



## Documentation and Ecological Impact of Existing Angiosperms on Roadsides in Purulia Town, West Bengal

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### Abstract

At close vicinity to proper township a study was conducted to analyze the angiosperms diversity on seven important urbanized roadsides in Purulia district, West Bengal, viz. Begunkodar Road (**BKR**), Deshbandhu Road (**DBR**), Ketika Road (**KTR**), Mission Road (**MSR**), Ranchi Road (**RCR**), Reny Road (**RNR**) and Wilcox Road (**WCR**) with about 35 K.M. General observation and field survey method has been used for present work. A total of 135 angiosperms were recorded which were represented by 123 genera belonging to 48 different families. The most dominant families were Fabaceae and Malvaceae with 17 and 9 species respectively. Heavy metal and other traffic pollutant tolerance plants are survived forming roadside vegetation. Roadsides flora can be helpful for bioremediation of metals. Thus, there is a tremendous scope for further studies.

### Key words

Angiosperms, Roadsides, Bioremediation, Purulia Town.

### Introduction

Roads are the common artificial infrastructures and act as an integrated part of transportation system connecting cities throughout the World village. On running, the vehicles always emitted traffic pollutants such as brake wear, tire wear, noise, road dust, oxides of carbon and nitrogen in addition to many heavy metals (Pb, Zn, Cu, Ni and Cd.) causing pollution affecting communities. Along with natural habitats, certain plants are adapted themselves to grow on roadsides. These plants absorb the pollutants in random. Then they dissolve the pollutions affects. They become tolerant and ultimately get represented as roadside vegetation diversity. Study of roadside vegetation across the cities has also been performed in various corners of the globe. [1-5].

Purulia town is the headquarter of Purulia district.

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It is interconnected through proper and smooth roads. The roads show roadside vegetation of variegated plants with aesthetic values and pollution reducing power. Many floristic studies of angiosperms diversity were carried out in Purulia as well as in West Bengal [6,7,8-13]. However, the diversities of roadside vegetations of Purulia district have not been properly documented. The paper aims to record the preliminary assessment of angiosperms, surviving in different roadsides near Purulia town.

Such kind of documentation is necessary for ecological implication, economic importance, preparation of urban vegetation scenario of road flora and also, for keen observation on changes in plant diversity.

### Materials and methods

**Study area:** The area selected for study and carrying out the present research work covers the Purulia district specifically the important roads in close to proper town. Purulia is the drought prone and western most district of West Bengal and is located between 22°60' N- 23°50' N Latitude and 85°75' E- 86°65' E Longitude within Chota Nagpur Plateau. The total area of the district is 6259 Sq. Km. This district is bordered on the east by [Bankura](#), [Paschim Medinipur](#) districts, on the north by [Burdwan district](#) of West Bengal State and [Dhanbad district](#) of [Jharkhand](#) State, on the west and south bordered by Jharkhand State. The forest covering areas of the district is nearly 87.60 thousand hectares [9] and the altitude ranging from 250 m to 700 m [11]. It has a sub-tropical climate and is characterized by high evaporation, low precipitation and typical dry deciduous forest. The soil is basically lateritic type and the temperature ranges from 11°C to 24°C during winter and from 26°C to 44°C during summer. Average rainfall varies from 1100 mm to 1500 mm [6, 9, 12].

To carry out work in Angiosperms diversity in proper Purulia town, frequent visits were conducted in Begunkodar Road (BKR), Deshbandhu Road (DBR), Ketika Road (KTR),

Mission Road (MSR), Ranchi Road (RCR), Reny Road (RNR) and Wilcox Road (WCR) covering a total of 35 K.M. during the period of January, 2021 to September, 2021, so that floristic diversity of different plants could be studied. These roads are always busy as they are interconnector of Purulia with two capitals Ranchi (J.H.) and Kolkata (W.B.) as well as Bokaro and Jamshedpur steel city, Tata-Dhanbad transportation and other districts of Jharkhand and West Bengal.

**Samples collection methods and identification:** A general observation and field survey method has been used for present work and observed different types of angiosperm plants. Apart from the study of vegetation, collected specimens were prepared by using standard herbarium techniques [14] and preserved in the herbarium of S.K.B.U., Purulia for further study. For identification adequate literatures were consulted [7,11,12,15-18] and verified by POWO [19].

