

## Compositae of Chitradurga District, Karnataka: A Checklist and Key

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**ABSTRACT:** Amongst the flowering plants, Compositae (Asteraceae) is the biggest family which has enormous number of medicinally important, essential oil yielding, ornamental plants, landscapers etc. As per literature survey it was discovered that there are no documented reports on compositae of Chitradurga district, in order to identify and classify the plants dichotomous key plays a major role which make identification of plants easier and faster. Chitradurga district in Karnataka was selected to undergo detailed locality specific survey in order to do Taxonomic survey of all the plant species belonging to the family Asteraceae. The study was carried out during 2021-2023. The present investigation revealed that 96 species are present distributed under 70 genera. Of which *Blumea* is dominant genera with 8 species; followed by *Launaea* with 4 species, *Acilepis*, *Acmella*, *Sonchus* each with 3 species, and other genera having 1 or 2 species. A detailed dichotomous key is provided for easy identification and systematic classification of all the species of Compositae of Chitradurga. The present report serves as handbook for identification of the compositae of Chitradurga district for taxonomists, researchers, students, agricultural scientists.

**Keywords:** Dichotomous key, Compositae, Chitradurga, Karnataka, *Acmella*.

### INTRODUCTION

Compositae (Asteraceae) commonly known as Aster, Sunflower and Daisy family and is one of the largest family of angiosperms. It includes 32000 species under 1900 genera in the world (The plant list, 2016), with most species herbs followed by shrubs, vines, and trees. The plant species are found to be grown in all most all types of habitats from subpolar to tropical region, except Antarctica and Extreme arctic region. In India, this family is represented with 1172 taxa under 193 genera distributed (Kartikayan *et al.*, 2020). In wild, the diversity of species are present in their natural status, Hence, evaluating and conserving the plant diversity in regions is important (Chandra *et al.*, 2022), because they play economically important role. In this regard Asteraceae plays very important role economically viz., medicinal plants (Kavitha Sagar, 2019, 2013; Jennifer Michel *et al.*, 2020), essential oil yielding plants, ornamental, landscape plants (Bagal and Deokule 2015; Kavitha Sagar *et al.*, 2023).

Chitradurga is a district of Karnataka state (Fig.1) in south India. The whole district lies on the Valley of Vedavati River and located at 14.23 N, 76.40 E. Geographically the district covers 8436 sq km, in which 7859 sq km non forest area, 529.55 sq km high open forest area and 47.06 sq km moderate forest area. The District is covered with mainly dry mixed deciduous forests and thorny scrub forest. The district includes six talukas i.e. Chitradurga, Challakere, Hiriyur, Holalkere, Hosadurga and Molakalmuru. The forest blocks of

Holalkere, Hosadurga, Hiriyur and Chitradurga ranges are mainly covered with dry mixed deciduous forest and also the district is covered with four state forests i.e Bevinakallu, Guheshwaragudda, Niruthadi and Jogimatti.

The present study was carried out with aim to do locality specific survey, taxonomic description, identify and classify the species based upon dichotomous key to the genera and species. To the best of our knowledge this study is the first report from India.



Fig. 1. Map of Chitradurga district in Karnataka state.



21. Outer involucral bracts foliose. ....*Baccharoides*  
21. Outer involucral bracts not foliose  
22. Leaves base cuneate. ....*Cyanthillium*  
22. Leaves base acute.....*Acilepis*
1. Heterogamous head or Monoecious head
23. Head with tubuliflorae
24. Head sessile or subsessile
25. Plants spiny. ....*Xanthium*  
25. Plants not spiny
26. Shrub or undershrub
27. Pappus present. ....*Leucoblepharis*  
27. Pappus absent. ....*Artemisia*
26. Herb
28. Inflorescence spike. ....*Gnaphalium*  
28. Inflorescence corymb
29. Achenes glabrous. ....*Helichrysum*  
29. Achenes papillose. ....*Anaphalis*
24. Head pedicellate
30. Leaves opposite. ....*Ageratina*  
30. Leaves alternate
31. Involucral bracts 1 to 2 seriate
32. Leaves petiolate. ....*Dichrocephala*  
32. Leaves sessile
33. Pappus absent. ....*Sphaeranthus*  
33. Pappus present
34. Pappus feathery. ....*Erigeron*  
34. Pappus fimbriate. ....*Grangea*
31. Involucral bracts 3 to many seriate
35. Shrub or Subshrub. ....*Pluchea*  
35. Herb
36. Inflorescence corymb
37. Pappus absent. ....*Epaltes*  
37. Pappu present. ....*Pseudoconyza*
36. Inflorescence panicle (or) solitary
38. Anthers bases tailed. ....*Blumea*  
38. Anthers bases entire or sagittate
39. Anthers bases sagittate. ....*Laggera*  
39. Anthers bases entire
40. Leaves base cuneate, margin entire. ....*Eschenbachia*  
40. Leaves base narrow, margin crenate. ....*Conyza*
23. Head with tubuliflorae and liguliflorae
41. Head sessile or subsessile
42. Involucral bracts 1 seriate
43. Phyllaries 4. ....*Enydra*  
43. Phyllaries 2. ....*Flaveria*
42. Involucral bracts 2 to 4 seriate
44. Involucral spiny. ....*Acanthospermum*  
44. Involucral not spiny
45. Stems prostrate. ....*Calyptocarpus*  
45. Stems erect. ....*Synedrella*
41. Head pedicellate
46. Involucral bracts 1 to 4 seriate
47. Inflorescence head – conical shape. ....*Acmella*  
47. Inflorescence head – not conical shape
48. Inflorescence solitary or pair
49. Leaves alternate
50. Leaves petiolate
51. Leaves filiform. ....*Glossocardia*  
51. Leaves lance-ovate to ovate. ....*Helianthus*
50. Leaves sessile
52. Pappus absent. ....*Calendula*

