

# Indigenous Plant Sources of Natural Dye in North East India

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**Abstract**— The entire world of us is full of colours as everything in the earth naturally displays some pleasing colours. From the passing ages every region of world has produced different colour and pigments depending on the available natural resources by various methods of extraction and application. In today's context, natural dyes as colouring matter in food and textiles is an important component for our health as well as for maintaining eco- friendly environment as nature demands. In many of the societies especially who are aware about harmful effect of synthetically dyed fabric, among them the natural dyes promotion is a very optimistic and promising aspect. This study was conducted to find out the dye yielding plant available in our surrounding and it is estimated that there are more than two hundred and forty dye yielding plants were scattered in different area of north east India which can successfully give natural dye.

**Keywords** — Natural dyes, Textile colour, Synthetic dye, Eco-friendly, Sustainable product, Plant product.

## I. INTRODUCTION

North east India, consisting of the states of Assam, Arunachal Pradesh, Manipur, Meghalaya, Tripura and Nagaland which are situated in the Agro Climatic zones II and is considered as the “store house of different plants”. The people of these states used natural dyes from plant sources for their domestic as well as commercial purpose. Considering the current importance of natural dye for human health and ecological point of view, there is an urgent need to study the dye yielding plants varieties of these states for mass production of natural dye. There is also an urgent need to conserve some plant sources which are on verge of extinction.

In present context, food and textiles colored with natural dyes are highly preferred by health conscious consumers and today there is a niche market for such products. The total share of natural dyes in the textile sector is approximately only 1 % due to certain technical and sustainability issues involved in the production and application of these dyes such as non availability in ready-to-use standard form, unsuitability for machine use, limited and non reproducible shades. Natural dyes are sustainable as they are renewable and bio-degradable but still they cannot fulfill the huge demand from the textile sector in view of the preferential use of land for food and feed purposes but there is scope for production and collection of dye yielding plants from various sources of nature.

Natural dyes can be used for in the coloration of food products, medicines, dyeing of almost all types of natural as well as synthetic fibres. They are considered eco-friendly, renewable, bio degradable, skin friendly and may also provide enormous health benefits to the wearer. In view of the importance of natural dye for our daily life, attempt was made to find out the dye yielding plants of North East India and categorized them according to their dye yield from different plant parts.

## II. METHODOLOGY

As per research objectives, extensive survey was carried out on dye yielding plants available in North East India especially in the Agro-Climatic zones II, for the period of six months. Investigator visited different forest areas and the river bank of the Brahmaputra, the low lying areas of the state of Assam, hilly area of Arunachal Pradesh, Meghalaya, Manipur, Tripura, Mizoram and a few districts of Nagaland.



Some of the plant species were physically collected from different forests of the states especially the Assam (Longitudes 89.1° E and 24.3° N and 28° N Latitude) and those were identified by the Taxonomists of Assam Agricultural University. The new plants, seeming to have possibility of color yield, were examined by crushing the plants and rubbing it on white clothes though the permanent color produced by a plant depend on the chemical constituent of the extracted dye particles. On the basis of secondary data already available some sources of dye yielding plant was identified and listed accordingly. Numbers of dye yielding plants were identified by pretesting and the color fastness of dyes to sunlight and washing were examined before the plants were reported as dye giving plants.

Primary data regarding natural dye used before the invention of synthetic dye were obtained through formal and informal interview of the local weavers of the Assam namely- the peoples of Shyam communities of Jorhat, (Titabar) and Sivasagar district, weavers of Mishing communities of Dibrugarh, North Lakhimpur, Jorhat, Golaghat, Nagoan, Tezpur and Kamrup districts, specially peoples who were traditionally used natural dye from plants sources. It is a very enormous and time consuming investigation as the data of chemical investigation of some indigenous dyes were also evaluated along with hundred of review of the relevant literatures on dye yielding plants of Assam and nearby states.

