A Year in Natural Dyes

with The Dogwood Dyer

January 2025- MADDER ROOT

BONUS: EcoPrinting with Dye Blankets- Madder Edition

A multi-optional Tutorial that will work with any plant (fresh or pressed)



Using a dye blanket allows you to combine the processes of solid color immersion dyeing fabric or garments and EcoPrinting at the same time. Using a dye blanket (instead of solid color immersion dyeing the fabric first and then EcoPrinting on top) also allows you to create undyed 'negative' botanical shapes- where the leaves or flowers block the dye blanket color application. This is why EcoPrinting with a blanket allows you to use ANY leaf or plant **(using what you already have in your local environment)** -even if they're not good dye plants or plants whose prints have been underwhelming for you in EcoPrinting tests or trials.

Printing with a blanket to create background color is a wonderful option when using plants that don't contain much natural dye or do not print well- you can still use these Leaves and flowers to create beautiful botanical shapes in EcoPrinting. And you can certainly use leaves with good printing capabilities for colorful prints too. Oftentimes, EcoPrinting with a dye blanket also results in the dye seeping through thinner/more delicate botanicals -enhancing their printing ability and creating a tonal background/print effect.





This technique can be used with many different varieties of plant leaves. You may choose to collect fresh leaves at any time of year and press to save for future EcoPrinting or feel free to use them fresh.
To learn much more on Pressed Plant EcoPrinting including the major advantages to working with pressed plants for EcoPrinting and a long list of flowers that preserve well in a press and print beautifully when dry see my Pressed Flower Prints Tutorial Here.



COMING SOON: *to A Year in Natural Dyes later in 2025*

How to Press Plants for EcoPrinting

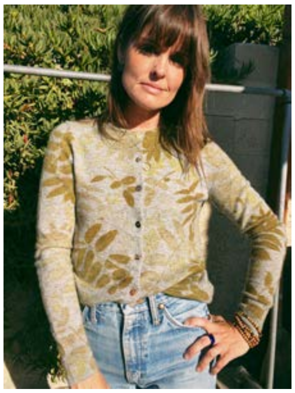
A Comprehensive GUIDE on preparing, pressing & preserving plants for EcoPrinting
This is a great way to have ample botanicals for printing in winter when plants are in less natural supply.
Many leaves can also be effectively frozen & saved for future EcoPrinting too- I'll show you how!

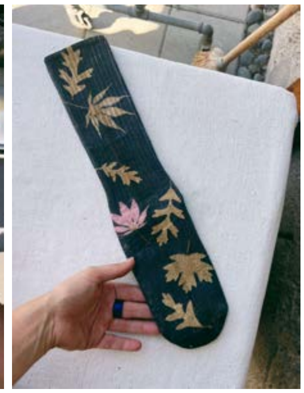
EcoPrinting with Blankets

A **BLANKET** -or- sometimes called '**CARRIER**' cloth is a fabric that is soaked in dye, tannin or mordant to help tint the background area of your EcoPrinted piece. A big advantage to blankets is that they can also act as a padding cloth that helps apply even pressure and moisture to your fabric to be EcoPrinted for the best possible print results- even when they're not soaked in dye/tannin/mordant and just slightly damp with water. To learn much more about this technique see my Eucalyptus EcoPrinting Tutorial and my Bundle Dyeing & EcoPrinting Workshop.



Because the goal of the blanket is to soak up dye, tannin or mordant and deliver it to the fabric that you are Eco Printing, it's a good idea to scour (hot water wash) your blanket fabric before using it, so that it is as absorbent as possible and so that it takes up the dye, tannin or mordant in an efficient fashion & delivers it to your fabric to be EcoPrinted in an even manner.
This tutorial will focus on using **BLANKETS soaked in DYE** (Madder is showcased for this tutorial), but Blankets can be an unlimited resource for changing the appearance, crispness and color contrast of Eco Prints when soaking them in Tannins & Mordants. To learn much more about using Tannin & Mordant Blankets see my Printing with Leaves-Fabric, Garments, Socks & More Tutorial & my Bundle Dyeing & EcoPrinting Workshop.




Printing with Leaves- Fabric, Garments, Socks & More! Tutorial

Learn…

- A process that allows anyone to **make their own metal mordant** easily without using purchased powders.
- A **simple** and accessible approach allowing for a one step pretreatment process **avoiding the use of Alum**.
- Detailed step by step directions for how to make your own tannin extractions for blankets from some of the most potent, common & abundant plants.
- Create a whole array of colors depending on the tannin source & mordant used in the blanket.
- Create the darkest backgrounds possible also without using purchased powders.





