

NATURAL DYE YIELDING PLANTS AND PERFORMANCE OF DYEING COLOURS

¹.Rani.R
¹Research Scholar
 PG & Research Dept. of Botany
 Govt Arts College
 Dharmapuri
 Tamil Nadu
 India

².Banu.M
² Research Scholar
 PG & Research Dept. of Botany
 Govt Arts College
 Dharmapuri
 Tamil Nadu
 India

³ Vijaya Dhamodharan
³ Associate Professor & Head
 PG & Research Dept. of Botany
 Govt Arts College
 Dharmapuri
 Tamil Nadu
 India

Abstract: World is rich in biodiversity as well as in the forest. Many plants have been used to make dye. Natural dye are derived from naturally occurring source such as plants, insects, animals and minerals. Synthetic dyes develop several kinds of pollution in the environment .In recent time environmental awareness for health caused by synthetic dyes has regained importance of natural dyes .It is non-allergic, nontoxic and eco -friendly. The present study of my research is surrounding by Dharmapuri District in Tamil Nadu, India.

Key word: Dye yielding Plants, survey, Dharmapuri Dist.

LINTRODUCTION

Natural colour has been an important criterion for acceptability of products, like textiles ,cosmetics , food and other items (royetal ,2008) primitive men used dye stuff to colour animals skin and their own skin during festival times .He believed that colour them magical power and got them victory during war (Siva,2007) .Natural dye is an old textile making itself. History reveals that chines have recorded the use of dyestuff even before 2600 BC(susan C Druding ,1982).Plants dyes were used to colour clothing are other textile but by mid-1800,chemists began producing synthetic substitute for them yearly 20th century only a small percentage of textile dyes were extracted form plants. Lately there has been increase interest in herbal dyes such as consumer have begun aware of ecological and environmental problems related to the use of synthetic dyes (Indian J Nat prod ,1991).

Natural dyes are dyes or colourants derived from the naturally occurring sources such as plants, e.g., indigo and saffron; insects, e.g., cochineal beetles and lac scale insects; animals, e.g., some species of mollusks or shellfish; and minerals, e.g., ferrous sulphate, ochre, and clay without any chemical processing (Chengaiiah and Mallikarjuna, 2010; Kadolph, 2008⁵).

The most common plant parts are used to extracting dyes are seeds ,flowers ,leafs ,berries ,stems ,barks and roost. Some parts may have more than one colour depending up on which parts of the plants is used to shade of colour .A plant produce will vary according to season at which the plants is picked how it was grown ,soil condition ,ets(Padma S Vankar ,2000).Natural dyes are environment-friendly for example turmeric the brightest of naturally occurring yellow dyes is a powerful antiseptic which revitalized the skin (Mahanta ,D and Tiwari ,S.C.,2005⁷).Natural dyes produce to extradinary diversity of rich and colours that complement each other in 1856 william prekinds accidently synthesized a dyes declined tremendously because the existing natural dyes failed to full fill the demand of market. Natural dyes are permanent than other colourant(Addeal et al 2009).The vegetable colour are non-pollutant ,mainly consists of flavonoids anthocyanin's ,quinines are carotenoids and required a mordant in dyeing of textiles to enhance the binding forces between colour and substrate (Mathura J P & Gupta N P 2003⁶)

Plant dye are best with natural fibers such as cotton, linen, wool, silk, jude, ramine and sisal (Padma S Skin and Vankar 2005).Recent resurgence in research and development on natural dye production and application is observed due to increasing popularity of more natural lifestyle based on naturally sustainable good (Grifoni et al., 2009⁴) .Natural dyes is full of exquisite colours fascinating and attracting human (Dawson et al., 2009³).Natural dyes usually produce the soft, lustrous and smoking shade to the human eyes. Wide range of colours can be produced by mix and match system. They are usually renewable and biodegradable .Moreover, the residue of the extracted

dyestuffs without using chemical can become fertilizer in agricultural yields to reduce the disposal problems. The application of natural dyes can reduce consumption of fossil fuel based chemical dyes and has a potential to earn carbon credit (Samanta and Konar,2010¹¹).

Thus it is observed from the present study that different dyes yielding plant have important rule in the social and cultural life of the Dharmapuri District.