### III.FINDINGS AND DISCUSSION

As India is the hub of diverse natural resources and the Indian flora is estimated to contain above 50,000 thousands species, including twenty thousands 20,000 vascular plants, 600 pteridophytes, 2,700 bryophytes, 5,000 algae, 20,000 fungi and 1,600 lichens ( Dayal et al., 1999), and the highest numbers of dye yielding plants were available in North East India. Most of the plants can yield natural dye from any of its parts viz. stems, leaves, flower, seeds, rind, fruits, twigs, barks and roots. It was noted that plants are the most easily available dye sources and even the waste part of plant can yield natural dye. The study also showed that every community of the state of Assam has their own tradition of weaving textiles dyed with indigenous natural color and there were some taboos and occasion on which particular color was used (kar and Borthakur, 2008). Some of the natural dyes were well known in the past for their dyeing properties and have remained in use even now, albeit on a small scale. Recent environmental awareness has again revived interest in natural dyes mainly among environmentally conscious people.

On the basis of information collected and available literature all dye giving plants, herbs, flowering plants and tree available in North East India, were categories according its color yield such as red, blue, yellow, brown, orange, chocolate, purple and black.

**Table 1. Dye/color yielding plants of North East India**

Sl. No.	Common Name	Botanical Name	Family	Parts used
<b>Red</b>				
1	Al	<i>Morinda citrifolia</i> Linn.	Rubiaceae	Root, bark
2	Areca nut	<i>Areca catechu</i> Linn.	Palmeceae	Fruit
3	Aloe vera	<i>Aleo barbadensis</i> Linn. Burm. F	Liliaceae	Whole plant
4	Beets	<i>Beta vulgaris</i> Linn.	Chenopodiaceae	Roots
5	Black Plum	<i>Syzygium cumini</i> (Linn.) Skeels	Myrtaceae	Bark
6	Bougainvillea	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Flower
7	Cocks combs	<i>Celosia cristata</i>	Amaranthaceae	Flower
8	Cutch	<i>Acacia catechu</i> Willd.	Leguminosae	Wood



Sl. No.	Common Name	Botanical Name	Family	Parts used
9	Dwarf Gulmohor	<i>Caesalpinia pulcherrima</i> Swartz.	Leguminosae	Red
10	European Madder	<i>Rubia tinctorum</i> Linn.	Rubiaceae	Bark
11	Four o'clock plant	<i>Mirabilis jalapa</i> Linn.	Nyctaginaceae	Flower
12	Goran	<i>Ceriopstagal</i> (Perr) C.B. Robins	Rhizophoraceae	Bark
13	Holly hock	<i>Alcea rosea</i> Linn.	Malvaceae	Flower
14	Indian Laburnum	<i>Cassia fistula</i> Linn.	Leguminosae	Bark
15	Indian kino tree	<i>Pterocarpus marsupium</i> Roxb.	Leguminosae	Bark
16	Jatikoroi	<i>Albizia odoratissima</i> Benth.	Leguminosae	Stem bark
17	Kharpat	<i>Garuga pinnata</i> Roxb.	Burseraceae	Leaves
18	Indian madder	<i>Rubia cordifolia</i> Linn.	Rubiaceae	Bark
19	Onion	<i>Allium cepa</i> Linn.	Liliaceae	Dry skin
20	Palash lata	<i>Butea superba</i> Lam.	Leguminosae	Wood
21	Pitti	<i>Ventilago madraspatina</i> Gautn.	Rhamnaceae	Root bark
22	Poppy	<i>Papaver rhoeas</i> Linn.	Papaveroideae	Flower Petal
23	Raddish	<i>Raphanus sativus</i> Linn.	Cruciferae	Root
24	Ramphal	<i>Anona reticulata</i> Linn.	Anonaceae	Fruit
25	Rangaphalia Gach	<i>Poinsettia pulcherrima</i> Graham	Euphorbiaceae	Leaves
26	Ratanjot (Golden drops)	<i>Onsoma echioides</i> C.B	Boraginaceae	Root
27	Red chilli	<i>Capsicum annum</i> Linn.	Solanaceae	Fruit
28	Red Sandal	<i>Petrocarpus antalinus</i> Linn.	Leguminosae	Wood
29	Ranga palash	<i>Butea frondosa</i> Roxb.	Leguminosae	Wood
30	Red ceder (Urium )	<i>Bischofia javanica</i> Blume.	Euphorbiaceae	Bark/root
31	Sal tree	<i>Shorea robusta</i> Gaertn.	Dipterocarpaceae	Bark/Fruit
32	Safflower	<i>Carthamus tinctorius</i> Linn.	Compositae	Flower
33	Sappon wood	<i>Caesalpinia sappou</i> Linn.	Leguminosae	Heart wood
34	Senduripoma	<i>Cedrela toona</i> Roxb.	Meliaceae	Flower
35	Paradise flower (Swarnakanti)	<i>Caesalpinia pulcherrium</i> Swartz.	Leguminosae	Flower