52. Pappus present. ....*Pulicaria*  
 49. Leaves opposite  
 53. Leaves sessile or subsessile  
 54. Disc florets anther base sagittate. ....*Sphagneticola*  
 54. Disc florets anther base obtuse  
 55. Leaves linear-oblong. ....*Eclipta*  
 55. Leaves ovate. ....*Galinsoga*  
 53. Leaves petiolate  
 56. Plant Procumbent herbs. ....*Tridax*  
 56. Plant Erect herbs  
 57. Pappus absent. ....*Dahlia*  
 57. Pappus present  
 58. Leaves compound. ....*Tagetes*  
 58. Leaves simple  
 59. Achenes truncate. ....*Blainvillea*  
 59. Achenes oblanceolate. ....*Wedelia*  
 48. Inflorescence panicles or corymbose panicles or cyme  
 60. Leaves alternate  
 61. Pappus 2 in outer florets, reflexed. ....*Parthenium*  
 61. Pappus many, not reflexed. ....*Senecio*  
 60. Leaves opposite  
 62. Pappus present  
 63. Leaves 3 foliate. ....*Bidens*  
 63. Leaves pinnate. ....*Cosmos*  
 62. Pappus absent  
 64. Achenes linear to oblong. ....*Coreopsis*  
 64. Achenes angled or obovoid  
 65. Leaves ovate. ....*Sigesbeckia*  
 65. Leaves lanceolate. ....*Guizotia*  
 46. Involucral bracts 5 to many seriate  
 66. Leaves opposite. ....*Zinnia*  
 66. Leaves alternate  
 67. Leaves sessile. ....*Vicoa*  
 67. Leaves petiolate  
 68. Shrubs or subshrubs. ....*Tithonia*  
 68. Herbs  
 69. Pappus absent or obscure. ....*Chrysanthemum*  
 69. Pappus Present. ....*Callistephus*

1. ***Acanthospermum*** Schrank

Herb; stem hairy; leaves opposite; heads heterogamous; florets bisexual; achene compressed.

***Acanthospermum hispidum*** DC., Gamble, Fl. Presi. Madras 2(495), 1921; Singh N P, Fl. Eastern Kar.1(360), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(361), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (3), 2015.

Fl. & Fr.: Throughout the year

2. ***Acilepis*** D.Don

Herb or shrub or subshrub; erect; stem tomentose or glabrescent; leaves opposite; heads homogamous; achenes oblong.

**Key to the species**

1. Achenes sparsely hairy. ....*A. aspera*

1. Achenes glabrous

2. Involucral bracts densely white-tomentose. ....*A. dendigulensis*

2. Involucral bracts glabrous. ....*A. divergens*

***Acilepis aspera*** (Buch.-Ham.) H.Rob., Hook. f., Fl. Brit. India 3(232), 1881.

Fl. & Fr.:November-January

***Acilepis dendigulensis*** (DC.) H.Rob., Hook. f., Fl. Brit. India 3(238), 1881; Gamble, Fl. Pres. Madras 2(474), 1921; Singh N P, Fl. Eastern kar. 1(385), 1988; B.P. Uniyal in Hajra *et al.*, Fl. India 13(372), 1995.

Fl. & Fr.:November-January

***Acilepis divergens*** (DC.) H.Rob. & Skvarla, Hook. f., Fl. Brit. India 3(234), 1881; Gamble, Fl. Pres. Madras 2(473), 1921; Singh N P, Fl. Eastern kar. 1(385), 1988; B.P. Uniyal in Hajra *et al.*, Fl. India 13(370), 1995.

Fl. & Fr.:December-March

3. ***Acmella*** Rich. ex Pers.

Herb; erect or procumbent; leaves ovate; heads heterogamous, conical; pappus absent or present.

**Key to the species**

1. Pappus absent.....*A. calva*  
1. Pappus present  
2. Phyllaries 3 seriate.....*A. oleracea*  
2. Phyllaries 2 seriate.....*A. paniculata*

*Acmella calva* (DC.) R.K.Jansen, Hook. f., Fl. Brit. India 3(307), 1881; Gamble, Fl. Pres. Madras 2(498), 1921; Singh N P, Fl. Eastern kar. 1(389), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(409), 1995.

Fl. & Fr.:Throughout the year

*Acmella oleracea* (L.) R.K.Jansen, Hook.f., Fl. Brit. India 3(307), 1881; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(410), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (4), 2015.

Fl. & Fr.:January-April

*Acmella paniculata* (Wall. ex DC.) R.K.Jansen, Hook.f., Fl. Brit. India 3(307), 1881; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(410), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (4), 2015.

Fl. & Fr.:July-September

4. *Adenostemma* J.R.Forst. & G.Forst.

Herb; erect; stem pubescent or glabrous; leaves sessile; heads homogamous; anthers truncate at apex.

*Adenostemma lavenia* (L.) Kuntze, Hook. f., Fl. Brit. India 3(242), 1881; Gamble, Fl. Presi. Madras 2(476), 1921; B.P. Uniyal in Hajra *et al.*, Fl. India 12(346), 1995; Singh, N.P., Chauhan, A.S., Mondal, M.S., Fl. Manipur, 1(501), 2000.

Fl. & Fr.:September-Jun

5. *Ageratina* Spach

Herb; erect; leaves opposite; heads heterogamous, corymbose panicle; achenes curved; pappus white.

*Ageratina adenophora* (Spreng.) R.M.King & H.Rob., Singh N P, Fl. Eastern Kar. 1(371), 1988; B.P. Uniyal in Hajra *et al.*, Fl. India 12(350), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (6), 2015.

Fl. & Fr.:February-March

6. *Ageratum* L.

Herb; erect; stem terete; leaves opposite, ovate; heads homogamous; pappus present.

**Key to the species**

1. Phyllaries oblong-lanceolate.....*A. conyzoides*  
1. Phyllaries narrowly-lanceolate.....*A. houstonianum*

*Ageratum conyzoides* L., Hook. f., Fl. Brit. India 3(243), 1881; Gamble, Fl. Presi. Madras 2(476), 1921; Singh N P, Fl. Eastern Kar. 1(361), 1988; B.P. Uniyal in Hajra *et al.*, Fl. India 12(348), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (7), 2015.

Fl. & Fr.:July-February

*Ageratum houstonianum* Mill., B.P. Uniyal in Hajra *et al.*, Fl. India 12(349), 1995.

Fl. & Fr.:September-March

7. *Anaphalis* DC.

Herb; erect; densely white woolly; leaves linear oblong or spatulate; heads heterogamous; florets yellow; achenes minute; pappus present.

*Anaphalis subdecurrens* Gamble, Hook. f., Fl. Brit. India 3 (283), 1881; Gamble, Fl. Pres. Madras 2(489), 1921; P.C. Pant in Hajra *et al.*, Fl. India 13(75), 1995.

