

Indigenous knowledge on natural dyeing of *Korai* grass mat in Pattamadai, Tirunelveli district, Tamil Nadu

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Abstract

Mat weaving is an important traditional handicraft of Tamil Nadu which is famous for its *korai* dry-grass mats. Mat weavers from here not only create intricate patterns and designs, but mats are multicoloured and often represent the ornate pallav of traditional silk sari from Tamil Nadu. Mats made with *korai* /sedge grass are extremely delicate and highly valued. *Korai* grass (*Cyperus corymbosus* Rottb.) is found in abundance along the banks of the rivers and in marshy areas in Tamil Nadu. Pattamadai village in Tirunelveli district of Tamil Nadu is famous for its fine quality mats. Here the local reed is split into nearly hundred pieces and are woven on a loom with a cotton warp. The mats are so fine that they can be rolled and placed into a small box. The weaving also takes enormous time and patience on the part of the weaver. Men and women of the *Lebbai* Muslim community weave these famous mats only in this village. The mat weaving industry of Pattamadai, which hitherto used synthetic dyes for colouring its internationally acclaimed rugs, is all set to use an eco-friendly colorant, extracted from a plant. The study involved field works and interviews. The present work was undertaken to collect the information about the mat weaving art, and also study the natural dye yielding plants and their extraction methodology as well as dyeing properties in mat weaving.

Keywords: *Cyperus corymbosus*, *Korai* grass, Mat weaving, Natural dye, *Pattamadai pai*, *Pattu pai*, Silk mat, Pattamadai village, Tirunelveli, Tamil Nadu.

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140-count mat is super fine enough to be folded and kept in a coat pocket. The mats are produced in various sizes and shapes to serve different purposes such as hanging on walls, worshipping, covering the floor, sleeping, etc. Excellent fancy items like bags, purses, baskets and hand-fans are also made from *korai* grass. The natural dye yielding plants used for *korai* mat dyeing of, Tirunelveli district have been collected and documented.

Study area

The study area is Pattamadai, Tirunelveli district, Tamil Nadu, South India and lies between 77°10' - 77°40' E and 8°25' - 8°53' N. This village is situated at 15km South of Tirunelveli, 20km North of Kalakad and 25km East of Ambai. The total area of this village region extends over 15km². The village is mostly surrounded by paddy fields and people are totally relied on agriculture. They also worked as labourers in construction work, *Beedi* rolling, *Korai* mat weaving, etc. More than 5000 people are living in this village and about 43% of them are educated.

Methodology

During the course of present study, field trips were carried out to the

Introduction

Pattamadi village in Tirunelveli district, Tamil Nadu is famous for two things. One is the *Janmabhoomi* (birth place) of H.H. Sri Swami Srivananda Saraswathi Maharaj, the revered spiritual guru and founder of the international divine life Society. Secondly what comes in one's mind at the mention of the name of the village is its exquisite silky mat known as *Pattamadai pai*. Mat weaving has been the traditional occupation of our family in Pattamadai for generations.

The making of the mat runs into

several stages. The wild *korai* grass of the Thamaraparni River is soaked in water and then split into fine strands. The weaving of these strands into a fine mat is the result of centuries of experience and expertise. So supple and lustrous is the mat that it seems to be made of silk threads. No wonder it is called a *pattu pai* or silk mat. It takes weaver nearly a month to make a mat.

Mats are made in numerous colours and designs. Their fineness ranges from 50 to 140 counts, the higher the count, the finer is the mat. A 180 × 75 cm



Figs 1-19: 1&2-Tribal women, 3-Korai grass, 4-Korai grass bundles, 5-Korai grass bundle soaked in dye solution, 6-Dyed Korai grass bundles dried in shade, 7-Floor loom for mat weaving, 8-10 Samples of weaved Korai mats, 11-19 Plants used for extracting dyes for Korai mats.

area during August-September 2007. Standard methodology was used to elicit the knowledge of natural dye yielding plants and weaving methodology from the local people. Mostly, local weavers and other experienced people were taken to the field for identification of plants used in preparation of natural dye. All the relevant information, in particular the method of use, of each natural dye yielding plant species was recorded in an index card. To bring an element of accuracy, the information was cross checked with elderly people (Figs 1, 2). Specimens of plants collected from each locality were provided with a collection number for future reference. The plants specimens collected were processed at the laboratory of Plant Biology and Biotechnology, St. Xavier's College, Palayamkottai, and identified with the help of available literature¹⁻³.