Sl. No.	Common Name	Botanical Name	Family	Parts used
<b>Blue</b>				
36	Assam Indigo	<i>Indigofera tinctoria</i> Linn.	Strobilanthesusia	Twings
37	Butter fly pea	<i>Clitoria ternatea</i> Linn	Fabaceae	Flower
38	Blue Berry	<i>Vaccinium</i> spp.	Ericaceae	Berries
39	Indigo	<i>Indigofera tinctoria</i> Linn.	Leguminosae	Leaves
40	Larkspur	<i>Delphinium exaltatum</i> Linn.	Buttercup	Flower head
41	Mitha Indrajau	<i>Wrightia tinctora</i> R.Br.	Aocynaceae	Leaves
42	Mitha neem	<i>Murraya koenigii</i>	Rutaceae	Bark
43	Privet	<i>Ligustrum vulgare</i> Linn.	Oleaceae	Fruit
44	Maple	<i>Acer</i> species	Sapindaceae/ Aceraceae	Bark
45	Sorrel (pine tree)	<i>Pinus khasya</i> Royle.	Pinaceseericaceae	Root
46	Water Lily	<i>Nymphaea alba</i> .Linn.	Nymphaea	Rhizomes
47	Woad	<i>Isatis tinctoria</i> Linn.	Cruciferae	Leaves
<b>Yellow</b>				
48	Achu	<i>Morinda angustifolia</i> Linn.	Rubiaceae	Root
49	Alkalbir	<i>Datisca cannabina</i> Linn.	Daticaceae	Root
50	Asbarg	<i>Delphinium zalil</i> Aitch & Hemsl.	Ranunculaceae	Flower
51	Akhrot	<i>Jaglans regia</i> Linn.	Jugandaceae	Bark
52	Monkey jack	<i>Artocarpus lakoocha</i> Roxb.	Arocarpaceae	Fruit
53	Bay berry	<i>Myrica negi</i> Thunmb.	Myricaceae	Fruit
54	Basaka	<i>Adhatoda vasica</i> Ness.	Acanthaceae	Leaves
55	Bel tree	<i>Aegele marmelos</i> Linn.	Rutaceae	Fruit
56	Beleric myrobalan	<i>Termilainia bellerica</i> Roxb.	Combretacea	Fruit
57	Bhumlati	<i>Symplocos spicata</i> Roxb.	Symplocaceae	Bark
58	Bhirra	<i>Chlorooxylon swietenia</i> D.C	Rutaceae	Bark
59	Blue pine	<i>Pinus wallischina</i> A.B.Jack	Pceaeina	Bark
60	Bronze fennel	<i>Foeniculum vulgar</i> Mill.	Rubiaceae	Flower
61	Canon ball	<i>Couroupitaguianensis</i>	Myrtaceae	Flower
62	Champaka	<i>Mecheplika champaca</i> Linn.	Magnoliaceae	Flower
63	Chir pine	<i>Pinus roxburghii</i> sargent Roxb.	Pinaceae	Wood

