Herbs & Ice Dyeing

Herbal plants have a variety of chemical constituents that are not only medicinal but also contribute to creating beautiful color. Not only do they delight in the kitchen, but herbs pack a punch in creating glorious hues. Our skin is our largest organ, and porous. By creating holistic and healthy color, we can shroud ourselves with the medicinal properties that these plants provide. We will dive into creating color with Rosemary, Bay Leaf, Madder, Marigold and mixed florals such as chamomile, cosmos and hollyhock blooms. I cover mugwort as a case study for working with “invasive” plants. But not as an ice dye (a bonus tutorial in the summer to come!)

Through the fun and low impact dyeing method ICE DYEING, we will explore how we can use our dye baths to create dynamic and bold surface designs on textiles. Ice dyeing takes very well to both cellulose and protein fibers. We will also explore different pH and metal modifiers, as well as working with the technique on both wet and dry fibers. Ice dyeing is a great technique for **upcycling stained garments,** using leftover dye baths, or even spent dye material. It requires patience and a little bit of time, but once you get the hang of it, the options are endless.

Please note! This tutorial is not meant to be used for medical advice. Please take note of your own sensitivities. Dyes are not meant to be ingested. I am not a clinical herbalist, these are the results of my own research and experimentation.

Plants & Herbal, Medicinal & Dye Properties

I like to joke that the medium of natural dyes “found” me, and as anyone who is reading this tutorial might relate, there is something akin to magic that happens when we first learn that color comes from plants. I also had the same

“aha” moment when I learned that medicine comes from plants too. We often overlook the common kitchen herbs we eat as medicine, as they are so ubiquitous in our diets. But as our grandmothers knew, these plants contain healthful properties that keep us strong and vital. The knowledge below has come from different herbal teachers I have studied with in the past, as well as insights I’ve gleaned from different herbal books and resources that will be listed in the resources section of this guide. We often overlook our own gut intuition and “knowing” of our relationships with these plants, so I invite you to sit with them yourselves and take notice of the feelings, visions, somatic sensations or free associations that come to you when working with them. There are no wrong answers.

Medicinal constituents that are present in many natural dye plants also contribute to their veracity as strong and substantive colorants. For example, tannins which have been used as mordants since humans began coloring their cloth - possess potent antimicrobial properties. Flavonoids are a diverse group of plant compounds that contribute to both the vibrant hues in plants and their therapeutic effects. Flavonoids are responsible for creating yellow to pale-yellow colors in plants, particularly in flowers. The color intensity of flavonoid-based dyes can indicate the concentration and potential medicinal strength of the compounds. Anthocyanins which are compounds that are responsible for red, purple, and blue colors in plants have been proven to have antioxidant properties, be anti-inflammatory, anti-cancerous and give cardiovascular benefits.

I chose these plants to work with through personal love and admiration. I have included plants that you can find in the kitchen as well as tried and true natural dye staples. They have been used in cultures across the globe since ancient times. The tutorial demonstrates creating the dye baths from their dried forms as well as by using their extracts.

Rosemary (*Rosmarinus officinalis* **)**

Herbal Properties: Great for stimulating hair growth. Associated with improving cognitive and memory function. Antioxidant and antimicrobial. Rosemary to me feels like an aromatic ally and close protective friend. It's also anti-inflammatory, and has been used for pain relief, aiding with digestion (add it into those soups).
Rosemary Lore: In Greek mythology, rosemary is tied to Aphrodite and was believed to have been worn around her as she rose from the sea. In Catholicism, it is closely associated with the Virgin Mary. In medieval Europe, rosemary was burned to purify air during the plague.
Color Profiles: Pale yellow to light green with no modifiers, with iron: dark green, iron & sodium carbonate: Blue/black hues.

Bay Leaf (*Laurus nobilis*)

Herbal Properties: Anti-inflammatory, anti-microbial and supports memory function (much like our dear friend rosemary). It's also aromatic, used in cultures all over the world for cooking, and has been known to aid in digestion as well as relieve congestion and provide respiratory support. Bay leaf salves can also be used for rheumatic pain and joint ease.
Bay Leaf Lore: The bay leaf or laurel is found in many cultures, in Greek mythology it is tied closely to the myth of Apollo and Daphne, who was turned into a laurel tree. They are a symbol of victory and glory and also in Medieval times were used for protective spells and purification.
Color Profiles: A lovely light pale pink. Bay leaves (like loquat leaves, some pine cones, avocado pits and many other plants) are rich in condensed tannins that can create warm peachy, pink colors.