///Reflection Prints on Blankets & Reusing Blankets

Employing a blanket in EcoPrinting may also result in "happy accidents" with beautiful negative prints made on the blanket- a reflection of the positive prints on the target fabric (fabric to be EcoPrinted). If your blanket fabric is a fiber that is especially receptive to natural dye- you may even see a more saturated uptake of background color on the blanket. I have found that when NOT employing chalk and tannin in the madder dye blanket solution, the color saturation on the dye blanket can be more intense and saturated. The use of

chalk and tannin (see more below) greatly improves the uptake of the background color on the target fabric, so that it doesn't remain in the blanket

The prints made on blanket fabrics are not as light and washfast as those made on the mordanted fabric. If the prints made on your blanket fabrics aren't pleasing, you can wash them out & reuse them. Blankets can be hot water washed to remove unbound dye, so that they can be reused for future similarly sized EcoPrinting projects requiring the use of a blanket.

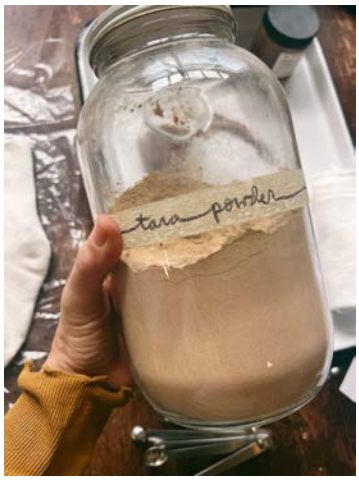
(above) some of my favorite details from the modification sample blankets. Changing the pH or adding iron to your process can have a significant impact on print clarity and background color tone & saturation.

Supplies:

- **Fabric to be dyed-** natural fibers like silk, wool, cotton, linen and hemp. This process can work with both woven and knit materials- Oftentimes the finer the weave/thread count, or finer the knit stitch size, the crisper and more clean prints can be expected. For this printing Tutorial I used many different fabrics of different fibers types including linen, silk charmeuse, wild Ahimsa silk and recycled silk from Green Tailor, and bamboo socks from Dharma Trading. See my Solid Foundations online workshop for many more sustainable natural fiber resources in the US & worldwide. —- Scour all fibers well first. If you'd like to learn a good deal about the multitude of ways in which to clean/scour and pre-treat materials for dye including 8 ways to mordant textiles- consider my **Solid Foundations in Natural Dyeing Online Workshop**
  Some of my favorite **socks** to dye include: TittiMitti, Dharma Trading Hemp Socks, Shop Either/Or Alpaca Socks, Hansel from Basel Trouser Crew Socks
- **Botanicals: Fresh or pressed/dried leaves & flowers-** see below for many examples of plants that print well and many plants that don't print well, but still make beautiful negative white prints with the dye blanket technique.
- **Fabric for Blanket-** see suggested fabric types and links for blankets below
- **Pot for steaming with well fitting lid & tongs**
- **Scale-** I recommend getting a jewelry scale for calculating very small amounts of madder root extract precisely.
- **Jar, stir stick/spoon, large bowl, pot or bucket** for mordant measuring & mixing
- **Heat source- hotplate, propane stove, etc.**
- **Alum sulfate** (protein fibers) -or- **Alum Acetate/Alum Lactate** (plant fibers as well as silk) -and/or- **Iron (ferrous sulfate)** or any of the alternative mordants/binders used in Mordant Process 1-3 Section**.**
- **Chalk/Calcium carbonate** (for fixing alum acetate mordanted fibers and as an addition to madder dye baths)

- **(Optional) Tannin extract** as an addition to madder dye baths.
- **Twine, string or scrap fabric ribbon** for binding bundles
- **Dowel, stick or pipe** section for rolling your ecoprinting bundle
- **Recycled plastic or parchment paper as barrier (optional)** I use saved bread bags cut flat or old plastic mailers. Alternatively- parchment paper works to some extent to prevent some bleed through of pattern print but is not as effective as recycled plastic. Plastic barriers can be wiped down and reused.