Sl. No.	Common Name	Botanical Name	Family	Parts used
64	Chatri	<i>Mahonia napaulenis</i> D.C	Berberidaceae	Roots
65	Chuci poma	<i>Maesa chisia</i> Wall.	Myrsinaceae	Bark
66	Chobai atha	<i>Mussaenda frondosa</i> Linn.	Rubiaceae	Stem and roots
67	Cluster pine	<i>Pinus brutia</i> Ten.	Pceaeina	Bark
68	Common holly	<i>Ilex aqifolium</i> Linn.	Aquifoliaceae	Leaves
69	Coral Jasmine	<i>Nyctanthesis arboritis</i> Linn.	Oleaceae	Flower
70	Cotton	<i>Gossypium herbaceum</i> Linn.	Malvaceae	Fresh flower paste
71	Crape Jasmine	<i>Ervatamia coronaria</i> Stapf.	Umbrelliferae	Seed pulp
72	Dhuri	<i>Woodfordia fruticosa</i> (Kurz.) Linn.	Lythraceae	Flower
73	Drumstick	<i>Moringa pterygosperma</i>	Moringaceae	Leaves
74	Dyer's weld	<i>Resida luteola</i> Linn.	Resedaceae	Whole plant
75	Eucalyptus	<i>Eucalyptus globules</i> Labill.	Myrtaceae	Bark
76	Dyer's chamomile	<i>Anthemis tinctoria</i> Linn.	Asteraceae	Flower
77	Flame of forest	<i>Butea monosperma</i> Linn.	Leguminosae	Flower
78	Forking larkspur	<i>Delphinium consolida</i> Linn.	Ranunculaceae	Flower
79	Forest piper	<i>Toddalia asiatica</i> Linn.	Rutaceae	Roots and bark.
80	Guldaudi	<i>Chrysanthemum indicum</i> Linn.	Asteraceae	Flower(s)
81	Ghuguli	<i>Commiphora mukul</i> Engl.	Burseraceae	Stem
82	Haital	<i>Phoenix paludosa</i> (L.) Roxb.	Palmaceae	Resinous gum
83	Himalayan Rhub.	<i>Rheum emodi</i> Wall.	Polygonaceae	Bark
84	Iron wood	<i>Memecylon umbellatum</i> Burm. F.	Stomataceae	Fruit
85	Jackfruit	<i>Artocarpus integrifolia</i> Linn.	Moraceae	Wood and root
86	Kaiphal	<i>Myrica citrifolia</i> Roxb.	Myriaceae	Bark
87	Nagatenga	<i>Mirica negi</i> Thunb.	Myriaceae	Bark
88	Kala inderjau	<i>Wrightia tomentosa</i> Roem and Schult.	Apocynaceae	Bark
89	Kamala	<i>Mollotus phillippensis</i> Muell. Arg.	Euphorbiaceae	Fruit
90	Kath haladhi	<i>Berberis aristata</i> DC.	Berberidaceae	Root
91	Kilmora	<i>Berberine</i> sp.	Berberidaceae	Roots
92	Kuji thekerra	<i>Garcinia marella</i> Derr.	Clusiaceae	Gum of ripe fruit



