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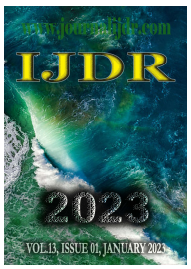

RESEARCH ARTICLE OPEN ACCESS

DYE YIELDING PLANT SPECIES OF VIJAYAPUR DISTRICT OF KARNATAKA, INDIA

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ABSTRACT

Dye yielding plant species survey of Vijayapur district of Karnataka comprising 13 tehsil was conducted during March 2018 to November 2022. The purpose of this survey was to document the dye yielding plant species. The present study was initiated with an aim to identify dye yielding plant species resources from elder people, shepherds, and formers of Vijayapur district. There are about 35 species of angiosperms belonging to 35 genera and 26 families of dye yielding plant species were found.

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INTRODUCTION

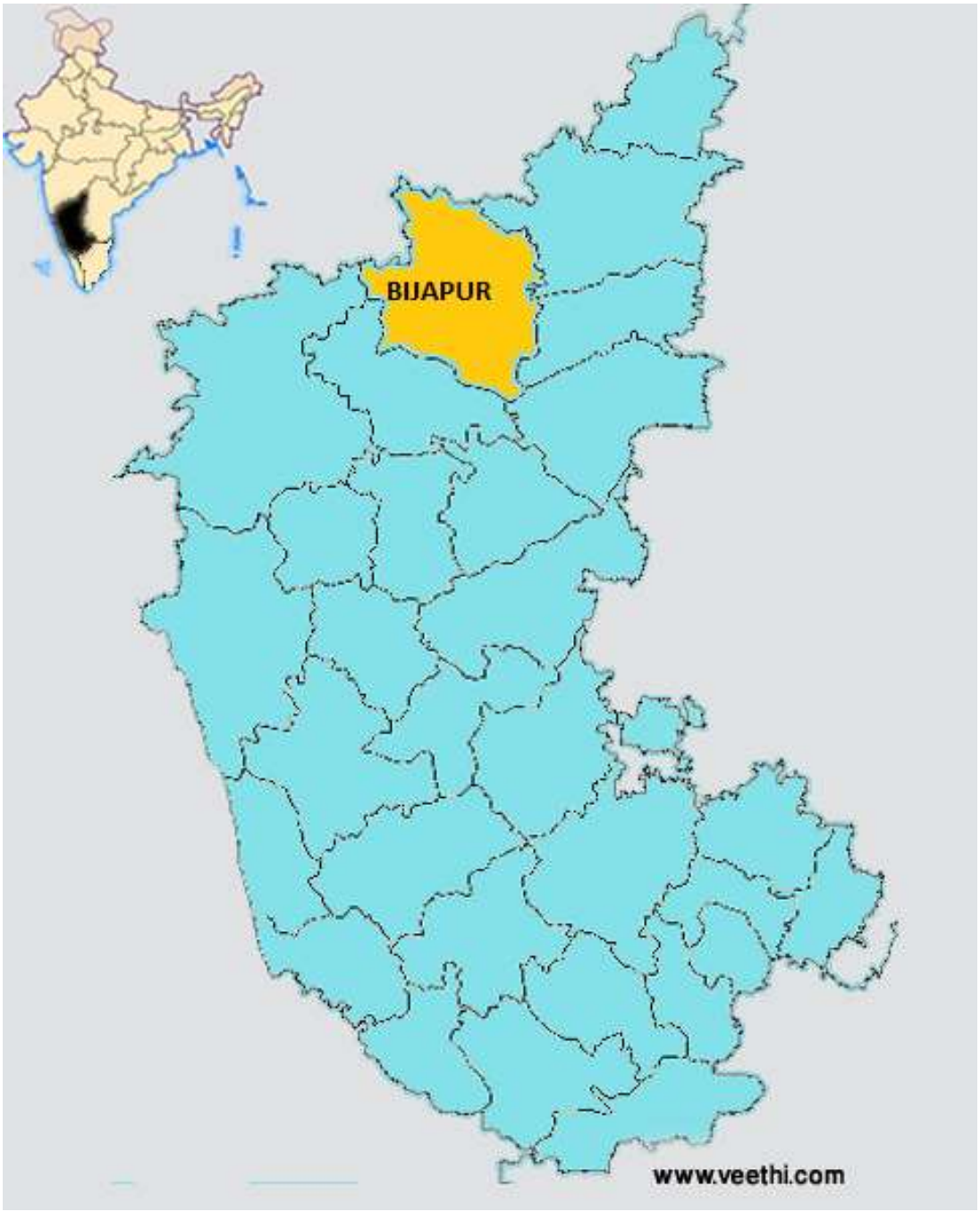
Food dyes and fabric colour are chemical substances that were developed to enhance the appearance of food by giving it artificial colour. People have added colouring to food for centuries, but the first artificial food colouring was created in 1856 from coal tar. Now days, food dyes are made from petroleum. Over the years, hundreds of artificial food dyes have been developed, but a majority of them have since been found to be toxic. There are only a handful of artificial dyes that that are still used in food. Flowers, bark, leaves, roots are the sources of colour. Natural dyes are lightfast; they maintain their colour even after prolonged expose to sunlight. Natural dye can be sourced from our home, some found in a field. Natural dyeing is the art of taking organic materials, and extracting colour from those materials, and applying the colour to fibre, yarn, cloth and food. The present study was initiated with an aim to identify dye yielding plant species in Vijayapur district of Karnataka.