II. METHODOLOGY

In this study to cover various Natural dye yielding plants in Dharmapuri District. Dharmapuri is a district in Western parts of Tamil Nadu in South India. It is the first District created in Tamil Nadu after the Independence of India by splitting it from than Salem district on 10 October 1965. The other major town in the district are Harur, Palacode, Karimangalam, Pennagaram and Pappireddipatti. Dharmapuri District around 30 percent area is under forest cover. The Cavery river enter Tamil Nadu through this district. The whole district is surrounded by hills and forest. Its consist of for territorial ranges namely Dharmapuri, Palacode, Pennagaram and Hoganagal range. Now we study the Vadalmali and Thoppur area in Dharmapuri region to study various dye yielding plants and eflora living in the forest. I collect some natural dye yielding plant in above District to finding colours at the same time to collet some dye yielding plant in Pennagaram, Hoganagal and Palocode. In the meantime some houses in growing natural dye yielding plant in Dharmapuri plan District to study and analysis the dyeing colours. I study some dye yielding plant in below table 1

III. RESULT AND DISCUSSION

The Dharmapuri Distric hills have been explored by many previous investigated for its floristic compositions. But so for their related to occurrence of natural dyes in Dharmapuri District hills. Occurrence of 42 dye yielding plants angiosperm species belonging to different family. The below list of plant botanical name, family, habit, dye yielding plant parts and colour produced Table .1.

Table .1 List of Dye Yielding Plant Name in Dharmapuri District

S. No	Plant Botanical name	Family	Habit	Dye yielding plant parts	Colour produced
1	Acacia catechu wild.	Mimosaceae	Tree	Bark	Brown
2	Acacia nilotica L. (Willd) ex Del.	Mimosaceae	Tree	Leaf	Black
3	Aegle marmelos (L) .Correa.	Rutaceae	Tree	Fruit	Yellow
4	Artocarpus heterophyllus Lam.	Moraceae	Tree	Wood	Yellow
5	Bauhinia purpurea L. Benth.	Caesalpiniaceae	Tree	Bark	Yellow
6	Bixa orellana L.	Bixaceae	Tree	Dry Seed	Orange
7	Bougainvillea glabra C ho isy.	Nyctaginaaceae	Tree	Fresh flower	Yellow
8	Butea monosperma (Lam) K untze.	Fabaceae	Tree	Dry flower	Yellow
9	Butea superb Roxb.	Fabaceae	Shrub	Root	Red
10	Carthmus tinctorius L.	Asteraceae herb	Herb	Flowers	Red
11	Cassia fistula L.	Caesalpiniaceae	Tree	Bark and sapwood	Red
12	Cassia tora L.	Caesalpiniaceae	Herb	Seed	Blue
13	Casuarina equisetifolia L.	Caesalpiniaceae	Tree	Bark	Light reddish
14	Curcuma longa L.	Zingiberaceae	Herb	Rhizome	Yellow
15	Delonix regia(Bo i.ex Hook.)Raf.	Caesalpinaceae	Tree	Bark	Yellow
16	Eclipta prostrate L.	Asteraceae	Herb	Whole plant	Black
17	Ervatamia divaricate L.	Apocynaceae	Shrub	Seed	Yellow