Sl. No.	Common Name	Botanical Name	Family	Parts used
93	Lodh	<i>Symplocos racemosa</i> Roxb.	Symplocaceae	Leaves
94	Mango	<i>Mangifera indica</i> Linn.	Anacardiaceae	Bark
95	Marathi haldi	<i>Garcinia spicata</i> Hock.f.	Guttifera	Bark
96	Mitha mahua	<i>Madhuca indica</i> J.F. Gmel	Sapotaceae	Bark
97	Nagkeswar	<i>Mesuafera</i> Linn.	Guttiferae	Flower
98	Naga bhumlati	<i>Symplocos ferruginea</i> Roxb.	Symplocaceae	Bark
99	Kum dye	<i>Pasania pachyphyla</i> (Kurz) Schottky	Fagaceae	Bark
100	Pomgranate	<i>Punica granatum</i> Linn.	Lythraceae	Fruit
101	Pink bauhinia	<i>Bauhinia purpurea</i> Linn.	Leguminosae	Bark
102	Radhachura	<i>Delonix regia</i> Ref.	Acsalpinaceae	Flower
103	Rangal or Ixora	<i>Trifolium pratense</i> Linn.	Rubiaceae	Flower
104	Rubber plant	<i>Ficus elastic</i> Roxb.	Moraceae	Leaves
105	Saffron Crocus	<i>Carocus longa</i> Linn.	Iridaceae	Flower
106	Sickle Senna	<i>Cassia tora</i> Linn.	Leguminosae	Seed
107	Sun flower	<i>Helianthus tinctorius</i> Linn.	Asteraceae	Flower
108	Tamarind	<i>Tamarindus indica</i>	Leguminosae	Leaves
109	Turmeric	<i>Curcuma longa</i> Linn	Zingiberaceae	Roots
110	Yellow teak	<i>Adina cordifolia</i> Roxb.	Rubiaceae	Heart wood
111	Yellow jasmine	<i>Jasmin umhumile</i> Linn.	Oleaceae	Root
112	Zinnia	<i>Zinnia elegans</i>	Daisy	Flower
<b>Orange</b>				
113	Dahlia	<i>Dahlia species</i>	Compositae	Flower
114	Marigold	<i>Tagetes erecta</i> Linn.	Compositae	Flower
115	Pumpkin	<i>Cucurbita maxima</i> Duch.	Cucuritaceae	Fruit
116	Rangalong	<i>Trifolium pretense</i> Linn.	Papiloinaceae	Flower
117	Teak (sagoon)	<i>Tectona grandis</i> Linn.	Verbenaceae	Bark
118	Togar	<i>Ervatamia divaricata</i> Linn.	Apocyaceae	Seeds
119	Tam tingali	<i>Symplocos oxyphylla</i> Wall.	Symplocaceae	Leaves and stem
<b>Brown</b>				
120	Acalypha	<i>Acalypha wilkaseana</i> Linn.	Euphorbiaceae	Leaves



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121	Amla	<i>Emblica officinalis</i> Geartn.	Euphorbiaceae	Fruits
122	Arjun	<i>Terminalia arjuna</i> Roxb.	Combretaceae	Bark
123	Indian madlar	<i>Mimusops elengi</i> Linn.	Leguminosae	Bark
124	Babool	<i>Acacia arabica</i> Willd.	Leguminosae	Bark
125	Plantain (Banana)	<i>Musa paradisiac</i> Linn.	Musaceae	Stem
126	Black sisir	<i>Albizia dorantissima</i> Benth.	Leguminosae	Bark
127	Beef wood tree	<i>Casuarina equistifolia</i> Linn.	Casuarinaceae	Bark
128	Banyan tree	<i>Ficus bengalensis</i> Linn.	Moraceae	Leaves
129	Ber	<i>Ziziphus jujube</i> Mill.	Rhamnaceae	Bark
130	Ban bogori	<i>Pterospermum lanceaefolium</i> Roxb.	Rhamnaceae	Leaves & bark
131	Black plum	<i>Syzygium cumini</i> Linn. Skeels.	Myrtaceae	Bark.
132	Carambola	<i>Averrhoa carambola</i> Linn.	Oxalidaceae	Bark
133	Carrot	<i>Daucus carota</i> Linn	Apiaceae	Roots
134	Custard Apple	<i>Anona squamosal</i> Linn.	Anonaaceae	Fruit
135	Cochin goroka	<i>Garchinia xanthochymus</i> H.K.f	Guttiferae	Bark
136	Coffee	<i>Coffea arabica</i> Linn.	Rubiaceae	Beans
137	Copper pod tree	<i>Peltophorum pterocarpum</i> (DC.) K. Heyne	Fabaceae	Stem bark
138	Chebolic Myrobalan	<i>Terminalia chebula</i> Retz.	Combretaceae	Fruit
139	Duggal fiber plant (mesiki)	<i>Sarcoco stemmaacidum</i> Gaud.	Asclepiadaceae	Bark
140	Elephant apple	<i>Dilhenia indica</i> Linn.	Dilheaceae	Bark
141	Gab	<i>Diospyra sembryopteris</i>	Ebenaceae	Bark
142	Ginger	<i>Zingiber officinale</i>	Zingiberaceae	Rhizome
143	Gallnut (oak tree)	<i>Quarcusin fectiria</i>	Fagaceae	Bark
144	Garden balsam	<i>Impatiens balsamina</i> Linn.	Balsaminaceae	Flower
145	Golden dock	<i>Rumex maritmus</i>	Rubiaceae	Seed
146	Hamelia	<i>Hamelia patens</i>	Betulaceae	Leaves
147	Hog plum	<i>Sapondias mangifera</i> Willd.	Anacardiaceae	Fruit
148	Indian persimmon	<i>Diospyros peregrine</i> Gurk.	Ebenaceae	Fruits