Fl. & Fr.:April-December

8. *Artemisia* L.

Herb; erect; pubescent; aromatic; leaves oblanceolate; heads heterogamous; achenes oblong; pappus absent.

*Artemisia nilagirica* (C.B.Clarke) Pamp., Hook. f., Fl. Brit. India 3 (325), 1881; Singh N P, Fl. Eastern Kar. 1(361), 1988.

Fl. & Fr.:October-January

9. *Baccharoides* Moench

Herb; erect; stem terete; leaves elliptic-lanceolate; heads homogamous; achenes ribbed; pappus 2 seriate.

*Baccharoides anthelmintica* (L.) Moench, Gamble, Fl. Pres. Madras 2(469), 1921; Singh N P, Fl. Eastern Kar.1(366), 1988.

Fl. & Fr.:September-January

10. *Bidens* L.

Herb; erect; stem terete; leaves opposite; heads heterogamous; anthers base obtuse or subsegitate; achenes compressed; pappus present or absent.

**Key to the species**

1. Anthers base obtuse.....*B. biternata*  
1. Anthers base sagittate.....*B. piloa*

*Bidens biternata* (Lour.) Merr. & Sherff, Gamble, Fl. Presi. Madras 2(499), 1921; Singh N P, Fl. Eastern Kar. 1(362), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(367), 1995.

Fl. & Fr.:August-November

*Bidens pilosa* L., Gamble, Fl. Pres. Madras 2(499), 1921; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (23), 2015.

Fl. & Fr.:October-March

11. *Blainvillea* Cass.

Herb; erect; stem grooved; leaves opposite; heads heterogamous; achenes compressed or narrow; pappus persistent.

*Blainvillea acmella* (L.) Philipson, Hook. f., Fl. Brit. India 3(305), 1881; Gamble, Fl. Presi. Madras 2(496), 1921; Singh N P, Fl. Eastern Kar.1(363), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(377), 1995.

Fl. & Fr.:August-October

12. *Blumea* DC.

Herb or subshrub; erect or prostrate; stem pubescent or glabrous; leaves alternate; heads heterogamous; anther base tailed; achenes ribbed, angled; pappus 1 seriate.

**Key to the species**

1. Prostrate herb. .... *B. oxyodonta*
1. Erect herbs
  2. Leaves petiole widen at base. .... *B. lanceolaria*
  2. Leaves sessile or subsessile
    3. Leaves base semi amplexicaul. .... *B. obliqua*
    3. Leaves base not semi amplexicaul
      4. Heads solitary, axillary or terminal. .... *B. bifoliata*
      4. Heads glomerulate or paniculate
        5. Achenes ribbed
          6. Leaves elliptic-obovate. .... *B. eriantha*
          6. Leaves obovate-inverted lanceolate. .... *B. malcolmii*
        5. Achenes not ribbed
          7. Achenes angled; florets purple. .... *B. axillaries*
          7. Achenes terete; florets yellow. .... *B. lacera*

*Blumea axillaris* DC., Hook. f., Fl. Brit. India 3(261), 1881; Gamble, Fl. Pres. Madras 2(483), 1921; Singh N P, Fl. Eastern Kar. 1(365), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(135), 1995.

Fl. & Fr.:December-February

*Blumea bifoliata* DC., Hook. f., Fl. Brit. India 3(261), 1881; Gamble, Fl. Pres. Madras 2(482), 1921; S. Kumar in Hajra *et al.*, Fl. India 13(120), 1995.

Fl. & Fr.:December-March

*Blumea eriantha* DC., Hook. f., Fl. Brit. India 3(266), 1881; Gamble, Fl. Pres. Madras 686(482). 1921; Singh N P, Fl. Eastern Kar. 1(364), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(122), 1995.

Fl. & Fr.: December-April

*Blumea lacera* (Burm.f.) DC., Hook. f., Fl. Brit. India 3(263), 1881; Gamble, Fl. Pres. Madras 687(483), 1921; Singh N P, Fl. Eastern Kar. 1(364), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(128), 1995.

Fl. & Fr.:March-September

*Blumea lanceolaria* Druce, Gamble, Fl. Presi.Madras 2(484), 1921.

Fl. & Fr.:December-May

*Blumea malcolmii* Hook.f., Gamble, Fl. Presi. Madras 2(484), 1921.

Fl. & Fr.:November-February

*Blumea obliqua* (L.) Druce, Hook. f., Fl. Brit. India 3(260), 1881; Gamble, Fl. Pres. Madras 2(482). 1921; Singh N P, Fl. Eastern Kar.1(364), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(137), 1995.

Fl. & Fr.:November-March

*Blumea oxyodonta* DC., Hook. f., Fl. Brit. India 3(266), 1881; Gamble, Fl. Pres. Madras 2(482), 1921; S. Kumar in Hajra *et al.*, Fl. India 13(139), 1995.

Fl. & Fr.:January-March

13. *Caesulia* Roxb.

Herb; erect; stem stout; leaves sessile, alternate; heads sessile, homogamous; achenes obovate; pappus biseriate scales.

*Caesulia axillaris* Roxb., Hook. f., Fl. Brit. India 3(291), 1881; Gamble, Fl. Pres. Madras 2(494), 1921; Singh N P, Fl. Eastern Kar. 1(365), 1988; P.C. Pant in Hajra *et al.*, Fl. India 13(2), 1995.

Fl. & Fr.:October-March

14. *Calendula* L.

Herb; erect; stem pubescent; leaves oblong-obovate or spatulate, amplexicaul; head solitary, heterogamous; achenes curved.

*Calendula officinalis* L., Singh N P, Fl. Eastern Kar.1(387), 1988.

Fl. & Fr.:November-March

15. *Callistephus* Cass.

Herb; erect; stem branched; leaves ovate to lanceolate or oblanceolate; head solitary, heterogamous; achenes purple; pappus present.

*Callistephus chinensis* Nees, Singh N P, Fl. Eastern Kar.1(387), 1988.

