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Ayurvastra: Dyeing Fabric with Medicinal Ayurvedic Plants

Due to its fertile soil and temperate climate, the southernmost Indian state of Kerala is known as a hub for medicinal plants used in the traditional medicine system of Ayurveda. But other than a few tourist destinations, Sri Narayan has seen most traditional lifestyles in his homeland replaced by culturally popular Western conveniences.

"Pockets of traditional living that used to exist have eroded a lot over the past 20-25 years."

So when Narayan, a nutrition and health coach, came across Kerala's Handloom Weavers Development Society (HWDS) and its project of dyeing fabric with Ayurvedic medicinal plants, he knew he had a role in spreading the word.

"It's happening in my backyard, and their voice needs to be heard," Narayan said of the project in the region where he lived for 24 years until moving to the United States (oral communication, July 28, 2011).

During the early 1990s, the Kerala weaving industry went through an economic crisis. In hopes of stimulating the industry, a group of hand weavers in HWDS began reviving their ancestors' practice of dyeing clothing with medicinal Ayurvedic plants. According to Rajan and Satish Kumar—chief dyeing technician and secretary of HWDS—their relatives in the Kuzhuvila family did this to make the clothing retain its color, and the current family members have dedicated their lives to developing it further (S. Narayan translator; S. Narayan e-mail to L. Stafford, September 1, 2011).

HWDS named the practice ayurvastra, a convenient and memorable combination of the Sanskrit words *ayur*—which means life, health, or longevity—and *vastra* or *vastram*—which means clothing.¹ HWDS began creating the fabric and selling it to some shops and markets in Kerala, and the project has received some support from the local Kerala government. But the overall demand for their products from within India has had slow progress.

"The Indian market for a large part is busy adopting Western tastes and ideas influenced by big name brands and media influence," said Rajan and Kumar.

In January of 2011, Narayan created the Washington, DC-based company Vastra in collaboration with HWDS to promote the organization's Ayurvedic dyeing products in North America and the West. Vastra plans to expand its initial offering of shirts and bed sheets to include other apparel items and more fabric varieties to cater to the retail and wholesale market. With the Vastra project, HWDS and Narayan expect to provide employment to more local workers at fair living wages.

The Ayurvastra Dyeing Process

To create the subtle yet beautiful colors of their ayurvastra fabrics, HWDS workers begin by bleaching the all-natural cotton or yarn using a cow urine-based preparation, which is traditionally used in rituals to bathe Hindu idols.² They dry the fabric in direct sunlight and then apply a gumming substance, containing plants like *Aloe vera* and camphor (*Cinnamomum camphora*), and then dip it into a concoction called *kashaya* that contains up to 40 medicinal plants, one of which is the primary herb selected for its specific wellness benefits. The gumming substances help the *kashaya* take hold, giving the fabrics their colors. The fabric is left to dry for 3 days and then kept in a room for 15 days for "seasoning," a period of time that allows the fabric to dry completely and the *kashaya* to settle in to the fabric. It is then washed and dried in the shade and kept for seasoning for another 15 days.

"It is a process that requires manual labor that involves handling large pieces of fabric that get heavy when wet dipping and wringing," said Rajan and Kumar. "It requires attention and focus to ensure standards, like timing and consistency." (An [online video](#) can be viewed to see the workers creating ayurvastra fabrics.)

Current Vastra products include shirts in 6 different colors: Yellow (main herb is turmeric [*Curcuma longa*]); blue (main herb is indigo [*Indigofera tinctoria*]); olive green (main herb is holy basil or tulsi [*Ocimum tenuiflorum*]); beige (main herb is neem [*Azadirachta indica*]); gray (main herb is vetiver [*Chrysopogon zizanioides*]); and light peach (main herb is sandalwood [*Santalum album*]). These are available through Vastra's [website](#). Bed sheets are also available in turmeric, tulsi, and a sunset color specifically dyed for sleep-enhancing benefits. According to Narayan, the herbs that HWDS uses are either organically grown or wild crafted and sustainably harvested by local tribal groups. Even sandalwood, he said, is certified as sustainable by the Forest Department of India.