S. No	Plant Botanical name	Family	Habit	Dye yielding plant parts	Colour produced
18	Euphorbia pulcherrima Graham.	Euphorbiaceae	Shrub	Leaves	Red
19	Euphorbia tirucalli L.	Euphorbiaceae	Shrub	Fruit	Red
20	Emblica officinalis Gaertn .sys phyllanthus emblica Linn.	Euphorbiaceae	Tree	Fruits	Brown
21	Gossypium herbaceum L.	Malvaceae	Shrub	Flower	Yellow
22	Indigofera tinctoria L.	Fabaceae	Shrub	Leaves ,Seed	Bluish Black ,Indigo
23	Lawsonia inermis L.	Lythraceae	Tree	leaves	Red
24	Lagerstroemia parviflora Roxb.	Lythraceae	Shrub	Bark	Black
25	Lawsonia alba Linn.	Lythraceae	Shrubs	Leaves	Brown
26	Mangfera indica L.	Anacardiaceae	Tree	Bark	Black
27	Morinda angustifolia Roxb.	Rubiaceae	Tree	Steam, Root	Red
28	Mirabilis jalapa L.	Nyctadinaceae	Herb	Flower	Red
29	Madhuca indica J.F .Gmel.	Sapotaceae	Tree	Bark	Reddish yellow
30	Morinda citrifolia Linn.	Rubiaceae	Tree	Root bark	Dull red
31	Nyctanthes arbor –tristis L.	Nyctadinaceae	Tree	Flower	Orange
32	Phyllanthus emblica L.	Euphorbiaceae	Tree	Leaf	Black
33	Piper betle L.	Piperaceae	Climber	Leaves,Root	Blue
34	Solanum nigrum L.	Solanaceae	Herb	Fruit	Black
35	Syzygium cumini(L.) Skeels.	Myrtaceae	Tree	Bark	Red
36	Tagetes erecta L.	Asteraceae	Herb	Flowers	Yellow
37	Tectona grandis L.f.	Verbenaceae	Tree	Stem bark	Yellow
38	Terminalia catappa L.	Combretaceae	Tree	Fruit	Black
39	Teminalia chebula Retz.	Combretaceae	Tree	Fruit	Yellow
40	Toddalia asiatica (L.)Lam.	Rutaceae	Tree	Root	Yellow
41	Wrightia tinctoria R .Br.	Apocynaceae	Tree	Leaves and seed	Blue
42	Zizipus jujube Mill.	Rhamnaceae	Tree	Fruit	Red

Table.2 Habit wise Presentation of Dye Yielding Plant

S.No	Habits	Value
1	Tree	26
2	Shrub	8
3	Herb	7
4	Climber	1

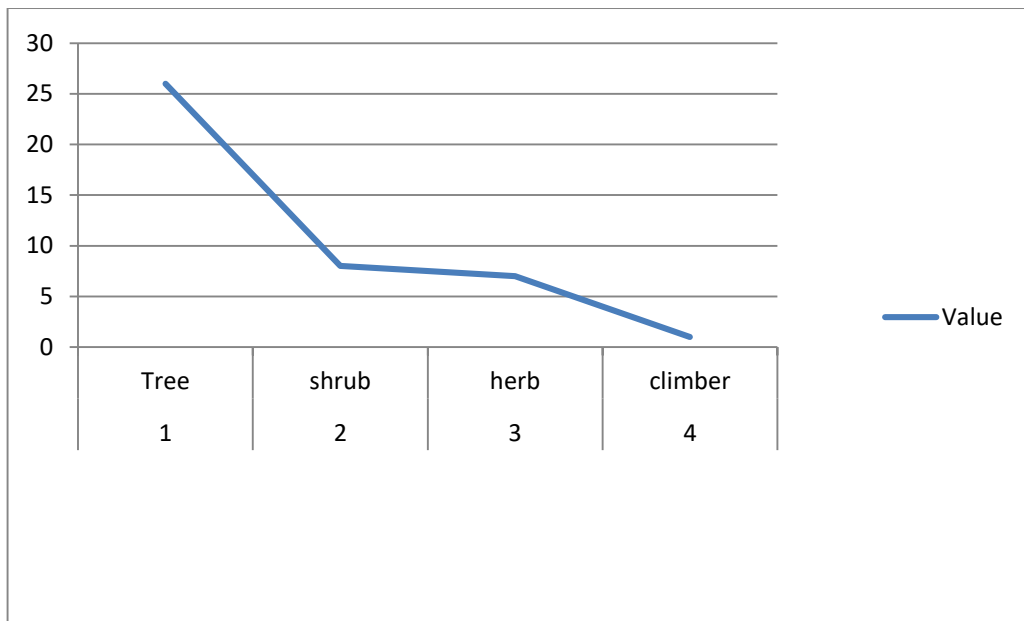
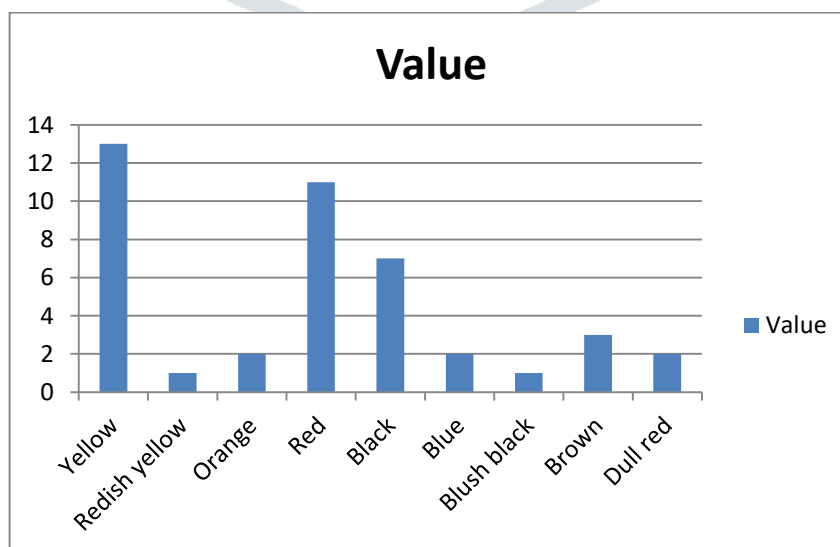