Fl. & Fr.:November-March

16. *Calyptocarpus* Less.  
Herb; stem prostrate; leaves simple, ovate; head solitary, heterogamous; disc and ray florets yellow.  
*Calyptocarpus vialis* Less., Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (29), 2015.  
Fl. & Fr.:September-December

17. *Carthamus* L.  
Herb; stem erect; leaves leathery, glabrous; head homogamous; achenes ovoid to ellipsoid, angled; pappus absent.  
*Carthamus tinctorius* L., Hooker, Fl. Brit. Ind, 3(386), 1881; Singh N P, Fl. Eastern Kar.1(387), 1988; Hajra in Hajra *et al.*, Fl. India 13(163), 1995.  
Fl. & Fr.:August-October

18. *Chromolaena* DC.  
Subshrub; erect; stem terete; leaves deltoid ovate; heads homogamous; achenes 5 angled; pappus white.  
*Chromolaena odorata* (L.) R.M.King & H.Rob., Hook.f., Fl. Brit. Ind, 3(244), 1881; B.P. Uniyal in Hajra *et al.*, Fl. India 13(354), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (35), 2015.  
Fl. & Fr.:December-March

19. *Chrysanthemum* L.  
Herb; erect; leaves simple, alternate; head corymbs, heterogamous; achenes ribbed, angled; pappus 0 or obscure.  
**Key to the species**  
1. Outer phyllaries ovate or ovate-triangular.....  
.....*C. indicum*  
1. Outer phyllaries lanceolate-oblong.....  
.....*C. morifolium*  
*Chrysanthemum indicum* L., Singh N P, Fl. Eastern Kar.1(387), 1988.  
Fl. & Fr.:June-November  
*Chrysanthemum morifolium* Ramat.,  
Fl. & Fr.:August-December

20. *Conyza* Less.  
Herb; stem densely hairy; leaves spatulate; heads heterogamous; florets yellow.  
*Conyza stricta* Willd., Hook.f., Fl. Brit. Ind, 3(258), 1881; Hajra in Hajra *et al.*, Fl. India 12(109), 1995.  
Fl. & Fr.: August-October

21. *Coreopsis* L.  
Herb; stem terete, glabrous; leaves opposite; heads heterogamous, paneled; achenes linear oblong.  
*Coreopsis tinctoria* Nutt., Sharma B.D, Fl. Karnataka Analysis, 1984.  
Fl. & Fr.:June-September

22. *Cosmos* Cav.  
Herb; stem erect; leaves petiolate or sessile; head heterogamous; pappus absent.  
**Key to the species**  
1. Leaves pinnately dissected.....  
.....*C. bipinnatus*  
1. Leaves 2 or 3 pinnatisect.....  
.....*C. sulphureus*

*Cosmos bipinnatus* Cav., Singh *et al.*, 2000. Fl. Manipur, 1(530), BSI, Calcutta; Sharma B.D, Fl. Karnataka Analysis 1984.  
Fl. & Fr.:January-June  
*Cosmos sulphureus* Cav., H.J. Chowdhery in Hajra *et al.*, Fl. India 12(373), 1995.  
Fl. & Fr.:August-November

23. *Crassocephalum* Moench  
Herb; erect; leaves elliptic-oblongate; heads corymbs, homogamous; achenes ribbed; pappus long and many hairs.  
*Crassocephalum crepidioides* S. Moore, Gamble, Fl. Pres. Madras 1882(1302).1936; Singh, Fl. Eastern Kar.1(367), 1988; R. Mathur in Hajra *et al.*, Fl. India 13(201), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (44), 2015.  
Fl. & Fr.:July-December

24. *Cyanthillium* Blume  
Herb or subshrub; erect or decumbent herb; leaves alternate; head homogamous; anthers sagittate below; achenes angled or ribbed; pappus biseriate.  
**Key to the species**  
1. Bracts lanceolate.....  
.....*C. albicans*  
1. Bracts ovate-lanceolate.....  
.....*C. cinereum*  
*Cyanthillium albicans* (DC.) H.Rob., Gamble, Fl. Pres. Madras 2(475), 1921; Hook. f., Fl. Brit. India 3(233), 1881; Singh N P Fl. Eastern Kar.1(384), 1988; Uniyal in Hajra *et al.*, Fl. India 13(351), 1995.  
Fl. & Fr.:July-October  
*Cyanthillium cinereum* (L.) H.Rob., Hook. F., Fl. Brit. India 2(233), 1881; Singh N P, Fl. Eastern Kar.1(384), 1988; Uniyal in Hajra *et al.*, Fl. India 13(367), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (51), 2015.  
Fl. & Fr.:July-February

25. *Dahlia* Cav.  
Herb; erect; stem stout; leaves opposite; head radiate, heterogamous; ray florets showy; disc florets yellow or reddish or purplish.  
*Dahlia pinnata* Cav., Singh N P, Fl. Eastern Kar.1(388), 1988; Singh *et al.*, Fl. Manipur, BSI, Calcutta, 1(530), 2000.  
Fl. & Fr.:June-November

26. *Dichrocephala* L'Hér. ex DC.  
Herbs; leaves alternate; heads heterogamous; anthers obtuse at base; pappus absent in female and presner in bisexual florets.  
*Dichrocephala integrifolia* (L.f.) Kuntze, Hook. f., Fl. Brit. India 3(245), 1881; Gamble, Fl. Pres. Madras 2(477), 1921; Hajra in Hajra *et al.*, Fl. India 12(114), 1995.  
Fl. & Fr.:September-March

27. *Dicoma* Cass.  
Herb; erect; pubescent herb; leaves alternate; heads homogamous; achenes hairy; pappus bristled.  
*Dicoma tomentosa* Cass., Gamble, Fl. Pres. Madras 2(512), 1921; Singh, Fl. Eastern Kar.1(368), 1988.

Fl. & Fr.: August-February

28. **Echinops** L.

Herb; stem erect; leaves alternate; heads homogamous; spinescent; anthers tailed; achenes angled; pappus hairy.

**Echinops echinatus** Roxb., Hook. f., Fl. Brit. India 3(358), 1881; Gamble, Fl. Presi. Madras 2(509), 1921; Singh, Fl. Eastern Kar.1(368), 1988; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (64), 2015.

Fl. & Fr.: September-March

29. **Eclipta** L.

Herb; erect or prostrate; stem angular; leaves opposite; heads heterogamous; aches compressed or warted.

**Eclipta prostrata** (L.) L., Hook. f., Fl. Brit. India 3(304), 1881; Gamble, Fl. Presi. Madras 2(496), 1921; Singh N P, Fl. Eastern Kar.1(369), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(381), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (64), 2015.