### Results and discussion

A total of **135** species of angiosperms was documented under **123** genera belonging to **48** different families. Among them **119** species have been recorded as dicotyledons spreading over in **42** families under **108** genera and **16** species of monocotyledons belonging to **6** families under **15** genera. The most dominant families were Fabaceae with 17 species and Malvaceae with 9 species followed by Amaranthaceae, Asteraceae and Poaceae each with 8 species in addition to Cucurbitaceae and Lamiaceae both with 7 species. Also, Solanaceae and Euphorbiaceae both with 6 species were recorded as dominant families (Fig. 1). Apocynaceae, Moraceae and Araceae families were represented by 5, 4, and 3 species respectively. The remaining families were recorded by 1-2 species. About 25 families were represented by a single genera and species. **19** species among 15 different families viz. Amaranthaceae, Euphorbiaceae, Apocynaceae, Annonaceae, Polygonaceae, Meliaceae, Poaceae, Moraceae, Verbenaceae, Lamiaceae, Asteraceae, Fabaceae, Malvaceae, Solanaceae, Rhamnaceae were distributed in all the roadsides (Table 1). Only **28** species out of **135** species were recorded from single roadside. The vegetation of study site was represented by a diverse collection of plant species where dicots were dominant over monocots. This kind of plant diversity has been reported from roadsides of other cities of India as well [20, 21].

Availability of recorded plants were also concerned. The present study indicates that 38 species viz. *Acalypha indica*, *Achyranthes aspera*, *Alstonia scholaris*, *Amaranthus viridis*, *Annona squamosa*, *Azadirachta indica*, *Boerhavia repens*, *Butea monosperma*, *Calotropis procera*, *Coccinia*

*grandis*, *Commelina benghalensis*, *Croton bonplandianus*, *Crotalaria pallida*, *Cucurbita maxima*, *Cynodon dactylon*, *Datura metel*, *Ficus benghalensis*, *Ficus religiosa*, *Lantana camara*, *Laportea interrupta*, *Ocimum tenuiflorum*, *Parthenium hysterophorus*, *Scoparia dulcis*, *Senna sophera*, *Sida acuta*, *Solanum nigrum*, *Tridax procumbens*, *Urena lobata* and *Zizyphus jujube* etc. were very common and 46 species such as *Argemone mexicana*, *Ailanthus excelsa*, *Albizia lebeck*, *Alternanthera ficoidea*, *Catharanthus roseus*, *Cleome viscosa*, *Dalbergia sissoo*, *Eragrostis viscosa*, *Emilia sonchifolia*, *Evolvulus nummularius*, *Eleusine indica*, *Gmelina arborea*, *Heliotropium indicum*, *Ipomoea carnea*, *Leucas aspera*, *Monoon longifolium*, *Moringa oleifera*, *Oldenlandia corymbosa*, *Paspalum notatum*, *Phoenix sylvestris*, *Pongamia pinnata*, *Syzygium cumini*, *Tamarindus indica*, *Tectona grandis* etc. were common. Interestingly the other 51 species viz. *Acacia auriculiformis*, *Alocasia macrorrhizos*, *Artocarpus heterophyllus*, *Bombax ceiba*, *Colocasia esculenta*, *Cucumis melo*, *Cyperus rotundus*, *Dolichandra unguis-cati*, *Ficus racemosa*, *Jatropha curcas*, *Madhuca longifolia*, *Melia azedarach*, *Nicotiana plumbaginifolia*, *Physalis angulata*, *Plumeria obtusa*, *Psidium guajava*, *Schleichera oleosa*, *Shorea robusta*, *Tecoma stans*, *Typha angustifolia* etc. were found less common (Fig.2).

Maximum species were recorded from WC. Road (**94** spp.) followed by RC. Road (**86** spp.), BK. Road (82 spp.), KT. Road (64 spp.), D.B. Road (52 spp.), R.N. Road (57 spp.) and 40 species from MS. Road (Fig.3).

