant, common, frequent and rare) are provided for their easy identification.

RESULTS AND DISCUSSION

Most of the weeds species are represented from family like Asteraceae. On the basis of frequency of occurrence the total 78 species are categorised in 3 types. 1. Some species normally found along field margins or one or two meters inside the field offering very little competence to the crops 2. Some species found within the field only. 3. A large number of species found growing as well as on margins and within the field. Distribution patterns of Weeds are three types 1. Along field border only 2. Within field only 3. Both.

The Survey and identification of weeds in and around area of CMPRH reveals that about 78 species and 61 genera under 29 families of dicotyledonous angiosperms Table - 1 and 2 occurring in and around cultivated fields of Homeopathic medicinal and aromatic plants. Most of the species are under family Asteraceae (26) and the second family is Solanaceae (8), Carryophyllaceae (5), Brassicaceae (3), Oxalidaceae followed by (3), Amaranthaceae (3), Polygonaceae (3), Fabaceae (2), Rosaceae (2), Verbenaceae (2), Plantaginaceae (2) and Chenopodiaceae (2) remaining families one each.

These weeds eradication very challenging job. The common and dominant weeds of rainy season are *Spergula arvensis* L., *Xerochrysum bracteatum* (Vent.) Tzvelev, *Bidens pilosa* L., *Erigeron canadensis* L. *and Hypochaeris glabra* L. *Coronopus didymus* (L.) Smith., *Spermacoce hispida* L, *Oxlais corniculata* L. In summer season *Argemone ochroleuca* Sweet ., *Wahlenbergia marginata* (Thunb.) A.D C.,, *Galinsago parviflora* Cav, *Spermacoce hispida* L *Solanum nigrum* L., *Centella asiatica* (L.) Urban., *Helichrysum bracteatum* (Vent.) Tzvelev., *Hypochaeris glabra* L., *Bidens pilosa* L., *Emilia sonchifolia* (Linn.) D C. Ex Wight etc are common weeds in and around the cultivated fields. The study reveals that in rainy season plant species of family of Asteraceae and winter season plant species of family Caryophyllaceae and Solanaceae are dominant where as in summer mixed type of species grow in the cultivated field.

Weeds in crop fields contribute significantly to reduce farm productivity, early detection and eradication before their establishment, identification and enlisting of weeds at earliest to save the ecosystem and increase the crop productivity. Present study indicates several weedy plants like *Spergula arvensis* L., *Bidens pilosa* L., *Erigeron canadensis* L. *and* L. *Coronopus didymus* (L.) Smith., *Oxlais corniculata* L. *Argemone ochroleuca* Sweet *Galinsago parviflora* Cav. *Solanum nigrum* L., were used in native medicine. So the study suggested that there is a strong need of documentation of valuable knowledge about medicinal weeds of crops.

Table 1: List of dicotyledonous weeds recorded from CMPRH, Emerald, arranged according to the Bentham and Hooker System of Plant classification

S.No.	Botanical Name	Family	Common Name	Habit	Phenology	Abundance
1.	*Stephania japonica* (Thunb.) Miers.	Menispermaceae	Snake Vine, Tape Vine, Tamil- Molagaranai Kodi	Dioecious vine	March- July.	Frequent
2.	*Argemone ochroleuca* Sweet	Papaveraceae	Pale Mexican Poppy, Tamil- Bramma thandu	Annual herb	March - May	Rare
3.	*Fumaria officinalis* L.	Fumariaceae	Common Fumitory, Wax dolls, Tamil-Tura	Annual herb	December – March	Abundant
4.	*Brassica juncea* (L.) Czern.	Brassicaceae	Mastard, Tamil- Kadugu	Annual herb	December - March	Abundant
5.	*Capsella bursa-pastoris* (L.) Medik	Brassicaceae	Shepherd's Purse, Tamil- Thiruvottukayi	Annual herb	January - June	Occasional
6.	*Coronopus didymus* (L.) Smith	Brassicaceae	Swine Cress, Lesser Swine Cress, Bitter Cress	Prostrate foetid annual herb	February - April	Common.
7.	*Drymaria cordata* (L.) Willd. ex. Schultes	Caryophyllaceae	Shady Drimaria	Diffuse herb	Throughout the year	Common.
8.	*Polycarpon tetraphyllum (*L.)L.	Caryophyllaceae	Four Leaf Allseed	An annual herb	Throughout the year	Common
9.	*Silene gallica* L.	Caryophyllaceae	Small Flowered Catchfly	annual herb	July – October	Abundant
10.	*Spergula arvensis* L.	Caryophyllaceae	Corn Spurry,Tamil- Thadi Keerai	Small weak stemmed herb	November- February	Common
11.	*Stellaria media* (L.)Vill.	Caryophyllaceae	Common Chick Weed, Star Weed, TongueWeed	Diffuse or ascending herb	January - March	Common
12.	*Oxalis corniculata* L.	Oxalidaceae	India Sorrel, Creeping Wood Sorrel, Tamil - Puliyarai	Small annual herb	June - August	Common
13.	*Oxalis latifolia* Kunth	Oxalidaceae	Garden Pink Sorrel, Tamil- Puliyaria	Small stemless perennial herb	May- July	Common.
14.	*Oxalis pubescens* Kunth.	Oxalidaceae	Common Pink Sorrel	Creeping or twining shrubs	August - November	Common
15.	*Tropaeolum majus* L.	Tropaeolaceae	Garden Nasturtium	Perennial climbing herb	July- September	Frequent
16.	*Dodonaea viscosa* (L.) Jacq	Sapindaceae	Hopseed Bush, Tamil- Virali, Vilaari	Shrub	August - November	Common
17.	*Cytisus scoparius* (L) Link.	Fabaceae	Common Broom, Scotch Broom	Shrub	November - April	Abundant
18.	*Trifolium repens* L.	Fabaceae	Dutch Clover	Prostrate, Perennial herb	May – Oct.	Common
19.	*Rubus elipticus* Sm.	Rosaceae	Yellow Himalayan Raspberry	Strong flung shrub	September - November	Common