Fl. & Fr.: July-March

30. **Elephantopus** L.

Herb; pubescent; leaves radical; heads homogamous; achenes linear; pappus linear.

**Elephantopus scaber** L., Hook. f., Fl. Brit. India 3(242), 1881; Gamble, Fl. Presi. Madras 2(476), 1921; B.P. Uniyal in Hajra *et al.*, Fl. India 13(333), 1995.

Fl. & Fr.: August-November

31. **Emilia** Cass.

Herb; pubescent; leaves alternate; head homogamous; achenes oblong; pappus many.

**Emilia sonchifolia** (L.) DC., Hook. f., Fl. Brit. India 3(336), 1881; Gamble, Fl. Presi. Madras 2(503), 1921; Singh N P, Fl. Eastern Kar. 1(369), 1988; R. Mathur in Hajra *et al.*, Fl. India 13(211), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (65), 2015.

Fl. & Fr.: September-February

32. **Enydra** Lour.

Herb; stem glabrous; leaves opposite; heads heterogamous; achenes oblong; pappus absent.

**Enydra fluctuans** Lour., Hook. f., Fl. Brit. India 3(304), 1881.

Fl. & Fr.: November-January

33. **Epaltes** Cass.

Herb; stem trigonous; leaves oblong-spathulate; heads heterogamous; achenes oblong; pappus absent.

**Epaltes divaricata** Cass., Gamble, Fl. Pres. Madras 2(486), 1921; Singh N P, Fl. Eastern Kar. 1(370), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(147), 1995.

Fl. & Fr.: December-February

34. **Erigeron** L.

Herb; leaves oblanceolate; heads heterogamous; achenes ellipsoid or long; pappus white or yellowish.

#### Key to the species

1. Pappus yellowish.....

.....**E. bonariensis**

1. Pappus white.....

.....**E. sublyratus**

**Erigeron bonariensis** L., Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (42), 2015.

Fl. & Fr.: August-January

**Erigeron sublyratus** Roxb.ex DC., Hook. f., Fl. Brit. India 3(254), 1881; Gamble, Fl. Pres. Madras 2(479), 1921; Singh N P, Fl. Eastern Kar. 1(370), 1988; Hajra in Hajra *et al.*, Fl. India 12(125), 1995.

Fl. & Fr.: April-September

35. **Eschenbachia** Moench

Herb; leaves simple, elliptic-lanceolate; heads heterogamous; achenes compressed.

**Eschenbachia leucantha** (D.Don) Brouillet, Hook. f., Fl. Brit. India 3(58) 1881; Gamble, Fl. Pres. Madras 683(480).1921; Hajra in Hajra *et al.*, Fl. India 12(105), 1995.

Fl. & Fr.:December-March

36. **Flaveria** Juss.

Herb; stem erect; leaves simple, sessile or petiolate; head heterogamous; pappus absent.

**Flaveria trinervia** (Spreng.) C.Mohr, Gamble, Fl. Pres. Madras 2(485), 1921; Singh N P, Fl. Eastern Kar.1(371), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(386), 1995.

Fl. & Fr.:September-May

37. **Galinsoga** Ruiz & Pav.

Herb; leaves sessile, opposite; heads heterogamous; achenes angled; pappus few.

**Galinsoga parviflora** Cav., Hook. f., Fl. Brit. India 3(311), 1881; Gamble, Fl. Presi. Madras 2(500), 1921; Singh N P, Fl. Eastern Kar.1(372), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(388), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (74), 2015.

Fl. & Fr.:May-October

38. **Glossocardia** Cass.

Herb; leaves pinnatisect; head heterogamous; achenes compressed; pappus present.

**Glossocardia bosvallia** DC., Gamble, Fl. Pres. Madras 2(499), 1921; Singh N P, Fl. Eastern Kar. 1(372), 1988; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (76), 2015.

Fl. & Fr.: August-December

39. **Gnaphalium** L.

Herb; leaves oblanceolate; heads heterogamous; achenes glabrous; pappus caducous.

**Gnaphalium polycaulon** Pers., Gamble, Fl. Pres. Madras 2(491), 1921; Singh N P, Fl. Eastern Kar. 1(373), 1988; P.C. Pant in Hajra *et al.*, Fl. India 13(91), 1995.

Fl. & Fr.: Throughout year

40. **Goniocaulon** Cass.

Herb; stem erect; leaves alternate; heads homogamous; achenes oblong, ribbrd, glabrous.

**Goniocaulon indicum** C.B.Clarke, Hook.f., Fl. Brit. India 3(377) 1881; Gamble, Fl. Pres. Madras 2(510), 1921; Singh N P, Fl. Eastern Kar.1(373), 1988; Hajra in Hajra *et al.*, Fl. India 12(181), 1995.

Fl. & Fr.: December-March

41. **Grangea** Adans.

Herb; prostrate; leaves alternate, sessile; heads heterogamous; achenes deeply ribbed; pappus white.



**Grangea maderaspatana** (L.) Poir., Hook. f., Fl. Brit. India 3(247) 1881; Gamble, Fl. Presi. Madras 2(478), 1921; Singh N P, Fl. Eastern Kar. 1(374), 1988; Hajra in Hajra *et al.*, Fl. India 12(127), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (77), 2015.

Fl. & Fr.: August-March

42. **Guizotia** Cass.

Herb; stem erect; leaves opposite, lanceolate; heads heterogamous; achenes 4 angled; pappus absent.

**Guizotia abyssinica** Cass., Hook. f., Fl. Brit. India 3(308) 1881; Gamble, Fl. Presi. Madras 2(498), 1921; Singh N P, Fl. Eastern Kar. 1(388), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(395), 1995.

Fl. & Fr.: August-November

43. **Gynura** Cass.

Herb; stem glabrous; leaves alternate; heads homogamous; achenes ribbed; pappus white.

**Gynura lycopersicifolia** DC., Hook. f., Fl. Brit. India 3(334), 1881; Gamble, Fl. Pres. Madras 2(502). 1921; R. Mathur in Hajra *et al.*, Fl. India 13(220), 1995.

Fl. & Fr.: September-November

44. **Helianthus** L.