Ingredients such as alum & chalk/calcium carbonate can be purchased from:
USA- Botanical Colors, Long Ridge Natural Dyes, Stony Creek Colors, Aurora Silks, Dharma Trading, Carol Leigh's Hill Creek Fiber Studio, The Yarn Tree
CANADA- Maiwa
EUROPE- Wild Colours, The Mazi , Saber Fazer, Kremer Pigments, Greening
AUSTRALIA- Kraft Kolor




****It is recommended to read through the entire directions before you get started to understand the many possible ways this technique can be adapted**

Fabric Preparation

/// Scouring-

Be sure to scour! Skipping on a good and thorough cleaning and scouring process (especially for cellulose/plant fibers) can result in inferior print and dye quality. For cellulose fibers- use a washing machine on the hottest wash cycle with pH neutral detergent & 2%WOF soda ash/washing soda/sodium carbonate. This removes naturally occurring wax/pectin/lignin/starch/dirt/sizing etc that can prevent good mordant & dye uptake. The washing machine method works especially if you have control over the strength of your hot water heater and the soaking times in your washer- I will say though that scouring is MOST efficiently done by hand in a pot with ample water. Learn more about efficient scouring in my **Solid Foundations Natural Dye Workshop**. Protein fibers like wool and silk require a more gentle approach to scouring with less alkaline detergent.

Comparing Mordant Methods

Conventional mordant methods can create beautiful clear prints, especially if working with densely woven or knit fabrics and ensuring that the moisture level & steam time of the fabric being eco printed is controlled. If you're having trouble achieving clear saturated eco prints, changing your mordant method can greatly improve clarity and depth of print color. See labeled samples below in the **Print Samples Section** at the end of this Tutorial for more visual examples to understand what sort of results will come from each Mordant Method included in this tutorial (Mordant methods 1, 2 & 3). And see examples just below that compare conventional mordant methods & my unique, adaptable Direct Mordant method that helps create clear saturated prints outlined in my Bundle Dyeing & EcoPrinting Online Workshop. This workshop offers a deeper dive into EcoPrinting also including varying composition/steaming methods and an extensive list of plants that EcoPrint wonderfully and can be foraged in many different bio regions all over the world.




(left & center left) two samples of the same type of linen side by side showing the difference that the mordant procedure can make for the clarity of prints- the linen on the right of these two images with more blurred edge prints was mordanted using a conventional mordant method (Mordant Process 2 of this Tutorial), and the linen on the left of these two images with clear edged prints was mordanted with my Direct Mordant method shared in my Bundle Dyeing & EcoPrinting Workshop. **(right & center right)** California sagebrush EcoPrinted on linen and organic cotton socks. The print with blurred edges (center left) was made on linen mordanted with a conventional mordant method (Mordant Process 2 of this Tutorial), and the print with clear, crisp edges with no bleeding (right) was made on organic cotton socks that were mordanted with my Direct Mordant method shared in my Bundle Dyeing & EcoPrinting Workshop.

Conventional Mordant Methods

***Please protect your skin and lungs when working with concentrated metal salts like alum sulfate, alum acetate or ferrous sulfate- wear a mask when measuring fine powdered substances and work in a well ventilated place. Wear gloves when skin may come into direct contact with metal salts either in dry or wet form. KEEP CHILDREN AND PETS AWAY FROM METAL SALT- ACCIDENTAL INGESTION OF IRON ESPECIALLY CAN BE DANGEROUS

/// Mordant Process 1 (for protein/animal fibers- wool in particular)-

This mordant will bring out the lightest, cheeriest & most delicate colors possible from your plants and the dye used for your blanket.

If you would like more striking and deeper colors when EcoPrinting wool- you may add a small amount of either purchased ferrous sulfate (iron salt), or homemade iron liquor (ferrous acetate) to the mordant solution. The procedure is just like Mordant Process 3 (read below), except you will be using Alum sulfate instead of Alum acetate. Use anywhere from .5% to 4% WOF Iron. Expect the fiber to oxidize once removed from the mordant bath to a slight rusty brown

color. This is to be expected and will become much less apparent once the fabric/garment is printed/rinsed/washed and dried in the end.

1. Weigh fabric/garment and note the weight.
2. Wet out textile or garment to be mordanted thoroughly first letting it soak while you prepare the mordant bath.