The life form of different plant species was also concerned. It was found that only 39 species viz. *Acalypha indica*, *Ageratum conyzoides*, *Amaranthus viridis*, *Corchorus aestuans*, *Phyllanthus fraternus*, *Eleusine indica*, *Ruellia tuberosa*, *Sonchus arvensis* etc. were annual herbs, and 20 species viz. *Achyranthes aspera*, *Gomphrena celosioides*, *Parthenium hysterophorus*, *Tridax procumbens*, *Mirabilis jalapa*, *Urena lobata* etc. were perennial herbs, only 15 species viz. *Justicia adhatoda*, *Jatropha gossypifolia*, *Solanum torvum*, *Senna tora*, *Senna alata*, *Ricinus communis* etc. were perennial shrub. *Argemone mexicana* was biennial herb and six species such as *Datura metel*, *Sida acuta*, *Sida cordifolia*, *Solanum viarum*, *Tephrosia purpurea* and *Triumfetta rhomboidea* belong to undershrub. Only 12 species viz. *Antigonon leptopus*, *Coccinia grandis*, *Cucumis melo*, *Dolichandra unguis-cati*, *Lablab purpureus*, *Luffa aegyptiaca*, *Melothria pendula* and *Oxalis corniculata* etc. were climber and 42 species viz. *Aegle marmelos*, *Delonix regia*, *Ficus religiosa*, *Pongamia pinnata*, *Psidium guajava*, *Vachellia nilotica*, *Terminalia*

*arjuna*, *Pterospermum acerifolium*, *Cassia fistula* etc. were trees (Fig. 4) in the present study.

**Ecological impact of existing flora:** The roadside flora are successful pollution tolerant plants. The existing vegetation are mainly the mixtures of trees, lianas and shrubs and in addition to some herbs. It has good impact in the field of socio-economical condition as they provide fire woods, food, fodder, timbers, medicines, shade, eye soothing, green scenery etc. to the neighbouring dwellers. They also give food and shelter directly to many organisms day by day and make our environment pollution free. All types of roadsides pollutants like high amount of heavy metals viz. Pb, Zn, Cu, Ni, Cd and other gaseous objects like hydrocarbons, oxides of Nitrogen, oxides of Carbon can be easily controlled by the roadside vegetation [1,2] through the interception of airborne particles and uptaking the gaseous air pollutants and absorbing metallic pollutants. Water infiltration capacity can be improved. Run of heat, soil pollution and noise pollution can be reduced. It has been seen that few species grow and spread rapidly and very common in the study site.

Some wild road flora able to absorb considerable amounts of heavy metals and help to reducing heavy metal pollution [5] viz. *Ficus benghalensis* [22], *Dalbergia sissoo* [23] and *Psidium guajava* [24]. *Psidium guajava* absorbed the increased amount of Ni, and act as best indicator for urban air pollution [24].

*Eleusine indica*, a well-known and common exotic roadside invader species [25, 26] and *Cynodon dactylon*, a cosmopolitan, high ecological potential, dominant roadside tolerant species [27] were observed on these roadsides. These species may be considered as specific ecological indications of tolerance or hyper-metal accumulation. Roadside vegetation enrich the concerned atmosphere and extremely important for human welfare.

## Conclusions

The vegetation of any place is the outcome interaction of many factors such as the elevation, soil, climate, species composition, eco-biotic interferences as well as environmental condition. Heavy metal and other traffic pollutant tolerate plants are survived forming roadside vegetation. The present study covers only the Angiosperms although there were other plants groups. Plants with broad leaves, dense canopy and existing plants of maximum diversity are functional roadside floral content and pollution controller with aesthetic values. Most effectives of them are under further scope of research for bioremediation of heavy metals.