MATERIAL AND METHODS

Ethnobotanical Data collection: Dye yielding plant species survey conducted on March 2018 to November 2022 in Vijayapur district. For this, frequent field trips were conducted. Data and information recorded in the standard questionnaire. Prior Informed Consent (PIC).

Vocher specimen collection and identification: Collected data and information include, scientific name, family, vernacular name, habit, colour, plant part used and mode of consumption. Dye yielding plant species were photographed in the field. Plant specimens were identified consulting with experts, by referring Flora of Gulbarga District [(11)], three volumes of the Flora of Presidency of Madras[(4)]. The voucher specimens were stored at the herbarium centre, Department of post graduate studies and Research in Botany, Karnataka State Akkamahadevi womens university, Vijayapur.

Study Area: The Vijayapur district consists of dry and arid tract of the Deccan plateau. The temperature varies between 42° c during summer and 15°c winter season respectively. In May mean maximum temperature is 40°c. Vijyapur district is plain Deccan plateau, which is from 365-610 met height above sea level. This region is slope towards west to east. The river Doni, Krishna, Bheema, and their tributaries are flows according to the slope. The total area of Vijayapur district is 10,541 sq kms. There are thirteen talukas of Vijayapur district i.e., Vijayapur, Muddebihaal, Sindagi, Basavanbagevaadi, Indi, Talikote, Devara Hipparagi, Chadachan, Tikota, Babaleshwar, Kolhar, Nidagundi, . Almel. Bordered by the Bheema River in the north and River Krishna in the south. The district consists of the dry and arid tract of the Deccan Plateau. The climate of this region is arid, tropical and steppe type. The soil of Vijayapur district area is rich in content of basalt rock, magnetite, magnesium, aluminium and iron oxide. The Vijayapur district receives normal rainfall 578.0 mm and the vegetation of this region is mainly dry and deciduous and may broadly as vegetation on plains.



The natural vegetation near Alamatti Dam area is like dry and hot having rich flora. Many local elders, shepherds collect the dye yielding plant species from this area.

RESULT AND DISCUSSION

In the present account, there are about about 35 species of angiosperms belonging to 35 genera and 26 families plant species were reported. The predominant family is amaranthaceae with 3species; remaining families have the one species. Data obtained from the survey is compiled in Table 1. All plant species scientific name, family, vernacular name, time of availability, part used and mode of consumption are provided. Most dominant plant species of this area is Amaranthus. Different plant parts were used for dye. Among these inflorescence (5.71 %), fruits (28.57%), flowers (37.14%), roots (5.7%), leaves (8.57%), and seeds (1.1%). Habit wise climbers are (11.4%), herbs (34.4%), trees (37.14%), shrub (17.14%). 30 dye yielding plant are reported from Manipur (6), 15 plant species reported in Paschim Medinipur district (7), west Bengal, 39 plant species reported in Tripura (3), 195 dye yielding plant species found in Maharastra (9), 15 plant species reported in Rajgarh (MP), in Uganda plant species are evaluated for colour absorption and fastness on cotton fabrics (10), 106 plant secies identified in Uttarakhanda, but no research found in Vijayapur district, Karnataka (2). per review *Canna indica* red flower produce light green colour, this plant is new reported in this research as per review.