3. Using the weight of the textile/garment, measure between 10-20%WOF **alum sulfate**
4. Dissolve alum sulfate in hot water and add to the mordanting vessel with enough additional water so fibers can move easily.
5. Add wet textile to mordanting vessel, raise temp slowly to 180F and hold for 1 hour stirring often (for wool be sure to stir carefully being mindful not to accidentally felt the wool fibers which can cause significant shrinking and shape changes for garments)
6. Turn off heat and let fibers soak for an additional 2-12 hours





(above) mordanting thrifted cashmere wool sweaters with alum sulfate

7. Remove fibers, rinse in cool water & proceed to printing immediately or dry to store for future dyeing. For wool garments- lay flat on a towel and reform the original shape for before the garment dries.

/// Mordant Process 2 (for silk and any cellulose/plant fibers like cotton, hemp, linen. etc.)-

This mordant will bring out the lightest, cheeriest, and most delicate colors possible from your plants and the dye used for your blanket. No extended heat is necessary and this process can be done in a bucket/bowl, not requiring a pot to be heated over a stovetop or heat source.

1. Weigh fabric/garment and note the weight.
2. Wet out textile or garment to be mordanted thoroughly first letting it soak while you prepare the mordant bath.
3. Using the weight of the textiles/garment, measure between 5-10% **alum acetate or alum lactate.**
4. Dissolve alum acetate (or alum lactate) in hot water and add to mordanting vessel with enough additional water so fibers can move easily
5. Add wet textile to the mordanting vessel, stirring frequently at first and then occasionally.
6. Keep fibers in mordant bath for 1-2 hours making sure they stay submerged. Fibers can remain in the mordant bath for an additional 12 hours for more mordant uptake.

7. Remove fibers from mordant bath and hang to fully dry. DO NOT RINSE, but be sure to wring out well to dry so that the fabric is damp but not sopping wet and hang up taught. Be sure the fabric is bone dry before proceeding to the fixing step.

(above) remember to abstain from rinsing your alum acetate mordanted goods and allow to dry fully before giving them a chalk/calcium carbonate bath

8. FIXING: Alum acetate is best utilized when 'fixed'- learn more about why fixing is necessary and many other common natural materials that can be used instead of chalk/calcium carbonate for fixing in my **Bundle Dyeing EcoPrinting Online Workshop.**
   Use 25g chalk (calcium carbonate) for up to 10lbs fiber. This chalk bath can be continually reused as long as it remains clean. Measure out chalk and dissolve in enough water for fibers to move freely. Add the mordanted fibers and with a gloved hand or spoon mix aggressively for a few minutes to ensure all parts of the fiber have been exposed and "fixed".
9. Rinse fibers well in cool water & proceed to dyeing or dry and store fiber for future printing.

/// Mordant Process 3 (for silk and any cellulose/plant fibers like cotton, hemp, linen. etc.)-

This mordant will bring out the deeper, darker colors possible from your botanicals and will generally create more striking print especially for tannin rich botanicals. The iron (ferrous sulfate) included in this process will also affect the color of your background making it moodier and less vibrant. No extended heat necessary and can be done in a bucket/bowl, not requiring a pot to be heated over a stovetop or heat source.

1. Follow steps 1-4 of **Mordant Process 2** above.
2. Measure anywhere between .5% and 4% WOF iron sulfate. For a deeper tone from your botanicals without completely obscuring their dye color use .5% WOF ferrous sulfate- botanicals that typically create yellow prints such as leaves that are picked in the spring and summer when tannin levels are lower will create wonderful greens with a small amount of iron (.5-2%). For the absolute darkest prints possible, use 4% WOF iron sulfate. After measuring out your ferrous sulfate iron- dissolve with a small amount (½ cup to a cup should do) of hot water and add this to your alum acetate mordant bath.

3. Add wet textiles/garments to the mordanting vessel, stirring frequently at first and then occasionally.
4. Keep fabrics/garments in mordant bath for 1-2 hours making sure they stay submerged. If you do not keep fabrics submerged in a mordant bath containing iron especially you will likely see areas of concentrated color discoloration from uneven oxidation. Fibers can remain in the mordant bath for an additional 12 hours for more mordant uptake, but generally 1-2 hours is sufficient for great results.
5. Remove fibers from mordant bath, DO NOT RINSE, but be sure to wring out well so that the fabric is damp but not sopping wet and hang as taught as possible. Be sure the fabric is bone dry before proceeding to the

fixing step. ***You may notice when the fabric dries, that you will see the iron oxidizing and become rusty in color especially at the seams of garments- this is to be expected and cannot be avoided completely. Be sure to hang taught with no areas of sagging or gaping, and rotating during the drying period if possible to reduce excessing iron oxidation discoloration that is streaky or spotty looking. After the complete printing/washing and drying process is finished, any uneven rust colored discoloration can be minimized by strategic placement of botanicals & plant placement composition- essentially covering with plant prints.