20.	*Rubus nivicus* Thunb.	Rosaceae	Mysore Raspberry	Straggling shrub	October - May	Common
21.	*Oenothera rosea* Aiton	Onagraceae	Pink Evening Primerose	An erect ascending, annual herb	Throughout the Year	Common
22.	*Centella asiatica* (L.) Urban.	Apiaceae	Asiatic Pennywort, Tamil- Vallarai, Kacappi	Prostrate or creeping herb	October - December	Abundant
23.	*Spermacoce hispida* (L.) L.	Rubiaceae	False Button Weed, Tamil- Nattaichurai	Annual herb	May - August	Common
24.	*Ageratum conyzoides* L.	Asteraceae	Chick Weed, Goat weed, Tamil- Pumppillu, Appakkoti	Erect annual herb	August - December	Common
25.	*Artemisia nilagirica* (C. B. Clarke) Pamp.	Asteraceae	Indian Wormwood, Tamil-Makkipu	An erect under shrub	March - May	Common
26.	*Bidens pilosa* Linn.	Asteraceae	Black Jack, Spanish Needle, Tamil- Pei Mull, Mukuthi	An annual herb	March - November	Common
27.	*Crassocephalum crepidioides* (Benth.) S. Moore	Asteraceae	Red flower Rag leaf, Fire weed	Erect annual slightly succulent herb	July – December	Frequent
28.	*Dahlia imperialis* Roezl ex Ortgies	Asteraceae	Mexican Tree Dahlia	Shrub	July - December	Common
29.	*Emilia sonchifolia* (Linn.) D C. ex DC.	Asteraceae	Lilic Tassel Flower, Cupid's Shaving Brush, Tamil- Muyal Kaathu sedi	Erect or diffuse herb	February - April	Frequent.
30.	*Emilia scabra* DC	Asteraceae	Cupid Paintbrush, Malyalam- Poosa thala	Annual herb	November	Rare
31.	*Erigeron canadensis* Linn.	Asteraceae	Horse Weed, Butter Weed	Annual herb	June - Aug.	Common
32.	*Erigeron bonariensis* Linn.	Asteraceae	Hairy Fleabane, Flax Leave Fleabane	Erect herb	May - Nov.	Common
33.	*Erigeron karvinskianus* D C.	Asteraceae	Mexican Fleabane, Spanish Daisy, Tamil- Mukuthi	Sprawling perennial herb	Throughout the year	Common
34.	*Ageratina adenophora* (Spreng.) R. M King & H. Rob.	Asteraceae	Snake Root, Crofton Weed, Tamil- Vettukaaya Poondu	Perennial shrub	January - May	Common
35.	*Galinsago parviflora* Cav.	Asteraceae	Quick weed, Tamil- Mookuthi Poo	Erect branched herb	March - December	Common
36.	*Gnaphalium coaratatum* Willd.	Asteraceae	Western Marsh Cudweed	Annual herb	March - August	Common
37.	*Gnaphalium luteoalbum* Linn.	Asteraceae	Jersey Cud weed, Cat's Paw	A woolly herb	March - April	Frequent
38.	*Gnaphalium uliginosum* L .	Asteraceae	Marsh Cud Weeds	Woolly annual herb	July September	Frequent
39.	*Xerochrysum bracteatum* (Vent.) Tzvelev	Asteraceae	Golden Everlasting Flower, Straw Flower	Erect herb	Throughout the Year	Common