The US Department of Agriculture certifies fibers and textiles as organic based only on the growing process,³ meaning that products containing organic fibers might also contain non-organic and unnatural substances used in the manufacturing process. The Global Organic Textile Standard—an independent certification—goes beyond the USDA requirements by taking into account processing, manufacturing, packaging, labeling, trading, and distribution.⁴ This program, however, requires that textiles be made from only at least 70% certified organic natural fibers.

According to Narayan, the ayurvastra products are 100% organic. "No [synthetic] chemicals are involved in any stage of creating the fabric," he said. Narayan hopes that Vastra will encourage other businesses in the

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natural and eco-clothing market to develop and adopt fully natural processes.

Supporting Research

Two studies have been completed on ayurveda's effects in humans, both showing positive results. As reported on the Vastra website and in a *TIME* magazine article, researchers in the Department of Pharmacology at the Government Ayurveda College (GAC) in Kerala found that patients who used bedding, rugs, and towels dyed with medicinal plants experienced relief in symptoms of eczema, psoriasis, and even rheumatism.^{5,6} Later, Kerala's Ministry of Health conducted its own study on the effects that herbal-dyed clothing, bed sheets, and mattress had on patients with a variety of ailments. They also hung ayurveda cloth mats on their walls and ceilings. Researchers reported that patients' arthritis and rheumatism symptoms improved, suggesting possible effects that go beyond dermatological responses.⁵

However, the design and control of these studies are not clear and they have not been published. As GAC currently conducts the third study, Narayan said he is encouraging them to seek publication in a peer-reviewed journal.

"It is very difficult to pass any comment about the reliability and significance [of ayurveda] without a comparative study between herbal decoction dyeing and chemical dyeing," said Hari M. Chandola, MD, PhD, the head of internal medicine at Gujarat Ayurved University. "It needs scientific evaluation with multi-centric survey and trials before reaching to any conclusion."

Dr. Chandola noted that because the ayurveda linens are natural and free of synthetic bleaches and dyes, people using them could have a minimized chance of skin reactions from possible allergies to non-natural substances. Also, he said, natural fabrics allow perspiration to evaporate properly, something that can be difficult when wearing synthetic clothing.

"Of course," he added, "if any individual is allergic to any particular plant-based material, then he may show allergic reaction due to that plant also."

Traditional History

According to the Rajan and Kumar, clothing as means to protect and heal goes back to the Rigveda, an ancient and sacred Hindu text composed in about 1500 BCE, as well as the Ayurvedic scriptures, Charaka Samhita (400-200 BCE) and Sushruta Samhita. Until about 100 years ago, they said, people in many parts of India were still using various forms of natural dyeing, in which people repeatedly dipped their clothing in an herb-based preparation after each wash. People in India have also used plants for coloring fabric during the annual festival of colors, known as Holi, because the dyes are "close to nature and toxicity free," said Dr. Chandola.

"At some point—use after use, wash after wash, dipping after dipping—the color and value would hold," said Rajan and Kumar. "But it was seen just as another part of living harmoniously with the environment."

Ayurveda is not referred to in the ancient or contemporary classics of Ayurveda, said Dr. Chandola. Instead, some references mention certain plants that have a therapeutic result when applied to the skin, even without concurrent oral administration, by working through a mode of action called "Prabhav," which means effect.

According to Narayan, the use of medicinal plants and herbs to dye clothing is mentioned in the Ayurvedic texts, just not under the name ayurveda. "I've verified this with multiple sources," he said, "including Vasant Lad" (president of the Ayurvedic Institute in New Mexico).

Conclusion

Since collaborating on Vastra, HWDS's ayurveda project has been receiving increased awareness from many parts of the world. The team in India hopes the partnership will help build a platform for education on ayurveda as an alternative to synthetic and synthetically dyed fabrics, and to increase business that results in a stable economy providing a livelihood for hundreds of people.

While Narayan does recognize that Vastra is a for-profit company, and therefore would like it to experience success, he said he does not wish to see the company attain a large commercial production volume "at any point." His intention for the project is to create more health education in Kerala, for HWDS to have the opportunity to sell their ayurveda fabrics around the world, and to encourage other interested people—researchers or companies—to investigate the wellness potential of fabrics dyed with medicinal plants.

—Lindsay Stafford

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