(left) linen and silk treated with Mordant process 3 immediately after removing them from their mordant bath **(center)** after fully drying the iron in the mordant oxidizes and turns a golden brown color **(right)** the same linen and silk materials mordanted with Mordant Process 2 (white fabrics on the left) and Mordant process 3 (gold/brown fabrics on the right)

6. FIXING: Follow steps 8-9 above in the **Mordant Method 2** section. It is best to keep chalk baths for iron treated fabrics separate from chalk baths for alum only treated fibers to avoid contamination of iron.

EcoPrinting with Blankets

/// Blanket Fabric Options

I haven't worked extensively with synthetic fabric for blankets, but if you find fabrics at thrift shops that are natural/synthetic blends or all synthetic, you might like to try using them to make use of the available materials already in this world in need of creative reuse. Extra large knit jersey white tshirts in the men's section of thrift shops are great for this.
Second hand stores also often have knit sheet sets that are one of the least expensive options because you can get multiple yards of stretch knit fabric for much less cost (and the most sustainable).
Knit fabric (instead of woven fabric) is ideal for blanket material because of its ability to stretch over the fabric to be EcoPrinted, creating less wrinkles and interrupted dyed background space when the bundle is rolled.
If you hope to create medium to dark colored backgrounds, it's a good idea to match the weight and thickness of your blanket to your fabric being EcoPrinted to ensure it is absorbent enough to carry enough dye, tannin or mordant to dye the background in a deeper color.
For Terrycloth & Stretch Fleece- The flat side (not the loop or fleece side) is the side of the fabric that will come in contact with the fabric to be EcoPrinted.


(left) this lightweight organic cotton jersey is stretchy and absorbent- perfect as blanket material- this fabric was given to me by a friend. a wonderful alternative to purchasing new fabric to use as ecoprinting blankets, is seeking out second hand knit sheet & pillowcase sets as well as large tshirts at thrift stores. **(right)** organic cotton terrycloth is an excellent blanket fabric choice- and as you can see on this medium weight terrycloth- it has loops on one side and a flat knit side on reverse- the flat knit side is best laid down on the botanical composition when ecoprinting.

/// Absorbent Fabrics that work well as Blankets include:

For EcoPrinting **Heavy Weight Fabrics**:
Your fabric to be Ecorinted weighs:
more than 350/gsm (grams per square meter) / 10oz/yd (ounces per square yard)

- Nature's Fabric Organic Cotton French Terry Grown in the USA 400gsm (11oz/yd)
- Organic Cotton Plus Stretch Fleece 350gsm (10oz/yd)

For EcoPrinting **Medium Weight Fabrics:**
Your fabric to be Ecorinted weighs:
more than 175/gsm (grams per square meter) -or- more than 5oz/yd (ounces per square yard)

- Organic Cotton Plus Interlock 260/gsm (7.7oz/yd)
- Dharma Trading Cotton Interlock 200gsm (6oz/yd)
- Dharma Trading Cotton Jersey 200gsm (6oz/yd)

For EcoPrinting **Light Weight Fabrics:**
Your fabric to be Ecorinted weighs:
less than 175/gsm (grams per square meter) / 5oz/yd (ounces per square yard)

- Nature's Fabric Organic Cotton Knit Jersey 190/gsm (5.6oz/yd)
- Dharma Trading Hemp/Cotton Jersey 170/gsm (5oz/yd)

///Which DYES work well for Blankets?

Anthraquinone dyes like Madder, Cochineal, Rhubarb, Dock Root
Naphthoquinone dyes like Black Walnut Hulls, Henna & Alkanet
Flavonoid rich dye plants like Weld, Chamomile, Cosmos, Coreopsis, Osage Orange, Cannabis, Onion skins, Marigold, Goldenrod. Etc.

Purple/Red Flavonoids: Logwood & Sappanwood
Anthocyanin rich dye plants like Purple Pincushion, Hollyhock, etc.