Table .3 Colour wise presentation of Dye Yielding Plant

S.No	Colour	Value
1	Yellow	13
2	Redish yellow	1
3	Orange	2
4	Red	11
5	Black	7
6	Blue	2
7	Blush black	1
8	Brown	3
9	Dull red	2



1. Picture: Result of various color plant

Most of the natural dyes not only eco safe but also added value for medicinal effect on skin and skin friendly. Now a days organic values of eco friendly products has generated renewed interest of consumer towards use of textiles dyes with eco friendly natural dye. Natural dyes are demand not only in textiles industry but in cosmetics leather, food and pharmaceuticals. My literature review is totally based on dye yield plants and their specified parts and which gives colours occurred.

IV.CONCLUSION

Due to increasing awareness among people about the harmful effects of synthetic dyes. Products made from natural materials are gaining popularly. As natural dye shows non-toxic ,non-allergic effects and result in less pollution as well as less side effect, In spite of being gifted with treasure of diverse flora only a little has been exploited to fulfill the need of textile colorant. The study on review of natural dyes is an important step towards documenting these treasures of knowledge on the utilization of resources of natural dye.

REFERENCE

- [1].Adeel ,S.Ali ,S.Bhatti 1.A .And Zsila ,F,(2009)Dyeing of Cotton Fabric using pomegranate (*Punica granatum*)Aqueous Extract .Asian J.Chem.,21(5):3493-3499
- [2].Chengaiyah,B.,& Mallikarjuna R.2010.Medicinal important of natural dyes-A review .*International Journal of PharmTech Research*,pp.Vol.2,No.1,pp 144-154.
- [3]Dawson T.L(2009) :Biosynthesis and synthesis of natural colours .colour.Technol 125,61-73.
- [4].Grifoni D.Bacci L.Zipoli G.Carreras G.Baronti S.Sabatini F.(2009):Laboratory and outdoor Assessment of UVprotection offered by Flax and Hemp Fabrics dyes with Natural Dyes Photochemical photobiology 85,313-320.
- [5].Kadolph,S.2008.Natural Dyes: A traditional craft experiencing new attention. pp Vol.75,No.1
- [6].Mathur J.P & Gupta N P (2003):use of natural mordant in dyeing of wool volume 28 2003,PP 90-93
- [7].Mahanta ,D.and Tiwari, s.c,Natural dye-yielding plants and indigenous knowledge on dye preparation in Arunachal Pradesh ,Northeast India ,curr.sci.,2005,88,1474-1780
- [8].Pigments of some crude drugs ad their utilization, Indian J Nat Prod 1991,7,11-13.
- [9].Padma S V ankar ,Chemistry of natural Dyes ,Resonance ,2000,5(10),73-80.
- [10].Roy S.Chatterjee S.Sen S.K.(2008):biotechnological; poetical of phaffiarhodozyma J Appli Biosci ,5:115-122
- [11]. Samanta , A. K and Konar ,A.2010.*Dying of Textiles with Natural Dyes. India: University of Calcutta. Secondary protein structure with Cultural Connections* .Retrieved 2013.
- [12]. Siva R. (2007): Status of natural dye and dye yielding plants in India. Curr sci.:92(7):916-925
- [13]. Susan C Druding,A bi-annual gathering of weavers, dyers and spinners, convergence, 1982 ,seattle,Washington.6.Siva R .(2007):Status natural dye and dye yielding plant in India.curr.sci.:92(7):916-925.