Madder (*Rubia tinctorum*)

Herbal Properties: Madder has notable antioxidant effects, helping to protect cells from oxidative stress and potentially reducing the risk of chronic diseases. Some studies have indicated antimicrobial activity, suggesting its possible use in fighting certain pathogens. Historically, madder has been employed in traditional medicine for treating kidney and bladder disorders, as well as for purifying blood and promoting menstruation. Recent research has also explored madder's potential anticancer properties, though more comprehensive studies are needed to fully substantiate these effects.
Madder Lore: Madder has been associated with Mars and Aries due to its red coloring properties and was also found in Tutankaman's tomb. It also has been linked to Aphrodite, and played a significant role in the textile trade across Africa, Europe and Asia.
Color Profiles: Known predominantly for creating red but with different mordants can create pinks, purples, aid in creating black, burgundies and browns.

Marigold (*Calendula officinalis* **)**

Herbal Properties: Marigolds possess a range of medicinal properties that have been recognized in both traditional medicine and modern research. The plant contains various bioactive compounds, including flavonoids, triterpenes, and carotenoids, which contribute to its therapeutic effects. Marigolds have notable anti-inflammatory and antimicrobial properties and have been used in treating skin conditions and they promote wound healing. They can also be consumed as a tea or tincture, and marigold can aid in digestive tummy issues. The plant also has antioxidant properties, and has been used as remedies for eye health as well!
Marigold Lore: Marigolds have been used in cultures from India to Mexico for centuries. They are the flower of the sun and were named "calendula" by the Romans due to their long blooming time. Marigolds are known for their significance in Mexican culture for Dia De Los Muertos in honoring the dead and can be found in celebrations across

India like Diwali. They symbolize divinity, and purity and are seen as a symbol of resilience and the cycle of life and death.
Color profiles: Bright vibrant yellow to pale yellow. With modifiers can be ochres and browns.

Mordant: Alum Sulfate -or- Alum Triformate -or- Alum Acetate -or- Ferrous Sulfate/Iron Powder.
Optional: Tannin rich plants if you choose to employ tannin in your mordant process. In this tutorial- Sumac leaves are used, but many other tannin rich plants can be used such as black tea, oak, oak galls, tara powder, etc.
Optional: Soybeans for making homemade soymilk
Modifiers
- **Citric Acid or Lemons** (Acidic)
- **Sodium Carbonate** (Alkaline)

Ice cubes or crushed ice, or USE ICE OR SNOW FOR THE WINTER MONTHS
Receptacle to catch the melting ice: Bowl, Bucket, Large container
Strainer/colander/something with holes to let the ice melt through that fits in the bowl.
Gloves, Rubber bands, Stirring spoons, Various plastic containers like yogurt cups, ziplock bags for freezing larger quantities of dye
Stainless steel or non reactive pots
Heat resistant beakers (not necessary, I used them - but you can use the vessels mentioned above)
Ice trays, popsicle trays, varying silicon varieties. Silicone Ice Tray

Dry vs Wet Fabric

You can use the state of your fabric to achieve different types of surface designs on your fabrics. When your fabric is wet - you will achieve a more uniform, watercolor-like and abstract appearance on your fabric. When dry,

you will have more white space and stark contrast between your marks as pictured below.

Ferrous Sulfate & Modifiers

One of the beautiful and sometimes frustrating aspects of natural dyes is that pH shifts can drastically alter our desired hues. Metals, such as ferrous sulfate or iron will “sadden” and darken areas of our ice cubes. This tutorial shows both ferrous made ice cubes, and gently sprinkling ferrous atop the cubes. Please note! Ferrous can damage the longevity of your fibers and make it brittle so the TINIEST amount is needed and you will achieve extremely beautiful results. Please also wear a mask, gloves and keep away from children and pets.

Using whole flowers & herbs

You can use whole flowers and herbs to make your ice cubes. Fill the ice trays with hot water, not boiling, but a little too hot to touch. Place fresh or dried flowers (whole or crumbled) into the slots with the filled water. I recommend using silicon rubber molds, or even Tupperware for this step. Feel free to use plastic that you have lying around! DO NOT USE GLASS - the water will expand and may shatter the glass container. I say this from experience. Not a pretty clean up! Once you’ve filled your trays, place them in the freezer and leave overnight.

You can also add exhausted dye flowers to the baths of ice as pictured in photos below. The exhausted flowers will create small marks on your fabric.

Making Herbal Dye Baths

Herbs like Rosemary and Bay need a longer steeping time to pull out their beautiful colors. I find that simmering the dye baths for at least 2 hours and then letting the color develop overnight makes a significant difference in achieving a darker hue.