Herb or subshrub; stem hispid; leaves alternate; heads heterogamous; achenes glabrate; pappus scales.

**Helianthus annuus** L., Singh N P, Fl. Eastern Kar. 1(388), 1988; Singhet *et al.*, Fl. Manipur, BSI, Calcutta, 1(530), 2000.

Fl. & Fr.: July-September

45. **Helichrysum** Mill.

Herb; white-tomentose; leaves spatulate or oblanceolate; heads heterogamous; achenes glabrous; pappus caduceus.

**Helichrysum luteoalbum** (L.) Rchb., Hook. f., Fl. Brit. India 3(288), 1881; Gamble, Fl. Pres. Madras 2(492), 1921.

Fl. & Fr.: January-April

46. **Lagascea** Cav.

Herb; stem terete; leaves opposite; heads homogamous; achenes angular; pappus fimbriate.

**Lagascea mollis** Cav., Hook. f., Fl. Brit. India 3(302), 1881; Gamble, Fl. Presi. Madras 2(494), 1921; Singh N P, Fl. Eastern Kar. 1(374), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(397), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (95), 2015.

Fl. & Fr.: July-March

47. **Laggera** Sch.Bip. ex Benth.

Herb; leaves oblanceolate; heads heterogamous; achenes ribbed; pappus long.

**Laggera alata** (DC.) Oliv., Hook. f., Fl. Brit. India 3(271), 1881; Gamble, Fl. Pres. Madras 2(485), 1921; Singh N P, Fl. Eastern Kar. 1(375), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(148), 1995.

Fl. & Fr.: December-March

48. **Launaea** Cass.

Herb; erect; leaves radical; heads homogamous; anther base seggitate; achenes ribbed, some angular or beaked; pappus many-seriate.

**Key to the species**

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1. Achenes homomorphic

2. Achenes white, cylindrical.....

**L. acaulis**

2. Achenes pale, oblong.....

**L. aspeniifolia**

1. Achenes dimorphic

3. Outer phyllaries small and ovate.....

**L. intybacea**

3. Outer phyllaries triangular-ovate to linear-lanceolate.....

.....**L. procumbens**

**Launaea acaulis** Less., Hook. f., Fl. Brit. India 3(396), 1881; Gamble, Fl. Pres. Madras 2(513). 1921; Hajra in Hajra *et al.*, Fl. India 12(304), 1995.

Fl. & Fr.: January-May

**Launaea aspeniifolia** Hook.f., Hook. f., Fl. Brit. India 3(415), 1881; Mamgain & R.R. Rao in Hajra *et al.*, Fl. India 12(306), 1995.

Fl. & Fr.: September-March

**Launaea intybacea** (Jacq.) Beauverd, Hook. f., Fl. Brit. India 3(403), 1881; Gamble, Fl. Pres. Madras 2(515), 1921; Singh N P, Fl. Eastern Kar. 1(375), 1988; Mamgain & R.R. Rao in Hajra *et al.*, Fl. India 12(283), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (96), 2015;

Fl. & Fr.: Throughout the year

**Launaea procumbens** (Roxb.) Amin, Hook. f., Fl. Brit. India 3(416), 1881; Singh N P, Fl. Eastern Kar. 1(376), 1988; Mamgain & R.R. Rao in Hajra *et al.*, Fl. India 12(309), 1995.

Fl. & Fr.: October-February

49. **Leucoblepharis** Arn.

Herb; erect; leaves alternate; heads heterogamous; achenes compressed; pappus scaly.

**Leucoblepharis subsessilis** Arn., Gamble, Fl. Pres. Madras 2(487), 1921; Singh, Fl. Eastern Kar. 1(363), 1988.

Fl. & Fr.: July-November

50. **Mikania** Willd.

Herb; climber; stem terete; leaves opposite; heads homogamous; achenes ribbed; pappus present.

**Mikania micrantha** Kunth, Hook.f., Fl. Brit. India 3(244) 1881; B.P. Uniyal in Hajra *et al.*, Fl. India 12(357) 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (110), 2015.

Fl. & Fr.: November-April

51. **Oligochaeta** K.Koch

Herb; erect; leaves sessile; heads homogamous, solitary; achenes angled; pappus multiseriate.

**Oligochaeta divaricata** K.Koch, Hook.f., Fl. Brit. India 3(383) 1881; Singh N P, Fl. Eastern Kar. 1(377), 1988; Hajra in Hajra *et al.*, Fl. India 12(153) 1995.

Fl. & Fr.: April-December

52. **Parthenium** L.

Herb; erect; stem terete; leaves alternate; heads heterogamous; achenes compressed; pappus reflexed awns.

**Parthenium hysterophorus** L., Singh N P, Fl. Eastern Kar. 1(377), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India

12(403), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (121), 2015.  
Fl. & Fr.: Throughout the year

53. ***Phyllocephalum*** Blume

Herb; erect; leaves alternate; heads homogamous; achenes ribbed; pappus present.

**Key to the species**

1. leaf base cuneate.....*P. phyllolaenum*

1. leaf base acute.....*P. ritchiei*

***Phyllocephalum phyllolaenum*** (DC.) Narayana, Hook. f., Fl. Brit. India 3(228), 1881; Gamble, Fl. Pres. Madras 677(469), 1921; Uniyal in Hajra *et al.*, Fl. India 13(341), 1995.

Fl. & Fr.: March-October

***Phyllocephalum ritchiei*** (Hook.f.) Narayana, Hook. f., Fl. Brit. India 3(238), 1881.

Fl. & Fr.: January-April

54. ***Pluchea*** Cass.

Sunshrub; erect; leaves sessile; heads heterogamous; achenes oblong, ribbed; pappus white.

**Key to the species**

1. Leaves ovate-lanceolate.....*P. paniculata*

1. Leaves ovate-elliptic.....*P. tomentosa*

***Pluchea paniculata*** (Willd.) Karthik. & Moorthy, Singh, Fl. Eastern Kar. 1(364), 1988;

Fl. & Fr.: October-January

***Pluchea tomentosa*** DC., Gamble, Fl. Pres. Madras 2(485), 1921; Singh N P, Fl. Eastern Kar. 1(378), 1988.

Fl. & Fr.:October-April3

55. ***Pseudoconyza*** Cuatrec.

Herb; stem erect, hairy; leaves alternate; heads heterogamous; anther base segittate; achenes oblong; pappus ubiseriate.