Mat weaving is an important traditional handicraft of Tamil Nadu. The material used is the *Korai* grass. The process of converting the wild grass into fine thread involves stages of processing and dyeing. It takes several days and weeks for a skilled person to complete a mat.

Mat making process

The process of creating the mat is pains taking and time consuming. *Korai* grass (*Cyperus corymbosus* Rottb.) of family Cyperaceae grows abundantly along the banks of the river Tamirabarani in Tamil Nadu in South India. The process of creating a mat is quite complex. The green grass normally grows to a height of 90-120 cm and is cut finely while it is still green (Fig. 3). The grass is harvested in the months of

September/October and February/March. The outer part of the stem is used for weaving while the inside of the stem is removed with a sharp-edged knife. The counts of the mat depend on how many strips the grass is cut into. The strips of grass are then dried in the hot sun and core is taken. The grass is not exposed to humidity as they tend to turn black with the exposure. As the dried grass strips turn a yellowish green colour they are boiled in a pot of water and then dried again. The dried grass is made up into bundles and then soaked in running water, so that the grass remains just below the surface of the water for three to six days (Fig. 4). This causes the grass to swell up to three times its original size. Afterwards, it was dried again in the sun and then the outer layer was separated and differentiated by different grades.

Dyeing

For dyeing both natural and

chemical dyes are used. With chemical dyes a wide hue of colours are being incorporated in mat making. They can either be single coloured or combined in traditional red, green and black. A chemical dye does not require mordants but natural dyes are fixed with mordant. The dyes obtained from plant materials sometimes have multiple diverse uses. They can be used as colorant for cloth, paper, wool, mat, etc⁴.

Natural dyeing

Mordant — Dyes do not interact directly with the materials they are intended to colour. Natural dyes are substantive and require a mordant to fix to the mat and prevent the colour from either fading with exposure to light or washing out. These compounds bind the natural dyes to the mats. A mordant is an element which aids the chemical reaction that takes place between the dye and the fibre, so that the dye is absorbed. Common

mordant alum (25 g / 5 litre) which helps evenness and brightens slightly, is used to help for the dye to adhere to fibre. The dried and polished mats are soaked in mordant for 30 minutes. It is then dried. The use of mordant in the dyeing of *korai* grass resulted in deeper shade with good wash fastness.

Natural dyes obtained from plants — Many natural dyestuff and stains were obtained mainly from plants. Almost all parts of plants like root, bark, leaf, fruit, wood, seed, flower, etc., produce dyes. Some important dye-yielding plants used in dyeing mats are reported in Table 1 (Figs 11-19).

Isolation of dye — The shade dried plant materials are crushed, boiled in water and kept in water for 24 hours. The coloured extract was collected and filtered. The procedure was repeated till all the colour of the extract become light. The graded *korai* grass was soaked in the isolated dyes so as to take colour

