

Secret Colour

BY SIMONE CROSS

Who knew? There are secret colours hiding in your kitchen, your garden or local bushland. And your eyes cannot see them or predict what and where they might be!

These are colours that change with your postcode, season, weather and water—colours that can dye yarn, cloth, paper or wood. These are natural colours—used to dye fibre, and make paints, inks and furniture shellac. Some of these colours are even hiding in your fridge, spice rack or lunchbox.

Why do natural dyeing?

Most natural plant extracts are valued as renewable, low water-use and recyclable dyes. Some require not even a single added chemical to dye strongly because they contain tannin. That's worth considering in a drought. I tip my cooled dye bath contents directly on my garden, and the plants love it, especially my lime tree.

The tannins present in plants and fruits like avocado and pomegranate (skins) will bind easily to fibre, wood, leather and fabric, and allow botanical colours to bind with all of these. Tannin-rich plants abound in Australia. Eucalypts (gums), acacias (wattles), banksias and grevilleas have tannins in their leaves, bark, stems and seed pods.

Our native Australian plants truly make naturally dyed yarns ideal for babies and close-to-skin wear.



They complement any skin colour and provide a neutral, soft botanical palette for any wardrobe.

How can I dye at home?

Look inside your kitchen, bathroom or garden cupboard and you will find some ingredients used in natural dyeing—citric acid (jam making), alum (facial scrub, deodorant 'rock', water purifier), copper sulphate (garden fertilizer, fungicide, pool algacide), iron sulphate (kills moss or bindii, garden fertilizer) and washing soda (laundry wash improver).

Dye modifiers usually change the pH of your dye water and in sensitive plant dyes they will change the development of the final dye colour. Modifiers include vinegar, citric acid, and baking or washing soda. They are essential when using treated water, particularly for natural dyeing with avocado seeds.

The easiest way to dye yarn is by dyeing the skein. I mainly use **immersion dyeing** (yarn and dye in hot water) with a freshly prepared dyepot of plant material. Note that the only difference between **natural** and **synthetic** immersion dyeing is the use of either a plant-extracted or chemically-synthesized dye.

In the next few issues of *Yarn*, I'll be writing a series on dyeing with plants, which will be complemented by Alan R Jones, a horticulturalist, who will explain how best to grow the plants for dyeing.

There are five steps in any natural dyeing process, and in each article, I'll refer to these steps:

1. Soak the Yarn

Soak the yarn in plenty of fresh pH neutral water for at least ten to fifteen minutes (rainwater is best,



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tap water will need a pH modifier). Use cable or other ties to stop a yarn skein from tangling. Check the yarn is completely wet by looking for white spots of dry yarn. Squeeze the wet yarn gently along its length as you remove it from its soak and roll it up flat in an old towel. Stamp like you mean it on the towel (don't rub) until the yarn is evenly dry.

2. Mordant the Yarn

Mordant the yarn after soaking. Mordants (e.g. citric acid, alum, copper, iron) help to set the dye. Prepare a mordant bath in a pot you never use to cook with. Different mordants produce different colours. I test every plant dye bath extract for hidden colour with each different mordant.

To dye 300g or three skeins of yarn in a 7 litre stainless steel pot, I would add no more than 1-2 tbsp. of citric acid, 15g alum (1 heaped tbsp) per skein, 7g (1.5 tsp) copper sulphate or 1 tsp iron sulphate. These are the least harmful and only chemicals I use as mordants: they are naturally occurring and already present in our foods. Sometimes, you can do this step AFTER step 4.

3. Make a Dye Bath

Make a dye bath. In a 7L stainless steel or enamel pot (stew size) collect **two to three times** as much plant

matter as yarn *by weight*. Tear up the leaves and flowers or add broken-up bark, seeds and stems. Cover the plant matter with cool water and put the pan on the stove to heat. **Do not let the liquid boil**, only simmer (under 80°C). There must be no large bubbles in the dye bath, just heavy steam. Colour will disappear between 73°C and 80°C, but the yarn protein needs to open up at that temperature, so you need to keep checking and adjusting it with a thermometer if possible.

Simmer until you see strong colour in the dye bath. Inspect the colour of the water using a slotted spoon. If colour in the water isn't easily visible, use a potato masher to gently bruise the leaves, fruit or flowers. When you have a colour one shade deeper than you want, turn the heat off, particularly if you are not dyeing immediately. Don't put the lid on the pot straight away after you turn it off, because it may keep cooking and go brown. It's usual to remove the plant matter after it has donated its colour to your dyebath, either partly (with tongs) or entirely (with a sieve).

4. Dye the Yarn

Turn down the heat on the dye bath, then gently lower your yarn into the pot. Make sure it is able to move freely in the dye bath. Return the dye bath to a simmer, and keep an eye on your yarn colour. Within 5 minutes of simmering you may want to pull a small section out of the water with a skewer and check its colour (squeeze it with tongs). Remember the colour will be lighter when the yarn is dry. Every dye pot will take a different amount of time to colour your yarn.

5. Cool and Rinse

Take the yarn out of the dye bath. Cool your yarn (maybe overnight) and then rinse in cold water. Soak it in a good pH neutral wool wash. Squeeze out the excess water in a towel and hang to dry out of direct sunlight.