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149	Jangli Akhrot	<i>Althaea rosea</i> Linn.	Euphorbiaceae	Roots
150	Jingan	<i>Lannea coromandelica</i> (Houtt) Merrill.	Anacardiaceae	Bark
151	Jeera	<i>Cuminum cyminum</i> Linn.	Apiaceae	Fruits
152	Jamaican sorrel	<i>Hibiscus sabdariffa</i>	Malvaceae	Flower
153	Kanchan	<i>Bauhinia variegata</i> Linn.	Leguminaceae	Bark
154	Kikar	<i>Acacia nilotica</i> Linn.	Leguminaceae	Leaves
155	Khariyal	<i>Parkia roxburghii</i> G. Don	Leguminaceae	Wood
156	Kohir	<i>Bridelia retusa</i>	Euphorbiaceae,	Stem bark
157	Litchi	<i>Litchi chinensis</i> Sonn.	Sapindaceae	Leaves
158	Machmai	<i>Trema orientalis</i> Blume.	Ulmaceae	Stem bark
159	Neem	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Leaves
160	Peach	<i>Prunus persica</i> Linn.	Rosaceae	Bark
161	Pipal	<i>Ficus religiosa</i> Linn.	Moraceae	Leaves
162	Purple lady	<i>Telanthera ficoidea</i> Linn.	Amaraenthacea	Roots
163	Red silk cotton	<i>Bombax malabaricum</i> DC. Mod.	Bombacaceae	Flower
164	Rein wardita	<i>Rein warditatrigania</i> Dumort.	Linaceae	Gummy sap
165	Ranga chandan	<i>Pterocarpus santalinus</i>	Leguminaceae	Bark
166	Singa Puspi	<i>Phiogacanthus thyrsoiflorus</i> Nees.	Acanthecanthus	Leaves
167	Tea	<i>Camelia sinensis</i> Linn.	Theaceae	Flower
168	Titasopa	<i>Michelia champaca</i> Linn.	Magnoliaceae	Fruits
169	Tobacco	<i>Nicoliana</i> spp.	Solanaceae	Bark
170	Weeping willow	<i>Salix babylonica</i>	Salicaceae	Wood & bark
<b>Orange</b>				
171	Annatto	<i>Bixa orellana</i> Linn.	Bixaceae	Bark
172	Alder	<i>Alnus glutinosa</i> Mill.	Betulaceae	Flower
173	Agnijalwa	<i>Woodfordia fruticosa</i> Kurtz. Linn.	Lythraceae	Flower
174	Dhaiphool Gangai	<i>Mullosus phillippensis</i>	Euphorbiaceae	Ripe fruit
175	Lily	<i>Convallaria majalia</i> Linn.	Liliaceae	Leaf
176	Muskund	<i>Pterospermum lanceafolium</i> Roxb.	Stercyliaceae	Leaves and bark