Fig. 1. Natural Dyes

Table 1. Dye yielding plant species of Vijayapur dist.Karnataka, India

S.No	Scientific name	Family	Local/ Vern name	Habit	Dye	Part used
1.	*Abrus pecatorius*	Fabaceae	Gulaganji	Climber	Black	Seeds
2.	*Amaranthus caudatus*	Amaranthaceae	Kempu huvina rajageeri	Herb	Red	Inflorescence
3.	*Argemone Mexicana*	Solanaceae	Golagolaki	Herb	Yellow	Flower
4.	*Basella rubra*	Chenopodiaceae	Kari basale	Climber	Violet	Fruit
5.	*Bauhinia racemosa*	CAesalpinaceae	Aakalu paad	Tree	Pink	Flower
6.	*Beeta vulgaris*	Amaranthaceae	Beet root	Herb	Red	Root
7.	*Butea monosperma*	Fabaceae	Kaadin kichchu	Tree	orange	Flower
8.	*Celosia argentea*	Amaranthaceae	Anne soppu	Herb	Pink	Inflorescence
9.	*Clitoria ternatia*	Fabaceae	Shanka pushpin	Climber	Blue	Flower
10.	*Cocculus hirsutus*	Menispermaceae	DAgadi balli	Climber	Red	Fruit
11.	*Coldenia procumbence*	Boraginaceae	Gaayamaari thappala	Herb	Red	Leaves
12.	*Curcuma longa*	Zingiberaceae	Arishina	Herb	Yellow	Root
13.	*Delonix regia*	Caesalinaceae	Gulmohar	Tree	Brown	Flower
14.	*Eucalyptus*	Myrtaceae	Nilagiri	Tree	Brown	Bark
15.	*Gomhrena*	Amaranthaceae	Adaki hu	Herb	Pink	Flower
16.	*Hibiscus rosa sinensis Linn.*	Malvaceae	Daasaval	Shrub	Red	Flower
17.	*Lantana camera*	Verbenaceae	Chaduranga	Shrub	Dark pink	Fruit
18.	*Lawsonia innermis*	*Lytheraceae*	Madarangi	Tree	Red	Leaves
19.	*Mangifera indica*	Anacardiaceae	Maavu	Tree	Brown	Stem bark
20.	*Mirabilus jalapa*	Nyctginaceae	Sanje mallige	Herb	Pink	Flower
21.	*Morus alba*	Moraceae	Hippu nerale	Tree	Violet	Fruit
22.	*Musa paradiscica*	Musaceae	Baale gida	Tree	Black	Stem
23.	*Myrabilus jalapa*	Nyctaginaceae	Sanje hu	Herb	Pink	Flower
24.	*Opuntia dillenii*	Cactaceae	Rotagolli	Shrub	Red	Fruit
25.	*Peristrope tictoria*	Acanthaceae	-	Herb	Pink	Flower
26.	*Phyllanthus Reticulates*	Euphorbiaceae	Huli gida	Shrub	Red	Fruit
27.	*Punica granatum*	Punicaceae	Dalambari	Shrub	Red and yellow	Seed juice and pericarp
28.	*Salvodora persica*	Salvodoraceae	Devvinagida	Tree	Red	Fruit
29.	*Solanum indicum*	Solanaceae	Tomato	Herb	Pink	Fruit
30.	*Syzizium cumini*	Myrtaceae	Nerale	Tree	Violet	Fruit
31.	*Tagetes erecta*					
32.	*Tectona grandis*	Lamiaceae	Saagawani	Tree	Red	Leaves
33.	*Terminalia crenulata*	Combretaceae	Badaami gida	Tree	Red	Fruit
34.	*Thunbergia erecta*	Acanthaceae	Neeli hu	Climber	Green	Flower
35.	*Canna indica*	Cannaceae	Kaabale	Shrub	Light green	Flower

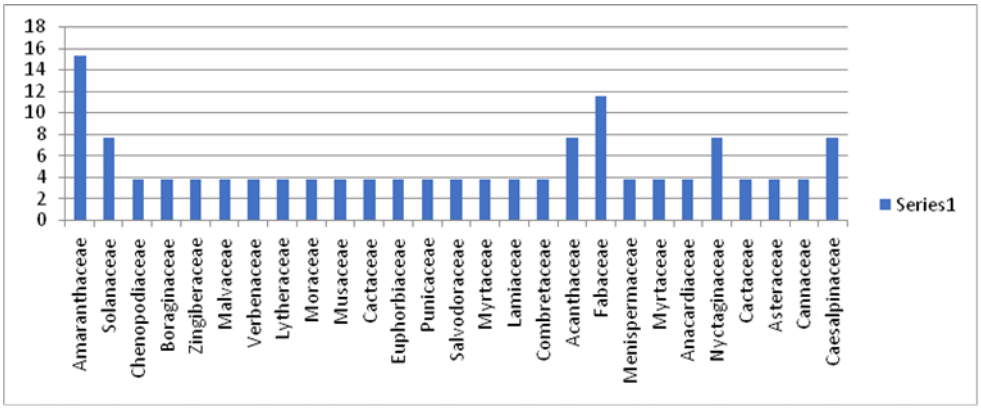


Fig. 2. Dye yielding plants Familywise

Dye yielding plants

Amaranthus caudatus

Basella rubra

Beeta vulgaris

Curcuma longa

Lantana camera

Lawsonia innermis

Morus alba

Opuntia dillenii

Punica granatum

Syzizium cumini

Phyllanthus reticulatus

Thunbergia erecta

CONCLUSIONS

Dye yielding plant species survey conducted on March 2018 to november 2022 in Vijayapur district. The main purpose of this survey was to document the dye yielding plant species. There are about about 35 species of angiosperms belonging to 35 genera and 26 families were found to be used. Scientific name, family, vernacular name, time of availability, Dye colour, habit and mode of use are provided. The study suggests that the present information on dye yielding plant species of Vijayapur district may be used for phytochemical and pharmacological research in future for the development of new sources.

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