Using a non reactive pot - stainless steel - I simmered 100 grams of bay leaves for 2 hours, and 50g of rosemary for 2 hours. The smell was delicious!
After the baths cooled overnight, I poured the dye liquor into my silicone ice cube trays and let these freeze overnight.
I reused these baths to dye swatches of silk I had lying around, and saved the rest of the dye for later projects.

Marigold Extract Ice Cubes

Using a heat resistant beaker, I heated 5g of marigold extract for 30 minutes.
Let this cool to room temperature.
Pour into your trays and add marigolds to the mix
Freeze them overnight

Ground Madder Ice Cubes & Soda Ash/Sodium Carbonate

Heat up 20% WOF ground madder root in a stainless steel pot for 30 minutes.
Let this cool to room temperature.
Pour directly with the ground madder into the cube tray. You can strain this dye liquid if you don't want spotty marks on the samples, but I like this look.
Freeze the cubes overnight.
For a modification - sprinkle ⅛ teaspoon of soda ash/sodium carbonate into each tray with the madder to turn the cubes purple!

Alkaline & Ferrous/Iron Rosemary Bath

Use 20g of dried rosemary in a heat resistant beaker or a stainless steel pot, add 3g of ferrous sulfate/iron salt and 2g of soda ash/sodium carbonate, mix well and let this sit on the heat for 30 minutes at 110F. You will have a beautiful blue gray dye. Freeze this mixture in one of your ice cube trays. These cubes will add deeper and darker spots to your creations.

Using Modifiers

One of the beautiful and potentially frustrating considerations when natural dyeing is that so many variables can go into creating a color. With just one dyestuff you can achieve a rainbow of colors by shifting the pH. For this tutorial, I recommend directly applying either a little citric acid, or soda ash (sodium carbonate) (or both) directly to the ice dye bath. You can also use lemon juice as a substitute for citric acid! Please note, too much lemon juice or citric acid can break the mordant/dye bond and strip the color, so you want to use it sparingly. I've wiped out entire creations this way and it's not fun…

You can also experiment with creating modifier ice cubes! You simply place a small amount - ⅛ teaspoon to the ice cube water and freeze them.

The Ice Dyeing Process

> Place the grid, strainer or colander on the bowl you are using to catch the melting ice. When the ice melts it will need somewhere to go! If it's hot outside and you want to do it directly onto a tarp or second mordanted cloth, go for it.

2. Nest & arrange your fabric in the colander, pinching and scrunching it up thus creating many peaks and valleys, the more you scrunch the more dynamic the pattern you will create. You can mix multiple projects and fabric types together as long as they are mordanted properly! This is a great technique for doing multiple batches at once. I added in all of the above mentioned fabrics to the same colander.

3. Add your dye ice cubes over the fabric, tucking the cubes into the nooks and crannies of the fabric. You can also place cubes under the fabric to ensure you have a lot of coverage.

4. If you are using a large frozen ice bath you saved in a tupperware or plastic container, you can break the ice up by hitting gently with a hammer (PLEASE BE CAREFUL - the ice will shatter, so have goggles or protective wear) and make sure the surface you are hammering on is well protected. I've got a cement floor so we were covered.

5. Then add a layer of modifiers (iron/ferrous sulfate, soda ash/sodium carbonate, citric acid, etc.) the same way, gently tapping the spoon with your finger gets the powder to fall over the piece. Be mindful that iron salt/ferrous sulfate is VERY strong, so really use very sparingly.

6. Now to let the ice melt! Please be patient with this step and let the ice melt thoroughly across your pieces. You may also steam a water bath underneath the piece if you are pressed for time, but my favorite saying in natural dyes is **"Time is an ingredient"**. So the more patience you have the longer and more saturated your piece will become. I typically let mine sit overnight to melt completely. The more I can leave the process alone, the better!

7. When my pieces came out the first time, I felt they were too yellow and not dynamic enough so I scrunched them again and added the rosemary & iron ice cubes pictured below. **One of the beautiful parts of this process is that it is additive, and you can continually tweak the composition.**

Finishing

Rinsing, Washing & Textile Care

Rinse your dyed fabric in an ample amount of water first, you will want to rinse out as much of the excess dye as possible. I find the color will morph slightly, but I prefer to get out as much color that is not bound to mordant as possible.

Then let the fabric dry without further washing for a few days. I find this helps set the colors & designs. Then using a very hot iron, (this is fine for silk as well, silk is a stronger fiber than we commonly think!) iron your piece to help heat set it.

You may then wash by hand or on a delicate cycle in your washing machine with a pH neutral delicate detergent or soap. Hang dry the piece and avoid excessive & prolonged direct sunlight to preserve the colors.