Table 1: Sources of different natural dyes for dyeing mats

S. No.	Colour	Botanical name/Family	Local name	Parts used
1.	Green	<i>Lawsonia inermis</i> Linn./ Lythraceae	<i>Maruthoni</i>	Leaf
2.	Orange	<i>Bixa orellana</i> Linn./ Bixaceae	<i>Kauragu manjal</i> , <i>Kungumamaram</i> , <i>Sapra</i>	Seed
3.	Black (Yellow)	<i>Punica granatum</i> Linn./ Punicaceae	<i>Maathulai</i>	Fruit rind
4.	Black	<i>Terminalia chebula</i> Retz./ Combretaceae	<i>Kadukkai</i>	Fruit
5.	Yellow	<i>Cassia auriculata</i> Linn./ Caesalpinaceae	<i>Avaram</i>	Flower
6.	Indigo	<i>Indigofera tinctoria</i> Linn./ Fabaceae	<i>Neeli</i> , <i>Vannan avuri</i>	Leaf
7.	Red orange	<i>Caesalpinia sappan</i> Linn./ Caesalpinaceae	<i>Pathangam</i>	Wood, bark
8.	Maroon, Biscuit, Chocolate	<i>Acacia catechu</i> (Rottl.) Willd./ Mimosaceae	<i>Kasu katti</i>	Gum
9.	Golden yellow	<i>Rubia cordifolia</i> Linn./ Rubiaceae	<i>Chevvali</i> , <i>Manjitti</i>	Stem
10.	Red	<i>Arnebia nobilis</i> Reichb.f./ Boraginaceae	<i>Seemai vembalam pattai</i>	Stem, root

(Fig. 5). It is then dried in shade (Fig. 6).

Weaving

The weaving is done on a floor loom (Fig. 7), the process is slow and follows a basket weave pattern. The weft covers the warp entirely and the pattern formed has an interesting striped effect of its own. The weft of the *Pattamadai* mats of reed depends upon the quality required. Four stands of the 100 count are taken together to produce a single thread of great strength. For weaving one end of this wet grass is inserted in a hole of a long line stick, which can be compared to a huge needle. With the help of the stick, the grass is passed into the loom. Afterwards the stick and the grass is hold on both sides by both hands and is slightly twisted to give uniform roundness and strength. Then the reed is placed against it several times to keep it in position. After the weaving is complete, the mat is compressed to eliminate any unevenness (Fig. 8), a process that takes at least four hours. Once the weaving is complete, the mat is dried in the sun for a short while. It is then finished with a polishing stone.

The cost of *Korai* mats

The cost of *korai* mats depends on the quality and the number of counts. The *korai* mats in the 140 counts regarded as superior and number one quality (Figs 9-10). The cost of this quality mats is high up to Rs 5000/- while the cost of *korai* mats with 120 counts ranges from Rs 2000-3500 and the cost of

100 counts *korai* mats ranges from Rs 1000-1500.

Constraints and prospects

The present study realizes the importance of art and the need to preserve it. The major worry is the lack of women weavers now. The art acquires its sheen and fine texture in the hands of women, because of their patience. But now the younger women are increasingly taking to *beedi* rolling, which is faster and easier, fetching with higher returns. There are plenty of orders whereas the production is much less due to the man power dwindled drastically.

The mat weaving industry of *Pattamadai* which has been using synthetic dyes for colouring its internationally acclaimed rugs is all set to use an eco-friendly colorant, extracted from plants. The mat weavers used the natural dyes extracted from *Sappan*. Some decades ago, it had vanished due to excessive exploitation, forcing them to switch over to cheap and bright synthetic dyes. So the Govt. agencies (or) NGO should train the farmers to propagate and cultivate natural dye yielding plants used for mat weaving. The world prefers natural products to artificial goods, after realizing the harmful effects of the later. The prospects of exporting *Pattamadai* mats to more foreign countries would be brighter when they use only natural dyes. So the Govt. in future should undertake the mission of reviving the culture of using natural dyes in the mat weaving industry. It can also lead to employment generation in village level if serious efforts can be made. The abundant biomass can be used for

manufacturing dyes on small-scale bases, especially in the villages.

Conclusion

Mat weaving is one of the oldest of mans creations done by joining grass with grass and interlacing leaves, with the minimum of tools. The nice *pattu pais* of *Pattamadai* are the traditional gifts for important functions; they are produced in different shapes, sizes and colours as regular floor mats, small prayer mats, dining mats and wall hangings. Their exquisite silken mats have won the admiration of celebrities for over a century. Paradoxically the shrinking tribe remains in search of supports and wider recognition.

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