Tannin Rich Plants- although this Tutorial is focused on Dye Blankets and not Tannin Blankets- because there are MANY fun color shifting & mordant process tweaks in the Tannin blanket EcoPrinting Process that result in a multitude of different exciting outcomes, there are many plants full of ample amounts of dye AND Tannin I suggest using such as: Black Walnut Hulls/Husks AND Leaves, Pomegranate, Acorn, Myrobalan, Wattle/Acacia, Cutch, etc. To learn much more about using Tannin & Mordant Blankets see my Printing with Leaves-Fabric, Garments, Socks & More Tutorial & my Bundle Dyeing & EcoPrinting Workshop.

Making the Dye Bath for your Blanket

You can extract the dye yourself from fresh or dried dyestuffs or you can work with dye extract.
If it's your first time EcoPrinting with a dye blanket I recommend trying an extract first- it's simpler, easier and you ultimately have more control over the strength of the background color because you can calculate with more accuracy, the amount of dye extract and the volume of water to be used based on the weight of your fabric to be EcoPrinted. Extracts also allow for darker more saturated background colors. After scouring (if needed) your blanket & cutting it to the right size (slightly wider and a few inches longer on the top and bottom than your fabric to be ecoprinted)- weigh the DRY blanket fabric & write down the weight. Do the same with your fabric to be ecoprinted. It's helpful to know the weight of your blanket and ecoprinting fabric to calculate dye extract and water volume amounts.

(left & center) using Botanical Colors Madder extract- measuring out needed quantities for making the light, medium and dark background samples **(right)** dissolving the extract in the correct water volume for the weight of the blanket fabric will ensure a concentrated enough application of dye to the blanket with low waste of dye and consistent results.

/// Making the Blanket Dye Bath using MADDER ROOT EXTRACT

For this Tutorial I am using **Botanical Colors Madder Extract.** Follow the guidelines below for calculating how much dye extract and water volume to dissolve the extract in for soaking your blanket. Depending on the strength of the extract and dye you are using, the below guidelines can be changed to suit your color intensity desires. I recommend doing small swatch tests to see about color intensity for different dyes and extract sources. Always keep detailed notes of the dye extract and water volume quantities if you hope to replicate your swatch tests on a larger scale. ****For the strongest most saturated colors with madder background- chose to EcoPrint on protein fibers like silk & wool**

(above) light, medium & dark madder background ecoprints with their accompanying blanket fabrics after printing. I used the formula below to calculate how much madder extract (and optional chalk and/or tannin) to use for each sample set based on the weight of the fabric to be ecoprinted.
For each sample set, I used the same types of botanicals in roughly the same plant placement compositions.

Dark Background Color- -use **11.25%** Weight of Fiber being dyed/ecoprinted madder root extract

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by .1125 (100 x .1125= 11.25) -you will use 11.25g madder extract

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by .1125 (75 x .1125= 8.44) -you will use 8.88g madder extract

Medium Background Color- use **2.25%** Weight of Fiber being dyed/ecoprinted madder root extract

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by .0225 (100 x .0225= 2.25) -you will use 2.25g madder extract

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by .0225 (75 x .0225= 1.69) -you will use 1.69g madder extract

Light Background Color- use **1.1%** Weight of Fiber being dyed/ecoprinted madder root extract

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by .011 (100 x .011= 1.1) -you will use 1.1g madder extract

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by .0225 (75 x .011= .83) -you will use .83g madder extract

(above) Silk Noil Knit Fabric EcoPrinted with light, medium & strong madder backgrounds - See the formulas above & below (depending on whether you're using extract or raw dyestuff) to calculate how much madder (and optional chalk and/or tannin) to use for your desired depth of background color *Remember that for deep saturated red colors I suggest working on silk or wool.

(left) LIGHT madder background ecoprint with the accompanying blanket fabric (right). Because I wanted a light pink background that wasn't orange I added a small amount of Chalk/Calcium carbonate to the madder blanket dye bath and because I was NOT going for a deep red I did not add tannin.

(center) MEDIUM madder background ecoprint with the accompanying blanket fabric (right). Because I wanted a strong pink rose background that wasn't orange I added a small amount of Chalk/Calcium carbonate to the madder blanket dye bath and because I was NOT going for a deep red I did not add tannin.

(right) DARK madder background ecoprint with the accompanying blanket fabric (right). Because I wanted a dark red background that wasn't orange toned I added a small amount of Chalk/Calcium carbonate to the madder blanket dye bath and because I was going for a DEEP RED, I did also add a small amount of tannin.
*Also Note that the blanket fabric turns more brown in color when tannin is added to the madder blanket dye bath.