***Pseudoconyza viscosa*** (Mill.) D'Arcy, Hook. f., Fl. Brit. India 3(271), 1881; Gamble, Fl. Pres. Madras 2(485), 1921; S. Kumar in Hajra *et al.*, Fl. India 13(150), 1995.

Fl. & Fr.: November-December

56. ***Pulicaria*** Gaertn.

Herb; erect; stem terete; leaves sessile, alterante; heads heterogamous; pappus biseriate.

**Key to the species**

1. Leaves oblanceolate.....*P. angustifolia*

1. Leaves oblong.....*P. wightiana*

***Pulicaria angustifolia*** DC., Gamble, Fl. Pres. Madras 2(493), 1921; Singh N P, Fl. Eastern Kar. 1(379), 1988.

Fl. & Fr.: August-October

***Pulicaria wightiana*** C.B.Clarke, Gamble, Fl. Presi.Madras 2(493), 1921; Singh N P, Fl. Eastern Kar.1(379), 1988.

Fl. & Fr.: August-October

57. ***Senecio*** L.

Herb; leaves pinnatisect heads heterogamous; achenes ribbed; pappus absent in female florets.

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***Senecio tenuifolius*** Burm.f., Hook. f., Fl. Brit. India 3(345), 1881; Gamble, Fl. Pres. Madras 2(508), 1921; Singh N P, Fl. Eastern Kar. 1(380), 1988; R. Mathur in Hajra *et al.*, Fl. India 13(278), 1995.

Fl. & Fr.: August-October

58. ***Sigesbeckia*** L.

Herb; stem erect; leaves opposite; heads heterogamous; anther base segittate; achenes obovoid; pappus absent.

***Sigesbeckia orientalis*** L., Hook. f., Fl. Brit. India 3(345), 1881; Gamble, Fl. Pres. Madras 2(495), 1921; Singh N P, Fl. Eastern Kar. 1(380), 1988; H.J Chowdhery in Hajra *et al.*, Fl. India 12(407), 1995.

Fl. & Fr.: October-March

59. ***Sonchus*** L.

Herb; erect; leaves couline; heads homogamous; achenes oblong; pappus present.

**Key to the species**

1. Achenes 4 or more ribbed.....*S. brachyotus*

1. Achenes 3 ribbed

2. Involucral bracts 4 seriate.....*S. asper*

2. Involucral bracts 3 seriate.....*S. oleraceus*

***Sonchus asper*** (L.) Hill, Hook. f., Fl. Brit. India 3(414), 1881; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (154), 2015.

Fl. & Fr.: March-November

***Sonchus brachyotus*** DC., Singh N P, Fl. Eastern Kar. 1(381), 1988; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (155), 2015.

Fl. & Fr.: September-March

***Sonchus oleraceus*** L., Hook. f., Fl. Brit. India 3(414), 1881; Gamble, Fl. Pres. Madras 2(514), 1921; Singh N P, Fl. Eastern Kar. 1(381), 1988; Hajra in Hajra *et al.*, Fl. India 12(321), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (155), 2015.

Fl. & Fr.: February-March

60. ***Sphaeranthus*** L.

Herb; leaves alternate; heads heterogamous; achenes oblong; pappus absent.

**Key to the species**

1. Leaves with stalked glands.....*S. indicus*

1. Leaves with sessile glands.....*S. senegalensis*

***Sphaeranthus indicus*** L., Hook. f., Fl. Brit. India 3(275), 1881; Gamble, Fl. Presi. Madras 2(692), 1921; Singh N P, Fl. Eastern Kar.1(381), 1988; S. Kumar in Hajra *et al.*, Fl. India 13 (160), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (157), 2015.

Fl. & Fr.: November-March

***Sphaeranthus senegalensis*** DC., Hook. f., Fl. Brit. India 3(275), 1881; S. Kumar in Hajra *et al.*, Fl. India 13 (162), 1995.

Fl. & Fr.: Throughout the year

61. ***Sphagneticola*** O.Hoffm.

Herb; procumbent; leaves subsessile; heads solitary, heterogamous; achenes compressed; pappus present.

*Sphagneticola calendulacea* (L.) Pruski, Hook. f., Fl. Brit. India 3(306), 1881; Gamble, Fl. Pres. Madras 2(497), 1921; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(424), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Kar. (173), 2015.

Fl. & Fr.: February-May

62. *Synedrella* Gaertn.

Herb; erect; leaves opposite; heads heterogamous; chenes compressed; pappus bristly awns.

*Synedrella nodiflora* Gaertn., Hook. f., Fl. Brit. India 3(308), 1881; Gamble, Fl. Pres. Madras 2(498), 1921; Singh N P, Fl. Eastern Kar. 1(382), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(413), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (161), 2015.

Fl. & Fr.: August-November

63. *Tagetes* L.

Herb; stem glabrous; leaves opposite; heads heterogamous; achenes linear; pappus bristles.

*Tagetes erecta* L., Matthew, K.M., Fl. Tamil Nadu Carnatic, Diocesan Press, Madras.3(1), 1983; Singh N P, Fl. Eastern Kar.1(388), 1988.

Fl. & Fr.: Throughout the year

64. *Tithonia* Desf. ex Juss.

Shrub or subshrub; leaves alternate; heads solitary, heterogamous; achenes oblong; pappus fimbriate.

*Tithonia diversifolia* (Hemsl.) A.Gray, Matthew, K.M., Fl. Tamil Nadu Carnatic, Diocesan Press, Madras. 3(1), 1983; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (164), 2015.

Fl. & Fr.: September-May

65. *Tricholepis* DC.

Herb; leaves alternate; head homogamous; achenes oblong; pappus denticulate.

*Tricholepis radicans* DC., Gamble, Fl. Presi. Madras 2(511), 1921; Singh N P, Fl. Eastern Kar.1(382), 1988.

Fl. & Fr.: August-January

66. *Tridax* L.

Herb; procumbent; leaves opposite; heads heterogamous; achenes turbinate; pappus present.

*Tridax procumbens* L., Gamble, Fl. Presi. Madras 2(500), 1921; Hook. f., Fl. Brit. India 3(311), 1881; Singh N P, Fl. Eastern Kar.1(383), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(418), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (169), 2015.

Fl. & Fr.: Throughout the year

67. *Vicoa* Cass.