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**Table 1. An enumeration of different species on roadsides in Purulia Town, West Bengal.**

Sl. No.	Scientific Name of the Plants	Family	BK R	DB R	KT R	M SR	RC R	R N R	W CR	Habit	Status
1	<i>Abutilon theophrasti</i> Medik.	Malvaceae					+			AH	Less common
2	<i>Acacia auriculiformis</i> A.Cunn. ex Benth.	Fabaceae	+				+			TR	Less common
3	<i>Acalypha indica</i> L.	Euphorbiaceae	+	+	+	+	+	+	+	AH	Very common
4	<i>Achyranthes aspera</i> L.	Amarantaceae	+	+	+	+	+	+	+	PH	Very common

5	<i>Acmella oleracea</i> (L.) R.K. Jansen	Asteraceae	+			+				AH	Less common
6	<i>Aegle marmelos</i> (L.) Correa	Rutaceae		+			+	+	+	TR	Common
7	<i>Ageratum conyzoides</i> L.	Asteraceae	+	+		+		+		AH	Common
8	<i>Ailanthus excelsa</i> Rox b.	Simaroubaeae		+			+		+	TR	Common
9	<i>Alangium salviifolium</i> (L. f.) Wangerin	Cornaceae	+		+		+		+	TR	Common
10	<i>Albizia lebeck</i> (L.) Benth.	Fabaceae	+			+	+		+	AH	Common
11	<i>Alocasia macrorrhizos</i> (L.) G. Don.	Araceae							+	AH	Less common
12	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	+		+	+	+	+	+	TR	Very common
13	<i>Alternanthera ficoidea</i> (L.) P. Beauv.	Amaranthaceae		+			+		+	PH	Common
14	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Amaranthaceae					+			PH	Less common
15	<i>Alternanthera sessilis</i> (L.) R. Br. ex Dc.	Amaranthaceae	+	+			+	+	+	PH	Very common
16	<i>Amaranthus spinosus</i> L.	Amaranthaceae	+		+		+		+	AH	Common
17	<i>Amaranthus viridis</i> L.	Amaranthaceae	+	+		+	+	+	+	AH	Very common
18	<i>Amorphophallus paeo Niifolius</i> (Dennst.) Nicolson	Araceae	+			+			+	PH	Common
19	<i>Anisomeles indica</i> (L.) Kuntze	Lamiaceae					+			PH	Less common
20	<i>Annona squamosa</i> L.	Annonaceae	+		+		+	+	+	TR	Very common
21	<i>Antigonon leptopus</i> Hook. & Arn.	Polygonaceae		+	+	+	+		+	CL	Very common
22	<i>Argemone mexicana</i> L.	Papaveraceae	+	+			+		+	BH	Common
23	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	+							TR	Less common
24	<i>Azadirachta indica</i> A. Juss.	Meliaceae	+	+	+		+	+	+	TR	Very common
25	<i>Bauhinia tomentosa</i> L.	Fabaceae		+						TR	Less common
26	<i>Blumea lacera</i> (Burm. f.) DC.	Asteraceae				+				AH	Less common
27	<i>Boerhavia repens</i> L.	Nyctaginaceae	+	+	+			+	+	PH	Very common

28	<i>Bombax ceiba</i> L.	Malvaceae					+		+	TR	Less common
29	<i>Borassus flabellifer</i> L.	Arecaceae	+						+	TR	Less common
30	<i>Brassica nigra</i> (L.) W.D.J.Koch.	Brassicaceae	+		+			+		AH	Common
31	<i>Butea monosperma</i> (Lam.) Kuntze	Fabaceae	+	+	+		+		+	TR	Very common
32	<i>Calotropis procera</i> (Aiton) W.T.Aiton	Apocynaceae	+	+	+	+	+	+	+	PS	Very common
33	<i>Carica papaya</i> L.	Caricaceae					+	+	+	TR	Common
34	<i>Cascabela thevetia</i> (L.) Lippold	Apocynaceae					+		+	PS	Less common
35	<i>Cassia fistula</i> L.	Fabaceae	+		+		+		+	TR	Very common
36	<i>Catharanthus roseus</i> (L.) G. Don	Apocynaceae	+		+			+	+	PH	Common
37	<i>Cleome viscosa</i> L.	Cleomaceae	+		+		+		+	AH	Common
38	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae		+	+		+	+	+	CL	Very common
39	<i>Colocasia esculenta</i> (L.) Schott	Araceae					+			PH	Less common
40	<i>Commelina benghalensis</i> L.	Commelinaceae	+	+	+		+		+	PH	Very common
41	<i>Corchorus aestuans</i> L.	Malvaceae	+		+		+		+	AH	Common
42	<i>Crotalaria pallida</i> Aiton	Fabaceae	+		+		+	+	+	PS	Very common
43	<i>Croton bonplandianus</i> Baill.	Euphorbiaceae	+	+	+	+	+	+	+	AH	Very common
44	<i>Cucumis melo</i> L.	Cucurbitaceae							+	CL	Less common
45	<i>Cucurbita maxima</i> Duchesne	Cucurbitaceae			+	+	+	+	+	CL	Very common
46	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	+	+	+	+	+	+	+	AH	Very common
47	<i>Cyperus rotundus</i> L.	Cyperaceae					+		+	AH	Less common
48	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Poaceae	+		+		+		+	AH	Common
49	<i>Dalbergia sissoo</i> Rox b.ex DC.	Fabaceae	+			+	+		+	TR	Common
50	<i>Datura metel</i> L.	Solanaceae	+	+	+		+	+	+	US	Very common

