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State Award: Andhra Pradesh

Artisanal: Dyes and dexterity: Revival of dye-ing skills



**Shri C. V. Raju**

### **Dyes and dexterity: Revival of dye-ing skills**

When some buyers rejected the goods on the basis of the lead content in the synthetic dye, Raju, through research, revitalized the age-old practice of using tree-based colours. Shri Raju attended some workshops and training courses organised by Crafts Council of India and Dastakar group on making natural dyes for textiles. In one of the workshops, Shri Raju met Shri K V Chandramouli, an expert in dye-making. Shri Chandramouli encouraged and helped Mr Raju to work on natural dyes that can be mixed with lacquer. Mr Raju began to experiment on tree and plant based dyes. His experiments resulted in natural dye concentrates over wide ranging colours. These concentrates do not require any binding material such as Titanium dioxide. Crafts Council of India helped Shri Raju to get these dyes tested for their toxicity. Most of these dyes proved to be lead-free. Those which showed signs of toxicity also developed micro-toxins only if they were preserved in the form of slurry or liquid form over long durations. Mr Raju developed an innovative technique to preserve them in the form of cakes, thus avoiding development of micro-toxins.



Shri Raju (41 years) is an agricultural graduate and belongs to a landlord family in Etikoppaka.

Etikoppaka is a large village having a population of around 12,000. Village economy is mostly farming based. It is situated adjacent to a stream and blessed with good rains and fertile lands. More than 200 artisan families live in this village. According to Raju and some elderly artisans, before 1910, the dyes were made from a tree called 'divi-divi' (*Caesalpinia coriaria*). From this tree, the artisans could get only red colour in different shades. This tree has become locally extinct now.

After 1910, synthetic dyes were introduced in the market replacing the traditional practice of using tree-based dyes. These were available in wide ranging colours. However, when they were used, it was necessary to add another chemical, Titanium dioxide while mixing with lacquer.

The artisans in and around Etikoppaka, since then had been making wooden artifacts using synthetic colours. In the post-independence period, lack of demand in the local markets and low prices forced the artisans to migrate to urban areas. Raju's

*Village: Ettikoppaka,  
District: Visakhapatnam,  
Andhra Pradesh*

*Scout: SRISTI, Gujarat*



The natural dyes add shine to the colors and have an advantage of getting wide variety of colours and tones and shades (except white and pink). The colors have better lustre and are transparent as compared to the synthetic ones. Probably the titanium dioxide reduces the lustre in synthetic dyes. It is also possible that the natural dyes mix with lacquer much better than the synthetic dyes.

His experiments in this regard resulted in a wide variety of tree-based dyes. Since they were lead free, Padmavati Associates made considerable profit in the market and got orders from international clients.

The dyes, whether natural or synthetic, are generally available in powder form. Lacquer pellets are heated slowly in an open oven while the colours and titanium dioxide in powder form are applied to the fluid in small quantity at regular intervals. The thick fluid of the lacquer is stretched and twisted on the oven for proper distribution of the colour with lacquer. This process of applying colours over the oven is continued till the lacquer turns into required shade.



family, erstwhile estate owners of Etikoppaka, took up the task of stemming the erosion of skills of the artisans, who would have otherwise migrated to urban areas as unskilled labourers. The first step was to encourage quality products, which would fetch higher value in markets beyond the local market. High prices and increasing demand for their products made the artisans realise the value of their skills.

Shri Raju initiated the process of creating a separate co-operative association of the artisans called "Padmavati Associates". His key strategy has been to strengthen local knowledge traditions of making vegetative dyes, develop new tools, techniques and methods for increasing shelf life of the dyes and generates new uses. In addition, he has also received the vegetative dyeing traditions for local textiles. He has developed many new toys for which market is slowly emerging in India and abroad. With the passage of time, the supply of many of the source trees for vegetable dyes started dwindling. Raju drew attention of the artisan to the future implications of declining supply of raw material. With the initial support from National tree growers' cooperation and Andhra Pradesh Forest Department, 'Etikoppaka Vana Samrakshana Samiti (Forest protection committee) was



This coloured lacquer is stretched, cooled and cut into small sticks. These sticks are applied to the toys and artifacts while turning on lathe. Dried leaves of 'mogali' (*Morinda citrifolia*) are used for finishing and polishing.

Raju further experimented with tree and plant based dyes, which did not require any binding material such as titanium dioxide and most when tested, were lead-free. Those that showed signs of toxicity developed micro-toxins only if they were preserved in the form of slurry or liquid for a long duration. Raju developed a technique to preserve them in the form of cakes, thus avoiding development of micro-toxins. The natural dyes add shine to the colours and are available in wide variety of colours, hues, tones and shades (except white and pink). The colours have better lustre and are transparent as compared to the synthetic ones.

#### Natural dye/colour preparation

There is a specific procedure for preparing different dyes. The raw material derived from different parts of various trees or plants are powdered and boiled to form a thick solution till it starts producing lather. The concentrates are then filtered. The colours and shades depend on various factors –such as the temperature at which it is boiled, duration of boiling, quantities of water and raw material boiled. For instance, to prepare a concentrate of red or orange, one kg seeds of *Bixa orellana* are mixed with two litre of water and boiled on a small domestic oven for twenty to thirty minutes. The concentrate is cooled and filtered to mix with lacquer. However, some colours have complex and systematic process of preparing the concentrate.

One of the major hurdles is the availability of the wood. 'ankudu' (*Wrightia tinctoria*) wood is most suitable for making toys. Forest department imposes fine on these artisans. There is no legal means of obtaining wood directly from the forest other than buying from the vendors. Each member had to pay Rs 10/- a month as a tax in past, irrespective

established four years ago. It aims at conservation of dye bearing species, plantation, rejuvenating existing root stock etc. The Samiti is protecting 120 hectare through 165 members. About 67,000 'ankudu' (*Wrightia tinctoria*) tree saplings were planted during 1998-2001. The government permission is awaited to start harvesting the material from trees planted few years ago. Raju has thus not just conserved the knowledge traditions but also associated biodiversity. And not just that, he has also augmented the traditional knowledge base through contemporary technical, process and institutional innovations and initiatives.



of whether the artisans used the wood from the forest or not.

The Forest Protection Committee has now solved this problem through plantation of this species over last four years.

Another difficulty is the storage of wood. The wood can develop cracks even though necessary care is taken. Once the wood develops cracks, it becomes obsolete and the investment is a waste.

Other hindrance for the artisans in Etikoppaka is power supply to run lathe. Etikoppaka gets power effectively only for six hours during the day. This reduces the total man-hours of work. Working in the nights not only affects the artisans health but also the quality of the product.

