



LOGWOOD is the heartwood of the logwood tree, *Haematoxylon campechianum* which grows in Mexico, South America, Brazil, Madagascar and India. The dye comes as **LOGWOOD CHIPS** or **LOGWOOD EXTRACT** (Hematin). Mordanting with Alum Logwood gives deep rich red violets and purple blues. Mordanting with Iron it will yield blacks and browns. Logwood has good wash fastness but moderate lightfastness – (iron improves the lightfastness). Logwood chips will give a medium depth of shade at 15-20% WOF. Logwood Extract is much stronger than the chips and is only used at 1% WOF (Weight of Fibre).

MORDANTING

- PROTEIN – Animal Fibre
 - Use alum at 15% WOF for blacks
 - Use iron at 15% WOF for greys.
 - Use copper at 15% WOF for purples.
- CELLULOSE – Plant Fibre
 - Mordant with tannin at 8% WOF and then alum at 15% for cellulose fabrics .

DYEING Using chips pour enough boiling water over the logwood chips to make a dyebath and soak overnight. Pour off this liquid and use for your first dyebath. Simmer fibres for about one hour, keeping temperature of dyebath between 77-83°C (170-180°F). If a darker colour is required leave fibres in dyebath overnight. The logwood chips can be soaked again and this can be used for lighter shades. Logwood gives best results in slightly hard water. Adding finely ground chalk brightens the colour, especially if there is no Lime in the local water. Cream of Tartar can be added (at approximately 6% WOF) to push Logwood to a purple-navy, adding Osage or Fustic gives grey-greens, Cochineal gives purples, Cutch for coffee browns, Indigo for navy's, greys to blacks are made with the addition of iron. Using Logwood Extract – Use 1% WOF fibre directly into the dyebath for medium shades.



MADDER Madder is one of the oldest dyestuffs known is used on its own to give gold yellow, reds, mulberry, orange-red & terracotta. Madder grows as a semi prostrate climbing plant and grows throughout India, South East Asia, Turkey, Europe, China Africa the Middle East, Australia and Japan. The dye comes as **MADDER ROOTS** or **POWDER**. Its also used with other natural dyes for crimson, purple, rust, browns and deep red blacks. Dyed without a mordant Madder gives gold yellow. Mordanting with Alum, Madder gives orange reds, with Iron it gives mustard yellows and with Alum and Iron brick reds. To get clear reds the dyebath must be alkaline. Madder root and powder is used at 30 to 100% WOF. You can also use the leafy part of the plant for subtler colours.

MORDANTING

- PROTEIN – Animal Fibre
 - Use alum at 15% WOF
 - Use iron at 15% WOF
 - Use copper at 15% WOF
- CELLULOSE – Plant Fibre
 - Use tannin at 8% WOF
 - The alum at 15% WOF

DYEING Using Madder Root – make a dyebath up and add the roots or powder to the pot. Madder develops to its deepest and richest reds in hard water – water containing calcium and magnesium salts is ideal. If the water is soft add chalk Bring to about 60C and simmer for an hour to extract the dye. Allow the dyebath to cool and add fibres. Don't allow the dyebath to go above 70C or the colours will be dull and brown. Leave the plant material in the dyebath and continue cooking for another 1-2 hours. The madder dyebath can be reused two or three times for lighter shades . There are hundreds of dye recipes for Madder including one which uses iron as a mordant to start then alkaline added to the dyebath to produce rich Aubergine Purple.