51	<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Fabaceae	+	+	+		+	+		TR	Very common
52	<i>Digitaria sanguinalis</i> (L.) Scop.	Poaceae				+		+		AH	Less common
53	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey	Cucurbitaceae	+		+		+		+	CL	Common
54	<i>Dolichandra unguis-cati</i> (L.) L.G.Lohmann	Bignoniaceae					+			CL	Less common
55	<i>Eclipta prostrata</i> (L.) L.	Asteraceae	+						+	AH	Less common
56	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	+				+	+	+	AH	Common
57	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae		+				+	+	AH	Common
58	<i>Eragrostis spectabilis</i> (Pursh) Steud.	Poaceae	+		+		+		+	AH	Common
59	<i>Eragrostis viscosa</i> (Retz.) Trin.	Poaceae	+	+					+	AH	Common
60	<i>Euphorbia hirta</i> L.	Euphorbiaceae	+	+	+	+	+	+	+	AH	Very common
61	<i>Evolvulus nummularius</i> (L.) L.	Convolvulaceae	+		+			+	+	CL	Common
62	<i>Ficus benghalensis</i> L.	Moraceae	+	+	+	+	+	+	+	TR	Very common
63	<i>Ficus racemosa</i> L.	Moraceae		+			+			TR	Less common
64	<i>Ficus religiosa</i> L.	Moraceae	+	+	+	+	+	+	+	TR	Very common
65	<i>Gmelina arborea</i> Roxb. ex Sm.	Lamiaceae	+			+			+	TR	Common
66	<i>Gomphrena celosioides</i> Mart.	Amaranthaceae		+		+		+	+	PH	Common
67	<i>Heliotropium indicum</i> L.	Boraginaceae	+		+		+	+		AH	Common
68	<i>Ipomoea carnea</i> Jacq.	Convolvulaceae	+		+		+			PS	Common
69	<i>Jatropha curcas</i> L.	Euphorbiaceae			+					PS	Less common
70	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	+						+	PS	Less common
71	<i>Justicia adhatoda</i> L.	Acanthaceae	+			+	+		+	PS	Common
72	<i>Lablab purpureus</i> (L.) Sweet	Fabaceae		+						CL	Less common
73	<i>Lantana camara</i> L.	Verbenaceae	+	+	+	+	+	+	+	PS	Very common