Sl. No.	Common Name	Botanical Name	Family	Parts used
177	Ushahul	<i>Impatiens balsamina</i> Linn.	Balsaminaceae	Stem and leaves
178	Orange Cosmos	<i>Cosmos sulphureus</i>	Compositae	Flower
179	Henna	<i>Lawsonia inermis</i> Linn.	Lythaceae	Leaves
180	Saffron	<i>Crocus sativus</i> Linn.	Ieridacea	Flower
181	Indian spinach	<i>Basella alba</i>	Chenopodiaceae	Roots
182	Lichen	<i>Lasallia postulate</i>	Ascomycetes	Whole fungus
183	Mushroom	<i>Boletopsis grisea</i>	Amantiaceae	Whole plant
184	Sweet Woodruff	<i>Galium odoratum</i> , Linn.	Rubiaceae	Roots
185	Senduri poma	<i>Cedrela toona</i> Roxb.	Meliaceae	Flower
186	Purple basil	<i>Ocimum tomentosum</i> Lam.	Lamiaceae	Flower
187	Rose	<i>Rosa</i> species	Rosaceae	Flower
188	Spiny amaranth	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Root
<b>Choclote</b>				
189	Mangrove	<i>Rhizophorea mucronata</i> Lam.	Rhizophoraceae	Bark
<b>Green</b>				
190	Apricot	<i>Prunus armenica</i> Linn.	Rosaceae	Leaves
191	Algae (green)	<i>Pediastrum boryanum</i>	Chlophyta	Whole body
192	Bottle brush	<i>Callistemen citrinus</i>	Myrtaceae	Flower
193	Broccoli	<i>Brassica oleracea</i> Linn.	Cruciferae	Flower
194	Canna	<i>Canna indica</i>	Myrtaceae	Flower
195	Dodder	<i>Cuscuta pentagona</i> Linn.	Convolvulaceae	Stem
196	Datura	<i>Datura (fastusa) stramonium</i> Linn.	Solanaceae	Leaves
197	Drumstick	<i>Moringa oleifera</i> Lam.	Moringaceae	Leaves
198	Gaint cane	<i>Arundina rigigan</i>	Poaceae	Leaves
199	Keharaj	<i>Eclipta alba</i> Hassak.Linn.	Compositeae	Whole plants
200	Kiwi	<i>Actinida arguta</i>	Actinidiaceae	Fruit
201	Lemon grass	<i>Citrus limon</i> Linn.	Rutaceae	Leaves
202	Lettuce	<i>Lactuca sativa</i> Linn	Asteraceae	Leaves
203	Water Lily	<i>Nymphaea pubescens</i> Willd	Nynphaeaceae	Flower
204	Nara singha	<i>Murraya koenigii</i> Linn.	Rutaceae	Leave
205	Nettle plant	<i>Urtica dioica</i> Linn.	Urticaceae	Stem

