



# Natural dyes



**Very few developments or improvements were made in dyes between 500BC and AD1600.** In fact, the dyes used by the Vikings were the same as those used from the times of the Egyptian, Greek and Roman civilizations. Dyeing may appear a relatively simple process but, already in these times, the dyers used complicated processes to ensure that the dye was resistant to fading by light or washing. Dyes were used for the four main fibres – wool, flax (linen), silk and cotton, but it was a more complex process than simply dissolving a substance in water and immersing the fabric in the dye-bath.

There were two types of dye:

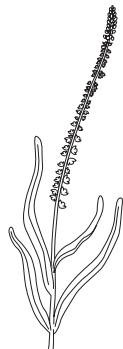
- **Mordant dyes**, such as madder, kermes and cochineal. These needed to be treated beforehand with another chemical called a mordant.
- **Vat dyes** such as woad and indigo. These needed fermentation to get rid of the oxygen and allow the dye to be absorbed by the material.

**Alum** was the only mordant used in ancient and medieval times. The word describes a variety of chemicals called astringent salts found naturally in certain rock formations. Other less important Norse dyes include: **nettles**, **saffron** (made from crocus pollen), **lichens** (found on seaside rocks making a purple dye) and **galls** (which made black).

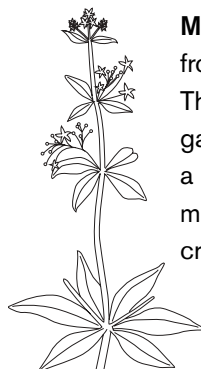
The dyes most commonly used in northern Europe were **woad** for blues, **madder** for reds and **weld** for yellow. Greens were obtained by using both blue and yellow dyes and browns by using madder with varying proportions of yellow. The Vikings may have had access to dyes such as indigo from India but these would have been very expensive.



**Woad** was used for all shades of blue. It is the name of a plant with yellow flowers which grows up to 1.5 meters tall. It grows wild around the Mediterranean sea and was traded throughout Europe. The dye comes from the leaves which were crushed and boiled in urine at a constant temperature for 30 hours. The blues used in the Bayeux tapestry were made from woad and are the only colours not to have faded since the 11th century.



**Weld** was used for yellow dyes. This tall and reedy plant was cultivated in most countries in northern Europe. The plant is cut down, dried and chopped up. It is placed into boiling water and simmers for an hour at 80°C to 100°C. Before dyeing wool must be treated with a mordant which fixes the dye. When using weld this is normally alum.



**Madder**, a mordant dye, comes from the root of a perennial plant. The dye was reliable, cheap and gave a good colour-fastness. It is a chemical called alizarin in the madder root which gives it its crimson colour.