74	<i>Laportea interrupta</i> (L.) Chew	Urticaceae	+	+			+	+	+	AH	Very common
75	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae		+	+			+	+	AH	Common
76	<i>Luffa aegyptiaca</i> Mill.	Cucurbitaceae	+	+	+		+	+	+	CL	Very common
77	<i>Madhuca longifolia</i> (J. Koenig ex L.) J.F. Mac br.	Sapotaceae							+	TR	Less common
78	<i>Malvastrum coroman delianum</i> (L.) Garcke	Malvaceae						+		PH	Less common
79	<i>Mangifera indica</i> L.	Anacardiaceae					+		+	TR	Less common
80	<i>Martynia annua</i> L.	Martyniaceae			+		+		+	AH	Common
81	<i>Melia azedarach</i> L.	Meliaceae	+						+	TR	Less common
82	<i>Melothria pendula</i> L.	Cucurbitaceae					+		+	CL	Less common
83	<i>Mesosphaerum suaveolens</i> (L.)Kuntze	Lamiaceae					+			AH	Less common
84	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	+			+			+	PH	Common
85	<i>Monoon longifolium</i> (Sonn.) B.Xue & R.M.K.Saunders	Annonaceae	+	+			+	+		TR	Common
86	<i>Moringa oleifera</i> Lam.	Moringaceae			+		+	+	+	TR	Common
87	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae			+				+	TR	Less common
88	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Rubiaceae	+							TR	Less common
89	<i>Nicotiana plumbaginifolia</i> Viv.	Solanaceae	+						+	AH	Less common
90	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	+	+	+	+	+	+	+	PH	Very common
91	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	+		+	+			+	AH	Common
92	<i>Ouret lanata</i> (L.) Kuntze.	Amaranthaceae		+					+	AH	Less common
93	<i>Oxalis corniculata</i> L.	Oxalidaceae	+		+				+	CL	Common
94	<i>Parthenium hysterophorus</i> L.	Asteraceae	+	+	+	+	+	+	+	PH	Very common
95	<i>Paspalum notatum</i> Flugge.	Poaceae	+		+		+		+	PH	Common



96	<i>Paulownia tomentosa</i> (Thunb.) Steud.	Paulowniaceae						+			TR	Less common
97	<i>Persicaria hydropiper</i> (L.) Delarbre	Polygonaceae	+								AH	Less common
98	<i>Phoenix sylvestris</i> (L.) Roxb.	Arecaceae	+					+		+	TR	Common
99	<i>Phyllanthus fraternus</i> G. L. Webster	Phyllanthaceae				+					AH	Less common
100	<i>Physalis angulata</i> L.	Solanaceae						+			AH	Less common
101	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Fabaceae								+	TR	Less common
102	<i>Plumeria obtusa</i> L.	Apocynaceae						+			TR	Less common
103	<i>Pongamia pinnata</i> (L.) Pierre	Fabaceae	+					+	+	+	TR	Common
104	<i>Portulaca oleracea</i> L.	Portulacaceae		+	+				+		AH	Common
105	<i>Psidium guajava</i> L.	Myrtaceae		+							TR	Less Common
106	<i>Pterospermum acerifolium</i> (L.) Willd.	Malvaceae						+			TR	Less common
107	<i>Ricinus communis</i> L.	Euphorbiaceae	+	+	+	+	+	+	+	+	PS	Very common
108	<i>Ruellia tuberosa</i> L.	Acanthaceae	+			+			+	+	AH	Common
109	<i>Saccharum spontaneum</i> L.	Poaceae	+							+	PH	Less common
110	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae						+		+	TR	Less common
111	<i>Scoparia dulcis</i> L.	Plantaginaceae	+		+	+			+	+	AH	Very common
112	<i>Senna alata</i> (L.) Roxb.	Fabaceae	+		+			+	+	+	PS	Less common
113	<i>Senna sophora</i> (L.) Roxb.	Fabaceae	+	+	+	+	+	+	+	+	PS	Very common
114	<i>Senna tora</i> (L.) Roxb.	Fabaceae	+	+	+	+	+	+	+	+	PS	Very common
115	<i>Shorea robusta</i> C.F. Gaertn.	Dipterocarpaceae		+				+			TR	Less common
116	<i>Sida acuta</i> Burm.f.	Malvaceae	+	+	+	+	+	+	+	+	US	Very common
117	<i>Sida cordifolia</i> L.	Malvaceae				+					US	Less common
118	<i>Solanum nigrum</i> L.	Solanaceae	+	+	+	+	+	+	+	+	AH	Very common