40.	*Hypochaeris glabra* L.	Asteraceae	Smooth Cat's Ear	Perennial, scapigourous herb	July - November	Common
41.	*Hypocharis radiata* Falk.	Asteraceae	Rough Cat's Ear	An annual rosetted herb	January - December	Common
42.	*Parthenium hysterophorus* Linn.	Asteraceae	Congress Weed	An erect shrub	July – September	Frequent
43.	*Tagetes minuta* L.	Asteraceae	African Marigold, Khaki Bush.	An erect, woody, annual, herb	March - June	Cultivated
44.	*Siegesbeckia orientalis* L.	Asteraceae	St. Paul's Worth	Herb	April - December	Common
45.	*Silybum marianum*(L.) Gaertn.	Asteraceae	Milk Thistle	Erect stout biennial herb	May - September	Common
46.	*Sonchus arvensis* Linn.	Asteraceae	Gut weed	Erect, annual, milky, hairy or slightly glandular herb	March - November	Common
47.	*Sonchus oleraceus* L.	Asteraceae	Soft Thistle	Erect annual herb	March - November	Frequent
48.	*Taraxacum javanicum* Soest.	Asteraceae	Common Dandelion	Annual herb	April - December	Rare
49.	*Taraxacum officinale* (Weber) Wig.	Asteraceae	Common Dandelion, Tamil-Pathri	A perennial herb	March - November	Common
50.	*Anagalis arvensis* L.	Primulaceae	Red Chick Weed	Erect ascending annual herb	February - April	Frequent
51.	*Wahlenbergia marginata* (Thunb.) A. D C.	Companulaceae	Southern Rockbell	Small herb	December - March	Common
52.	*Cynoglossum zeylanicum* (Vahl) Brand	Boraginaceae	Ceylon Forget me Not, Tamil-Pisinottarai	Erect annual herb	August – September	Common
53.	*Cestrum aurantiacum* Lindley.	Solanaceae	Orange Cestrum, Yellow Cestrum	Erect glabrous under shrub	February - May	Common
54.	*Datura stramonium* L.	Solanaceae	Jimson Weed, Tamil- Ummattai, Vellumattai	Annual herb	Throught the summer	Frequent
55.	*Nicandra physalodes* (L.) Gaertner	Solanaceae	Apple of Peru	Erect subshrub	Summer to early autumn	Common
56.	*Solanum auriculatum* Aitony	Solanaceae	Tree tobacco, Woolly Night shade	Shrub	Throughout the year	Common
57.	*Solanum indicum* L.	Solanaceae	Poison Berry, Indian Night Shade,Tamil-Karimulli	Shrub	Throughout the year	Common
58.	*Solanum sisymbrifolium* Lam.	Solanaceae	Vila- vila, Sticky night shade.	Perennial erect, rizomatous herb	June - September	Common
59.	*Solanum nigrum* L.	Solanaceae	Black Nightshade	Herb	Throughout the year	Abundant
60.	*Solanum psedo-capsicum* L.	Solanaceae	Jerusalem Cherry	An erect shrub	October - June	Frequent
61.	*Verbascum thapsus*	Scrophulariaceae	Common Mullein	An erect tall	March - July	Common

	L.			herb		
62.	*Justicia simplex* D. Don	Acanthaceae	Common Small Justicia	Creeping and ascending herb	August - December	Common
63.	*Lantana camra.* L.	Verbenaceae	Wild sage, Tamil- Arisimaala, Unni Chedi	A large bushy shrub	Throughout the year	Common
64.	*Hyptis suaveolens* (L.) Poit.	Verbenaceae	American Mint, Stinking Roger, Pignut	Erect hairy annual under shrub	August - February	Common
65.	*Leucas aspera* L.	Lamiaceae	Common Leucas, Tamil- Thumbai	Erect annual Herb	Most part of the Year	Common
66.	*Plantago erosta* Wallich	Plntaginaceae	Chainese Plantain	Scapigerous Herb	April - August	Rare
67.	*Veronica persica* Poir	Plntagiinaceae	Common Field Speedwell, Birds-eye Speedwell	An annual prostrate and spreading herb	March - May	Frequent
68.	*Mirabilis jalapa* L.	Nyctaginaceae	4 O Clock plant, Tamil- Anthimalligai	Perennial herbaceous bushy plant	Throughout the year	Common
69.	*Achyranthus bidentata* Blume	Amaranthaceae	Ox Knee, Tamil- Naayurivi Chedi	Erect perennial herb	August - September	Frequent
70.	*Amaranthus viridis* L.	Amaranthaceae	Slender Amaranth, Tamil- Kuppai Keerai	Erect herb	Throughout the year	Common
71.	*Amaranthus spinosus* L.	Amaranthaceae	Spiny Amaranth. Tamil- Mullu Keerai	Profusely branched herb	February - May	Frequent
72.	*Chenopodium album* L.	Chenopodiaceae	Pig weed, Tamil – Paruppu Keerai	Erect annual herb	February - March	Common
73.	*Chenopodium ambrosoides* L.	Chenopodiaceae	Wormseed, Mexican Tea	Perennial herb	January - June	Common
74.	*Phytolacca americana* L.	Phytalocaceae	Poke Weed	Shrub	March – June	Abundant
75.	*Fagopyron esculantum* Moench	Polygonaceae	Buck Wheat	An erect glabrous annual herb	April – June	Abundant
76.	*Persicaria nepalensis* (Meisn.)	Polygonaceae	Knot Weed, Nepal Persicaria	Diffuse herb	October - December	Common
77.	*Rumex acetocella* L.	Polygonaceae	Field Sorrel, Red Sorrel	Perennial, dioecious herb	June - August	Common
78.	*Ricinus communis* L.	Euphorbiaceae	Castor oil Plant	Erect shrub	February - June	Frequent

