

Weaving and dyeing with plants

Sarah Chesters

RHS Garden Rosemoor, Great Torrington, Devon, United Kingdom

Aims

To introduce educators to plant fibres and plant dyes and to suggest ideas of how to teach the topics to children.

Objectives

Educators will learn more about plant fibres, familiar and unfamiliar, together with plant dyes, and an easy way to extract them. They will have explored displays and samples, and tried out a weaving activity suitable for children.

Introduction

Plants have many uses, they provide food, drink, musical instruments, sports equipment, furniture, etc. They also clothe us and we all wear plant fibres. Have a look at the inside seam of your shirt or top and read the care label which should also tell you about the fabric. Cotton is likely to be in most of our clothes, but is not the only plant fibre. Today, I am totally clothed in plants – 5/6 different ones, and I will show you some raw plant fibres and spun threads which will be passed around the audience.

Plant fibres

Cotton – the fibres come from the protective layer around the seeds and are harvested as a cotton boll, carded, combed and spun into threads. As a fabric it is worn all over the world – however, it is not very environmentally friendly, unless organic, as 25% of all chemicals sprayed in the world against pests and diseases are applied to cotton. The plant is not grown as a crop in the UK as it is too cold and generally wet here, but it can be grown successfully as a greenhouse pot plant.

Flax – the fibres come from inside the stems of *Linum usitatissimum*, which are soaked in water until the fibres can be extracted and spun into linen cloth. The fibres are longer and slightly coarser than those of cotton and are made into a variety of clothes and household linens. Ireland was once famous for its linen but the last factory closed recently, unable to compete with much cheaper linen imports from abroad. As a consequence of the latter, linen is now very affordable when once it was an expensive fabric. The flax plant is still grown in the UK and Ireland as a seed crop, which is harvested for its oil - used in animal fodder and furniture polish.

Soya Silk – soya beans do not naturally contain a fibre, it has to be made from the soya meal left after the beans have had all oil and water squeezed out of them. The meal is mixed with acids and alkalis and extruded through tiny holes on a machine to form the fibres ready to be spun. Consequently the fibre is not very environmentally friendly and is expensive to produce, but does produce a beautifully soft silk-like fibre.

Bamboo – used for centuries for building and furniture, the last 10 years have seen the emergence of a fabric made from the extracted and spun threads in the stems of *Phyllostachys pubescens*. It has many advantages over cotton:

- 4 times more absorbent
- long lasting anti-bacterial qualities, even after frequent washing
- the plant is fast-growing and does not need to be sprayed with chemicals
- very soft fibre

The fabric is now being made into t-shirts, socks, bath towels, terry nappies, bed sheets, sportswear, and designer clothes and available to buy from various companies including one British website.

Nettle – as with flax the fibres are extracted from the stems after soaking in water, usually in September, when the plant, *Urtica dioica*, has grown tall and fibrous. In the UK, nettle-cloth was a common fabric, particularly in Scotland, until the 17th century when cotton started to be imported in ever increasing quantities. The most recent large scale use of nettle cloth was by Germany during the First World War. As they were at war with every cotton producing country they began to run out and had to open factories to produce nettle cloth to be made into army shirts. Today, a tropical nettle – *Boehmeria nivea* or ramie, is readily available and made into selected clothing.

Bark cloth – for centuries certain kinds of bark have been beaten into fine cloth in a variety of countries in Africa, Australasia and the Pacific. The bark is soaked in water to soften it and beaten with grooved wooden beaters. To make the cloth thinner, beaters with finer and finer grooves are used. The resulting cloth is mainly made into clothing and wall hangings.

Woven plant sundries

A variety of coarser plant fibres are used to weave flooring – including sisal, coir, seagrass, paper, jute. (Bamboo stems are also split and stuck to a backing to produce rugs and flooring.) Baskets can be woven from long pine needles, grasses and water hyacinth – the latter is also popular for conservatory furniture. Water hyacinth is a fast-growing weed of vital water courses in Thailand, but the young stems are now harvested, twisted and woven, turning a major problem into a financial success.

