



SOIL TO STUDIO

-handcrafted living-

Fundamentals of Natural Dyeing with Flowers and Food Waste



Introduction

Throughout history, people have dyed their textiles using common, locally available materials. Dyes were originally derived from sources found in nature such as vegetables, plants, trees, lichens, and insects. Some of the natural dyes used in ancient times were indigo, alizarin, tyrian purple, yellow and logwood. Dependence on natural dyes went on for a long time until the 1850s when synthetic dyes started becoming more popular due to the increased demand and cost effectiveness.

Today, natural dyes have made a comeback and artisans and designers are rediscovering the joy of dyeing the fibers with natural dyes due to their non-toxic, environment friendly properties and offer a more sustainable production option.



Type of Fibers

Natural dyes only work well with natural fibers. For the dye community, the fibers are divided into two types –

- a) **Cellulose** - Fibers that are derived from plants like cotton, hemp, linen, jute, etc. These types of fibers tend to take natural dyes in muted, lighter tones (the exception is indigo).
- b) **Protein** - Fibers that are derived from animals, including silk, wool, mohair, cashmere and alpaca. Protein fibers have more of a range of color that is possible with natural dyes. Unlike cellulose fibers, protein fibers can produce bold, dark and saturated colors with natural dyes, as well as muted neutral tones.

Setting up a Dye Studio at Home

You would need the following basic tools:

1. Access to heat and water
2. Kitchen scale
3. Thermometer
4. pH strips to test the alkalinity/acidity of the dye/water – Optional
5. 2-3 stainless steel pots. You could also use aluminum pots but that could affect the color of the dye as it also acts a mordant.
6. Strainer
7. Wooden or steel spoons for stirring
8. Tongs
9. Timer
10. Safety tools like gloves and face masks
11. Few glass jars for storing foraged dye stuff, making modifying solutions like iron etc.
12. A notebook to make notes of your practice and results



Scouring and Mordanting

Properly treating the yarns and fabric prior to dyeing is the most important step in natural dyeing. It ensures that the dye pigments adhere to the fibers evenly and beautifully including the depth of the color. It also increases the light fastness and wash fastness of the natural dyes.

1. **Scouring** - Scouring is integral to the pre-dyeing process. All fibers contain natural substances (oil, wax, gum, fat etc.). In order to dye thoroughly and evenly, these substances must be removed completely as possible. Fabrics marked PFD (Prepared for Dye) may not need scouring, however, I still recommend a gentle scour. The two types of fibers are treated differently –

a) **Protein**

- Fill a large stainless steel pot with water. For each pound of dry fabric, you need 1/2 teaspoon of pH neutral soap liquid. Add to the pot.
- Add your fabric and heat gently (60o C, 140o F) for approximately 1 hour. Turn gently but do not agitate.
- Let it cool and rinse with room temperature water.

b) **Cellulose**

- A combination of soda ash and synthrapol is used. One can also use a pH neutral liquid soap like Meyers.
- Fill a large stainless steel pot with water. For each pound of dry fabric, you need 1/2 teaspoon of pH neutral soap liquid. Add to the pot.
- Add 5% weight of dry fabric – Soda Ash. Mix to dissolve
- Bring the temp to (85o C, 185o F) . Simmer for approximately 1 hour stirring every 15-20 mins
- Let it cool and rinse with room temperature water.

2. **Mordanting** - The term mordant comes from the Latin *mordere*, "to bite". A mordant or dye fixative is metallic salt used to set plant dyes on fabrics. Advanced dyers will use the mordanting step itself as a means to influence color. Cellulose fibers also require a tannin to bond well with the dyes. Both metallic salts and tannins are classified as mordants. Alum (aluminum sulfate) is the most commonly used mordant by dyers for protein and cellulose fibers and fabrics. It improves light and wash fastness of all natural dyes and keeps the colors even. It is also inexpensive and safe to use. However, aluminum acetate is often the preferred alum mordant for cellulose fibers and fabrics. Below are basic recipes and good to get started. However, advanced mordanting needs few more steps especially for cellulose fibers.

a) **Protein**

- Take alum (15% weight of dry fabric) and cream of Tartar (6%) and mix it with boiling water in a cup
- Add to the stainless steel pot filled with water and mix well
- Bring the heat to (85o C, 185o F) and then simmer for 1 hour, stirring occasionally. Do not boil.
- Let it soak for couple of hours or leave overnight. Longer the better as it improves the light fastness of natural dyes.
- Dry on a non reactive rod like stainless steel or plastic. Either store it for future or use immediately for dyeing.

b) **Cellulose**

- Take alum (15% weight of dry fabric) + Soda Ash (2%) and mix it with boiling water in a cup
- Add to the stainless steel pot filled with water and mix well
- Bring the heat to (60o C, 140o F). Switch off and cover the pot with a lid so that it stays warm.
- Soak for at least 3 hours or overnight. Longer the better as it improves the light fastness of natural dyes.
- Re-mordant it with a fresh alum solution with only 10% weight of fabric this time. Soak for 5-6 hours.
- Rinse with tap water and dry on a non reactive rod like stainless steel or plastic. Either store it for future or use immediately for dyeing.