Sl. No.	Common Name	Botanical Name	Family	Parts used
206	Pea	<i>Clitoria ternatea</i> Linn	Leguminaceae	Stem
207	Papaya	<i>Papaya carica</i> Linn.	Caricaceae	Leaves
208	Golden dock	<i>Rumex matimus</i>	Polygonaceae	Whole plant
209	Spinach	<i>Spinacia</i> spp.	Chenopodiaceae	Leave
209	St. John's Wort	<i>Hypericum punctatum</i>	Hypericace	Whole plant
210	Tulsi	<i>Ocimum tenuiflorum</i> Linn.	Labiatae	Leaves
211	Scented creeper	<i>Paederia faetida</i> Linn.	Rubiacea	Leaves
<b>Purple colour</b>				
212	Black cherry	<i>Prunus erotins</i>	Rosaceae	Roots
213	Chinna Rose	<i>Hibiscus rosasinensis</i> Linn.	Malvaceae	Flower
214	Cocklebur	<i>Xanthium pensylvanium</i>	Asteraceae	Leaves/ Branches
215	Cactus	<i>Cereus peruvianus</i> Juss.	Cactaceae	Pad with bugs
216	Dandelion	<i>Taraxacum officinale</i> F.H. Wigg	Asteraceae	Flower
217	East Himalayan silver fir	<i>Abiesspectabilis</i> (D.Don) Spach	Pinaceae	Cone
218	Goose berry	<i>Ribes</i> spp.	Grossulariaceae	Berry
219	Goose grass	<i>Gialium aparine</i> Linn.	Rubiaceae	Roots
220	Prinkly sharb	<i>Acyranthes aspera</i> Linn.	Amaranthbse	Bark
221	Flower Puroi	<i>Basella alba</i> Linn.	Basellaceae	Seed
222	Red Cedar	<i>Juniperrus virginiana</i> Roxb.	Euphorbiaceous	Root
223	Bush tomato	<i>Solanum indicum</i> Linn.	Solanaceae	Fruit
<b>Black Dye</b>				
224	Tree bean	<i>Javanika parika</i> Lam.	Fabaceae	Fruit skin
225	Black oak	<i>Quercus velutina</i> Linn.	Fagaceae	Bark
226	Bullock s heart	<i>Annona reticulata</i> Linn.	Annonaceae	Fruit, Shoots
227	Borhomthuri	<i>Talauma hodgsoni</i>	Magnoliaceae	Stem
228	Bottle gourd	<i>Lagenaria siceraria</i>	Cucurbitaceae	Fruit
228	Cassic flower	<i>Acacia farnesiana</i> Willd.	Leguminosace	Bark

Sl. No.	Common Name	Botanical Name	Family	Parts used
230	Cachew nut tree	<i>Semecarpusana cardium</i>	Anacardiaceae Linn.	Fruit
231	Citron lime	<i>Citrus medica</i> Linn.	Rutaceae	Bark
232	Indian hemp	<i>Apocynum cannabinum</i>	Apocynum	Whole plant
233	Jungle amlı	<i>Aleurite moluccana</i> Willd.	Euphorbiaceae	Roots
234	Kumboo millet	<i>Perillao cimoidea</i>	Labiatae	Fruit
235	Logwood	<i>Haematoxilon campechianum</i> Linn.	Leguminosace	Bark
236	Persian shield	<i>Strobilanthes</i>	Acanthaceae	Leaves
237	Phutuka	<i>Melestoma malabathrium</i> Linn.	Melestomataceae	Fruit
238	Sumach	<i>Caesalpinia coriaria</i> Willd.	Leguminosace	Whole plant
239	Sour wood	<i>Nyssa sylvatica</i> Hook.	Nyssaceae	Leaves/bark
240	Lata Mahudi	<i>Croton caudatus</i> Geiseler	Euphorbiaceae	Sap

The screening of dye yielding plants available in North East India, it was observed that two hundred and forty (240) numbers of dye giving plants are available in this region. From the above listed plants, while collecting the plants, emphasis was given on ethical harvesting methods and non-wasteful dye formula (Casselemen, 2001). It was considered necessary to planned ahead. The plants for pretesting of color yielding properties were collected in summer season such a way that does not disturb the plants growth particularly leaves, flower, bark, seed, roots etc. While plant parts were collected for experimental purpose very small amount of dye yielding plant parts was picked and all plants had chance to reproduce naturally (Sumant, 2001). Because over exploitation of natural resources to obtain dyes may result in deforestation and threaten endangered species. Agricultural land is primarily required to feed an ever-increasing world population and support livestock and biodiversity should not be compromised for the extraction of dyes. Instead of that we can plant some dye yielding plants in our own garden and some waste part of plants such as bark, damaged seed, waste flowers etc can be use for productive purpose or coloring of different products.

#### IV. CONCLUSION

To move with the ecological movement in the earth with sustainable products, the study of various natural dyes are highly acknowledged in coloration of yarn and fabrics. In the field of Textiles, characterization of chemical nature of colored components are useful to know the solubility and mordanting power of natural dye as well as its hypo-chromic and batho-chromic shift of main hue. It is also helpful in structural modification of some groups present in dye molecules to obtain quality dyeing for commercialization of different values added textiles products which can fetch a high economic growth to the country.

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