Woven rush mats (including a group activity)

Coopers rushes, heavily watered and wrapped in a blanket overnight become soft and pliable for about an hour – enough time for children to weave them into mats. Younger children can work in small groups and become part of a loom raising alternate warp rushes, while a teacher pushes a weft thread through each alternating gap - this activity will be demonstrated using some of the audience. The mat is bound on all edges and the class takes home a rush mat. Older children can be taught how to weave a small round mat each, and the different stages of this will be on display.

Plant dyes

Most people think plant dyes are dull and uninteresting, but a whole rich rainbow of colours can be extracted from a wide range of plants. Dyers usually use large quantities of boiling water to do

so which can be difficult, if not impossible for teaching schoolchildren. However, the microwave can produce wonderful results in a few minutes.

Pure untreated wool, either in its natural state or spun, is first treated with a mordant, which holds the dye onto the wool. There are numerous mordants which can themselves alter the final shade of a plant dye - an alum mordant will give clear, bright colours, chrome will dull or “sadden” the colour. A local dyer can be employed to mordant your wool beforehand, but if you choose to mordant yourself, make sure you wear gloves, as some, for example, chrome, can burn the skin when wet. Short lengths of wool are then treated with a plant dye in the microwave. Orange onion skins, mordanted with alum and cooked in 1-2cm water for 3 minutes on a medium heat, will release orange coloured water. Strain the water, add the wool and cook for a further 3 minutes on medium. Remove the wool, rinse with cold water and the threads should have turned bright yellow.

There are numerous other dyes available from different parts of plants – roots, bark, stems, leaves, fresh/dried flowers (fresh fruit juices tend to fade easily). Some plants give better results than others and it is best to make precise notes of everything you try out. Some plant dyes, such as powdered madder root are available from plant dye websites.

Displays

After demonstrating all of the above, time will be allowed for delegates to ask questions and explore the following displays:

- Plant Fibres and Spun Threads
- Woven Plant Sundries
- Basket of Wool coloured with Plant Dyes
- Small Rush Mats

Conclusion

All of the delegates at this conference know how much we rely on plants in our everyday lives, but it is sometimes difficult to bring that knowledge to children. By focusing on the clothes and fibres they are wearing and show them how to change the colour of wool in just a few minutes, plants can capture their attention. It provides an alternative way of interesting them in the amazing world around them.

Useful contacts

Suppliers

Texere Yarns – www.texereyarns.co.uk

Tel: 0871 717 1129

On-line stock of yarns, including cotton and linen, fibres and sundries.

Scottish Fibres – www.scottishfibres.co.uk

Tel: 0131 445 3899

On-line stock of yarns and fibres – including bamboo and soya bean, craft equipment.

PM Woolcraft – www.pmwoolcraft.co.uk

On-line stock of natural dyes, mordants, yarns and fibres (including bamboo, soya and linen), books.

BAM – www.bambooclothing.co.uk

On-line UK company begun in June 2006, with bamboo t-shirts and sportswear, with other clothes being added.

Florists – sometimes stock stems of cotton bolls.

The Earth Collection – www.tecsalisbury.co.uk

Tel: 01722 414 668

A natural clothing company specialising in ethically produced clothing using natural fibres - cotton, silk, ramie and hemp.

The Cane Workshop – no website as yet

The Gospel Hall, Westport, Nr Langport, Somerset, TA10 0BH UK

01460 281636

Supplier of Coopers Rushes used in workshop. One bolt weighs approximately 3 kg, and costs £26 + £9 post and packing. This amount will make a great many rush mats.

EZ Carpets – www.ezcarpets.co.uk

Tel: 0208 123 9104

Suppliers of natural flooring including coir, jute, seagrass, sisal – ask for samples.

Urbane Living – www.urbanliving.co.uk

Tel: 0845 257 2382

Suppliers of natural flooring including bamboo, paper, coir, jute, seagrass, sisal – ask for samples.

Dyeing Book:

The Craft of Natural Dyeing by Jenny Dean, pub Search Press £7.95

- excellent for those new to plant dyes.

Biography

Sarah trained at the Chelsea Physic Garden and Kew Gardens before working as head gardener, lecturer and designer. She currently teaches schoolchildren about plants, broadcasts regularly and lectures. Plant uses and unusual plants are a particular interest.