Herb; leaves simple, alternate; head heterogamous; achenes cylindrical; pappus absent in female and present in bisexual florets.

*Vicoa indica* DC., Hook. f., Fl. Brit. India 3(297), 1881; Gamble, Fl. Presi. Madras 2(403), 1921; Singh N P, Fl. Eastern Kar.1(385), 1988; S. Kumar in Hajra *et al.*, Fl. India 13(28), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (126), 2015.

Fl. & Fr.: February-April

68. *Wedelia* Jacq.

Herb; leaves opposite; heads heterogamous; achene oblong; pappus scales.

*Wedelia urticaefolia* (Blume) DC.ex Wight, Hook. f., Fl. Brit. India 3(306), 1881; Gamble, Fl. Pres. Madras 2(497), 1921; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(426), 1995.

Fl. & Fr.: August-October

69. *Xanthium* L.

Herb; leaves alternate; head unisexual, heterogamous; achenes 2 beaked; pappus absent.

*Xanthium strumarium* L., Hook. f., Fl. Brit. India 3(303), 1881; Gamble, Fl. Pres. Madras 2(494), 1921; Singh N P, Fl. Eastern Kar. 1(386), 1988; H.J. Chowdhery in Hajra *et al.*, Fl. India 12(427), 1995; Kavitha Sagar *et al.*, Handbook, Weeds of Karnataka, (174), 2015.

Fl. & Fr.: August-October

70. *Zinnia* L.

Herb; erect; leaves simple, opposite; heads heterogamous; pappus present.

*Zinnia elegans* L., Singh N P, Fl. Eastern Kar.1(386), 1988; Bhaskar & Kushalappa, Fl. Tumkur District, (74), 2013.

Fl. & Fr.: August-September

## DISCUSSION

The present field investigation of Chitradurga district from Karnataka state, India, revealed that total of 96 species under 70 genera of the Compositae are present. Of which herbs are more dominant (92.70%), followed by shrubs (3.12%), subshrubs (3.12%) and climbing shrub (1.04%) (Fig.2).

The collected species are flower during different seasons. Out of 96 species, 41 species were found to flower in winter season like *Acilepis divergens*, *Blumea axillaris*, *Blumea bifoliata*, *Blumea malcolmii*, *Chromolaena odorata*, *Eschenbachia leucantha*, *Goniocaulon indicum*, etc., 35 species were found to flower in rainy season like *Acmella paniculata*, *Cyanthillium albicans*, *Helianthus annuus*, *Leucoblepharis subsessilis*, etc., 12 species flower in summer season like *Ageratina adenophora*, *Blumea lacera*, *Galinsoga parviflora*, *Oligochaeta divaricata*, *Phyllocephalum phyllolaenum*, *Sonchus asper*, etc. and some species like *Acanthospermum hispidum*, *Acmella calva*, *Gnaphalium polycaulon*, *Launaea intybacea*, *Parthenium hysterophorus*, *Sphaeranthus senegalensis*, *Tagetes erecta* and *Tridax procumbens* flower throughout the year.

Asteraceae species have medicinal values. The plants which have ethnomedicinal properties are *Ageratum conyzoides*, *Xanthium strumarium* having antidermatophytic activity (Kavitha Sagar *et al.*, 2013). The whole plant of *Launaea intybacea* used as anti hyperlipidemic and the leaves of *Tridax procumbens* used as antithrombotic (Jennifer Michel *et al.*, 2020); *Bidens pilosa* used for cardiovascular diseases, *Blumea oxydonta* used to treat of urogenital problems, *Calendula officinalis* used for the treatment of

respiratory diseases, *Eclipta prostrata* having anti-dermatological activity and is an immunity booster etc. (Munish Sharma *et al.*, 2022). *Flaveria trinervia*, *Galinsoga parviflora*, *Grangea maderaspatana*, *Pluchea tomentosa* etc., are mentioned in many research papers about their medicinal values.

*Calendula officinalis*, *Chrysanthemum indicum*, *Helianthus annuus*, *Sphaeranthus indicus*, *Sphagneticola calendulacea*, *Sphagneticola trilobata*, *Tagetes erecta*, *Tithonia diversifolia*, etc., are ornamental species and cultivated for commercial purpose (Kavitha Sagar and Shivashankar, 2023, Indian forester, Accepted).

In our survey the species *Blumea obliqua*, *Blumea oxyodonta*, *Baccharoides anthelmintica*, *Calendula officinalis*, *Grangea maderaspatana*, *Pluchea paniculata*, *Pluchea tomentosa*, *Sphaeranthus indicus*, etc., which are highly aromatic in nature and it is suggested that they can be promising species to be used in perfumery, toiletries, cosmetic industries after scientific validation.

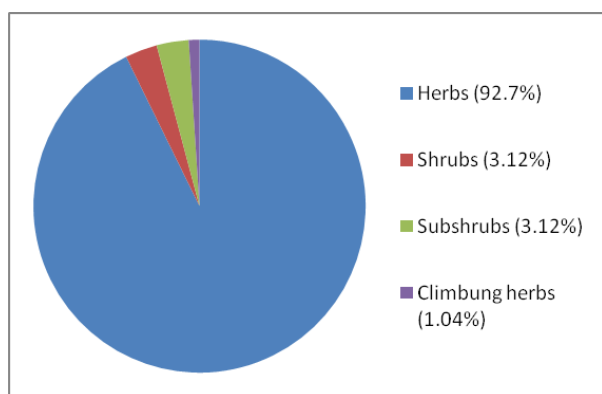


Fig. 2. Life Form Classification.

## CONCLUSIONS

The present report revealed 96 species under 70 genera with their morphological description, taxonomical status, phenology and dichotomous key for each genera and species. This data from collected plants of compositae of Chitradurga district, from Karnataka state, India can act as a ready reckoner for identification, classification, conservation strategies, utilization of bright colored plants as ornamental for landscaping, Flowerbed, Container Planting, Fencing and borders etc.

## FUTURE SCOPE

The present intensive field survey is focused on specific locality survey, morphological description, dichotomous key, phenology and taxonomical status, hence provides baseline information for future research work and investigation of Asteraceae species for all botanists, scientists, research scholars and investigative

workers to select and develop their research areas with respect to plants in general and Asteraceae species in particular.

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