Bundle Dyeing Technique

Bundle dye is a dyeing technique whereby color is transferred from the plant matter onto the treated fabric using steam. There's something intrinsically special about using plants to dye your own fabric. It connects us to nature but also gives us an insight on how craftsmen used to and till today dye our textiles using an extremely slow process. Whether you are interested in moving away from synthetic dyes, designing your own home and clothes or just want to have a fun afternoon with your kids, this technique is simple yet fascinating!

Now that we have the fabrics treated for taking on the natural dyes, the fun part of bundling them with beautiful flowers, spices and vegetable scrap can begin! I find this process very therapeutic and healing – a true stress buster. It is a great way to incorporate nature into your homes. Think table linens, wall hanging, silk pillows or clothes for you and your little cuties!



Some basic rules to remember

Be safe and follow some simple rules. Always remember:

- Never use the same pots and utensils for dyeing that you use for cooking. Keep them separate.
- Wear rubber gloves and use a face mask when measuring mordants and dyes.
- Work in a well ventilated area.
- Dispose of used mordants and dye baths safely
- Natural dye colors can vary from batch to batch as they are very sensitive to many things – pH of the water, temperature, source of the dye materials, amount of minerals present in the water, amount of time taken for each step in the natural dyeing process etc. However, the end result is always beautiful so embrace various shades of color achieved from nature.
- Last but not the least – have patience. It is a slow process and you will be rewarded in the end 😊



DIY Project – Marigold dyed Table Napkins

This is a fun project and what better way to use your own hand-dyed sunny yellow table napkins for your next meal with your family!

You would need the below:

1. Take any linen or cotton fabric. I used a basket weave cotton fabric to give the napkins some texture. But any medium weight fabric will work well.
2. To make a set of 6 napkins measuring 18x18” (with fringe edges and no stitching), you would need approx. 1.5 metres of fabric with a width of at least 38 inches. You could also use your old light colored linens.
3. Pre-treat them (scouring and mordanting) as per the instructions given in the previous pages.
4. Soak your fabric in plain water for at least an hour
5. Marigold dye – You could forage and dry your own marigold flowers or buy powdered dye flowers online. A good source is Maiwa (<https://maiwa.com>) or Botanical Colors (<https://botanicalcolors.com>) for all your natural dye requirements.
6. For dry flowers, you would need 15-20% weight of dry fabric. The higher percentages will give you darker shades.
7. Add the measured dried flowers to the dye pot, cover with water and simmer for an hour to extract the color. Strain the dye liquid and add to dye pot.
8. Add your wet fabric to the pot and simmer until the desired shade is achieved. Approx. 30-60 mins. The color will be slightly lighter once dried so take it out accordingly.
9. Take the fabric out and dry it in shade. Once dried, iron the fabric.
10. Carefully cut the fabric into 18x18” squares. You could hand fringe the edges or hem them. In that case, the napkins would be ~17x17”
11. I would wash them a day later with pH neutral soap once the color sets with ironing.
12. Voila your table linens are ready!



DIY Project – Avocado dyed Silk Scarf

You would need the below:

1. To make natural dye from avocados, all you need are the pits. Clean and store your avocado pits in the freezer. Remember to clean the pits thoroughly, as any remaining flesh affects the color of the dye.
2. When you have enough pits (7-8), add them to the dye pot filled with water.
3. Gradually and very gently increase the temperature to around (60o C, 140o F) and then simmer for 2 hours. Take care not to get the water to boil. It shifts the color from a blush pink to a peach or brownish pink.
4. Let it steep overnight.
5. Next morning, wet your pre-mordanted silk scarf for an hour. Wring and add to the dye pot.
6. Gently bring the heat up and simmer again for 30-60 mins. Soak until the desired shade is achieved. The color will be slightly lighter once dried so take it out accordingly.
7. Dry in shade and iron. I would wash it with pH neutral soap in cold water after couple of days and iron it again.



What to expect on the day of the workshop

The workshop is intended to have fun together and leave our daily stress and chores aside. It is late Sunday morning, so get your coffee brewing, make yourself some breakfast and think about the beautiful neckerchief you would be wearing in the evening!

The healing box (in case you have opted for that option) which will arrive soon, will have all the raw materials required for the class – a silk square (pre-mordanted and ready to dye) along with few dried flowers & modifiers. It would also be fun though to forage some fresh flowers from your garden or bouquets – all flowers with color can be used including eucalyptus. Also, some turmeric, red cabbage and onion skins from your kitchen can be used. This step is not necessary, but adding some fresh colorful flowers is always fun!

We will need the below tools during the workshop, so having these out on your platform will be great:

- A large pot with lid, a strainer which can fit into the pot for steaming, an empty bowl, tongs
- Access to water and heat source like a stove or hot plate
- A drop cloth or any other cloth to lay your fabric on, to avoid dyeing your table!

I can't wait to see you to explore this fascinating dyeing technique and having some fun together.

