

MINI

BOTANICAL DYE
NOTES

MORDANT
introduction



LANCASTER
& CORNISH



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INTRODUCTION

From the Latin verb 'mordere' - 'to bite' (modern language from French 'mordre'), mordants are metallic salts (including aluminium, iron and copper) that form a chemical bond between the dye and the textile. These mordants help to form bright, colour and lightfast colours on your final piece. Fabrics are typically soaked in a solution of these metal salts, using various chemical combinations depending on the nature of the textile.

They are used for the very good reason that the majority of natural dyes do not 'stick' well to the textile surface without this step. Indigo and woad are in a separate category of non-soluble in water dyes, and do not require a mordant.

Once you have followed the steps to clean your fibre, the mordant process can begin.



COMMON MORDANTS

I am going to cover two key mordants - aluminium based, and iron based. In the natural dye world, aluminium based mordants are often referred to as 'brightening' the colour, in comparison to iron mordants 'saddening' the colour.

✧ Alum (Potassium aluminium sulphate / PAS) - commonly used for protein fibres

This is generally found as a fine white powder that is used extensively by natural dyers, as well as sold for use in the kitchen as a pickling ingredient.

NB Cream of tartar sometimes used to get brighter colours with this mordant

✧ Aluminium Acetate - commonly used for cellulose fibres in conjunction with a tannin mordant phase

A more expensive, more refined version of the above.

✧ Aluminium Sulphate

Less of this mordant is generally required for the same results in comparison to Alum

✧ Iron (Ferrous Sulphate)

A green crystalline powder, iron is a very useful ingredient both as a mordant and a modifier of colours. It should be used very sparingly, and with the correct safety precautions.

Important: Please use protective gloves and masks when working with fine powders and mordants.

Much like in cooking, the amount of ingredients (mordant) that you add, the order in which you add it, and other factors including water temperature, quality and then additional ingredients/modifiers, will all have an affect on the final outcome.

EXPLORE ✧ EXPERIMENT ✧ ENJOY

HEALTH & SAFETY

Please read the safety information before starting

Keep separate utensils and pans used for dyeing only.

Store all dyes in clearly marked storage containers, in a dry place out of reach from children and animals.

Work in a well ventilated area and avoid inhaling vapour from the dye pot.

Do not eat, drink or smoke whilst working with dyestuff.

Protect your skin, clothes and the dyeing area.

Do not consume the dye liquids and keep them separate from food.

Handle all chemicals with care, and use gloves and aprons as necessary.

Avoid skin contact and accidental ingestion and inhalation.

Use appropriate gloves when handling hot saucepans.

Large saucepans full of liquid are heavy and it is safer to let the liquid cool down before handling them.

Dispose of used dyes and mordants responsibly.



WHAT YOU NEED

EQUIPMENT & MATERIALS

Natural textiles (cotton, linen, silk, hemp). Old/vintage fabric that has been used and washed.

Plastic, stainless steel or glass pots

Stainless steel or non-reactive pan(s)

Stovetop for heating water

Stainless steel or wooden spoons

NB: Keep utensils and pans for iron mordants separate to those for alum, as even when washed the smallest residue can affect the outcome of your dyeing.

MORDANTS

Alum (Potassium aluminium sulphate)

MORDANTS

Gallnut

MORDANTING PROTEIN FIBRES

Please read the safety information before starting

Remember, protein fibres are derived from animals, and include SILK and WOOL.

Follow this simple series of steps to mordant your fabrics before the dyeing process. I think of this step as a 'pre-dye.'

Invisible to the naked eye perhaps, but a key step in your preparation for consistent and beautiful results.

METHOD

1. Weigh your fibre when dry, then follow the cleaning/scouring process
2. Make a note of the weight (remember that the calculations you make after this need the WOF (Weight Of Fibre) and this is DRY weight.
 3. Measure your alum (potassium aluminium sulfate) at 15% WOF.
For example, for 100 grams of fibre, you will need 15% of 100g = $0.15 \times 100 = 15$ grams.
4. Place the alum in a non-reactive heat proof container, such as a small stainless steel bowl and pour in boiling water to dissolve.
5. Fill a large saucepan or vessel $\frac{3}{4}$ full with very hot, but not boiling, water, add the dissolved alum, and stir well - make sure there is enough water that the fibre can move around freely when added.
 6. Pre-soak your fibres, wring out well and add to your vessel.
- ** 7. Using your hand (wearing gloves) or a stainless steel spoon, gently work the silk into the mordant for a few minutes.
- ** 8. Leave the fibre in the pot for 24 hours without adding any heat, occasionally giving the fibres a gentle stir.
 9. Remove the fibres from the pot, rinse gently and dry or move onto the dyeing process straight away.
 - 10) Once completely dry mordanted textiles may be stored for a long period of time - make sure to label them.

*** (Alternative for more robust fibres such as wool:*

7a. Gradually warm to bring the temperature to below boiling, and keep at a simmer for around 1 hour, stirring regularly to ensure even mordanting.

8a. Let cool in the bath for 20 minutes, remove and let dry naturally (for example over a non-reactive drying rack).)

MORDANTING CELLULOSE (PLANT BASED) FIBRES

Please read the safety information before starting

METHOD

1. Weigh your fibre when dry, then follow the cleaning/scouring process
2. Make a note of the weight (remember that the calculations you make after this need the WOF (Weight Of Fibre) and this is DRY weight).
3. Mordant first with a TANNIN (second with an alum)

TANNIN PROCESS

4. Measure the tannin (e.g. gallnut) to 15% WOF. Dissolve in hot water.
5. Fill a pan/stainless steel pot with hot water enough to cover the fibres.
6. Add the dissolved tannin.
7. Pre-soak your fibres, wring out well and add to your vessel.
8. Let the fibres soak in this for an hour or 2, stirring and cover to keep the water warm.
9. Remove the fibre and very gently rinse and wring dry.
10. Move straight onto the alum mordant process whilst fibres are wet (or re-wet if you allow to dry).

MORDANT PROCESS

ALUM (Aluminum Potassium Sulfate)

1. Measure your alum (potassium aluminium sulfate) at 15% WOF.

For example, for 100 grams of fibre, you will need 15% of 100g = $0.15 \times 100 = 15$ grams.

2. Place the alum in a non-reactive heat proof container, such as a small stainless steel bowl and pour in boiling water to dissolve.
3. Fill a large saucepan or vessel $\frac{3}{4}$ full with very hot, but not boiling, water, add the dissolved alum, and stir well - make sure there is enough water that the fibre can move around freely when added.
4. Add the wet fibre (that you have already treated with tannin) to your pan (or re-wet and wring out before adding).
5. Let the fibres soak for 1-2 hours (pop the lid on or cover to keep warm).
6. Remove the fibres and rinse. You can now move onto the dyeing process.