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REFERENCES

Ajai Kumar Singh, Priyanka Singh, Yogini Devi and Ansari AA, 2009. Grass weeds of cultivated fields in South- Eastern Uttar Pradesh. *J. Econ. Taxon. Bot*., **33** (1): 81 - 100.

Jain SP, 1980. Introduced weeds in the Vegetation of North- East Haryana. *Bull. Bot. Univ. of Saugor*, **22**: 46-56.

Jain SP and Singh NB, 1982. Weeds of Paddy, Wheat and Sugarcane fields of Kurukshetra District in Haryana. *The Botaniqe*, **10** (1-4): 15 -18.

Jery Thomas and John De Britto A, 1999. Weeds of medicinal importance in Trunelveli District in Tamil nadu. *J. Econ. Taxon. Bot*., **23** (2): 363-367.

Manorama K, Balsubramanian A and Ravichandran G, 2010. Weed flora of pototo (Solanum tubresum) and their management in the Nilgiris. *Indian J. Weed Sci*., **42** (1&2): 63 - 66.

Mukhopadhyay SK, 1965. Control of weeds in wheat and rice for increasing crop production. *Agron. Jour*., **10**: 72-82.

Table - 2: Quantitative Analysis of the Weed flora

S.NO	FAMILY	NO. OF SPECIES
1.	Menispermaceae	1
2.	Papaveraceae	1
3.	Fumariaceae	1
4.	Brassicaceae	3
5.	Carryophyllaceae	5
6.	Oxalidaceae	3
7.	Tropaeolaceae	1
8.	Sapindaceae	1
9.	Fabaceae	2
10.	Rosaceae	2
11.	Onagraceae	1
12.	Apiaceae	1
13.	Rubiaceae	1
14.	Asteraceae	26
15.	Primulaceae	1
16.	Companulaceae	1
17.	Boraginaceae	1
18.	Solanaceae	8
19.	Scrophulariaceae	1
20.	Acanthaceae	1
21.	Verbenaceae	2
22.	Lamiaceae	1
23.	Plntaginaceae	2
24.	Nyctaginaceae	1
25.	Amaranthaceae	3
26.	Chenopodiaceae	2
27.	Phytalocaceae	1
28.	Polygonaceae	3
29	Euphorbiaceae	1

Pandey, HK ,1956 a. The study in weed and weeding of wheat fields. Ph.D. Thesis. Agra University.

Pandey, HK 1956 b. Effect of growth regulators as weed in crop of wheat. *Proc.Ind. Sci. Congr. Assoc*. 43rd Session Part IIIx.

Patro GK, 1971. Survey of major distribution of weed flora in tour field crops at Bhubaneshwar area. *Ind. J. Weed. Sci*., **3**: 104 - 111.

Ramar Govindarajan, Ganapathy Pandiarajan, Balkumar Mahesh Kumar and Karuppasamy, Sankarasivaraman, 2011. Beneficial usage of

weeds in the tea fields of Pandalur village, Nilgiri District, Tamil Nadu. *J. Biosci. Res*., **2** (4): 249 - 254.

Singh KK and Singh SC 1983. Observation on weeds of Wheat field of Lucknow District, *Jour. Econ. Tax. Bot*., **4**: 223-231.

Singh SC and Jain SP, 1986. Medicinal weeds of Lucknow District. Ind. *Jour. Plant Sciences*, **4**: 70 - 83.

Verma RR and Bharadwaj RS, 1959. Chemical weed control in Wheat. *Ind. Jour. Agron*., **2**: 243.

Victor R, Elango J and Sharma V S, 2008. Phytosociology of weeds in tea plantations of South India. *Indian J. Weed Sci*., **40** (1&2): 73-77.

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