119	<i>Solanum torvum</i> Sw.	Solanaceae							+		PS	Less common
120	<i>Solanum viarum</i> Dunal	Solanaceae			+						US	Less common
121	<i>Sonchus arvensis</i> L.	Asteraceae	+	+							AH	Less common
122	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	+		+			+			TR	Common
123	<i>Tamarindus indica</i> L.	Fabaceae			+	+		+		+	TR	Common
124	<i>Tecoma stans</i> (L.) Jus s.ex Kunth	Bignoniaceae			+						PS	Less common
125	<i>Tectona grandis</i> L.f.	Lamiaceae	+		+			+		+	TR	Common
126	<i>Tephrosia purpurea</i> (L.)Pers.	Fabaceae	+		+					+	US	Common
127	<i>Terminalia arjuna</i> (Roxb.ex DC.)Wight & Arn.	Combretaceae			+	+		+			TR	Common
128	<i>Trichosanthes cucumerina</i> L.	Cucurbitaceae			+			+	+	+	CL	Common
129	<i>Tridax procumbens</i> L.	Asteraceae	+	+	+	+		+	+	+	PH	Very common
130	<i>Triumfetta rhomboidea</i> Jacq.	Malvaceae	+							+	US	Less common
131	<i>Typha angustifolia</i> L.	Typhaceae								+	PH	Less common
132	<i>Urena lobata</i> L.	Malvaceae	+	+	+	+		+	+	+	PH	Very common
133	<i>Vachellia nilotica</i> (L.) P.J.H. Hurter & Mabb.	Fabaceae	+					+		+	TR	Common
134	<i>Vitex negundo</i> L.	Lamiaceae	+	+	+			+	+	+	PS	Very common
135	<i>Ziziphus jujube</i> Mill.	Rhamnaceae	+	+	+	+		+	+	+	TR	Very common

Abbreviation:- Annual Herb, P.H = Perennial Herb, P.S = Perennial Shrub, T R= Tree, B.H =Biennial Herb, CL = Climber, U.S = Under Shrub.

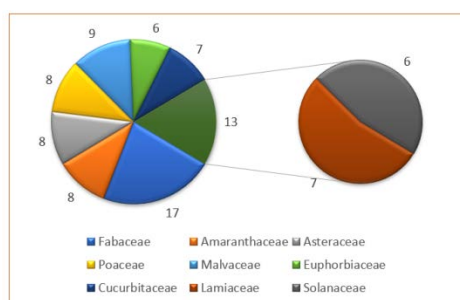


Fig.1.Dominant families of angiosperms on roadsides.

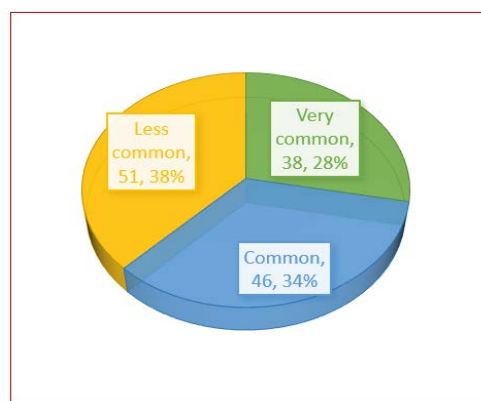


Fig.2.Status of angiosperms on roadsides.

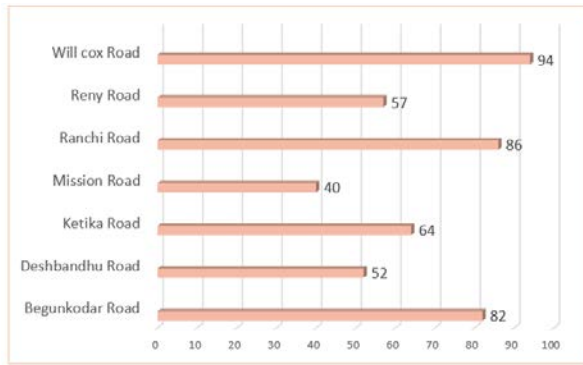


Fig.3.Attendance of species on different roadsides.

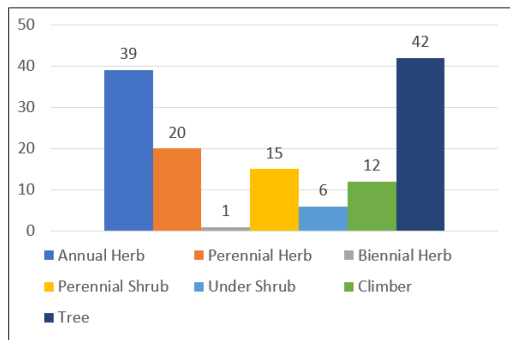


Fig.4. Life form of angiosperms on roadsides.



Fig. 5. A photo plate showing few (a-i) roadsides flora.