/// Making the Blanket Dye Bath using MADDER ROOT (PIECES -or- GROUND)

Dark Background Color- use **150%** Weight of Fiber being dyed/ecoprinted madder root

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by 1.5 (100 x 1.5= 150) -you will use 150g madder root pieces/ground madder root

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by 1.5 (75 x 1.5= 112.5) -you will use 112.5g madder root pieces/ground madder root

Medium Background Color- use **30%** Weight of Fiber being dyed/ecoprinted madder root

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by .3 (100 x .3= 30) -you will use 30g madder root pieces/ground madder root

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by .3 (75 x .3= 22.5) -you will use 22.5g madder root pieces/ground madder root

Light Background Color- use **15%** Weight of Fiber being dyed/ecoprinted madder root

For example: your fabric to be EcoPrinted weighs 100g- you will multiply the fabric weight by .15 (100 x .15= 15) -you will use 15g madder root pieces/ground madder root

Or for example if your fabric to be EcoPrinted weighs 75g- you will multiply the fabric weight by .15 (75 x .15= 11.25) -you will use 11.25g madder root pieces/ground madder root

/// Volume of Water Calculation for Dye Blanket Bath

It is a good idea to use just enough water to create a volume of dye blanket bath that allows you to thoroughly and evenly saturate the blanket with a small amount of liquid left over. This ensures you're creating a strong enough dye blanket dye bath to achieve the background color results you want without wasting dye or making the dye blanket color too diluted.
A good rule of thumb: The volume of water you use to dissolve your dye extract should be 2.5 times (in milliliters) the weight in grams of the dry blanket fabric. So for example, if your dry dye blanket weighs 100g you want the dye blanket bath to be a volume of 250ml - this generally is enough dye liquid to completely soak your blanket with some leftover liquid.
The same rule of thumb applies for dye blanket baths that you make from fresh or dried whole dyestuffs. You can start with 4 times (in milliliters) the weight of the dry dye blanket fabric volume of water & in the process of extracting the dye, some water will naturally evaporate and after straining the dye bath, measure out the needed volume of water as your blanket dye bath.

/// Optional: Chalk & Tannin Additions to the Dye Bath

Just like in conventional immersion dyeing with madder, you can add a small amount of chalk/calcium carbonate and/or tannin to the dye blanket dye bath. This is especially important if you are hoping to create a deep red or dark red background that is not orange or brown. As well as if you hope to make a more brilliant medium or light pink instead of a salmon/orange toned pink. The chalk addition also aids in optimal uptake of dye in the background- preventing too much residual dye from lingering on the blanket.

(left) light, medium & dark madder background EcoPrints with their accompanying blanket fabrics after printing. The provided formulas above were used to calculate how much madder extract (and optional chalk and/or tannin) to use for each sample set based on the weight of the fabric to be EcoPrinted. The tiny amounts of chalk and tannin make quite a difference in color tone and depth for madder root dye. *Note that the blanket fabric turns more brown in color when tannin is added to the madder blanket dye bath. **(right)** An example of what happens when chalk is not added to the dye blanket madder bath- this print has an orange leaning background color using medium strength madder blanket with no chalk or tannin addition.

- **Chalk/calcium carbonate** addition to the dye blanket bath results in more balanced colored reds that are not orange or brown toned. Chalk in the dye bath for the blanket will also aid in optimal dye application, cutting down on excess dye lingering on the blanket after steaming.
  When using Extract:
  *For every 5g of madder extract you use to make your blanket dye bath, add a smidgen (1/32 tsp) of chalk/calcium carbonate to the dye blanket bath.

When using Madder Root (Pieces/Ground):
*For every 50g madder root you use to make your blanket dye bath, add a smidgen (1/32 tsp) of chalk/calcium carbonate to the dye blanket bath.

- **Tannin** addition to the dye blanket bath is advised for the deepest, truest red possible. I like using Tara powder, but you can also use many other tannin rich extracts like oak gall, chestnut, and acorn.
  When using Extract:
  *For every 5g of madder extract you use to make your blanket dye bath, add a pinch (1/16 tsp) of Tannin extract to the dye blanket bath.
  When using Madder Root (Pieces/Ground):
  *For every 50g of madder extract you use to make your blanket dye bath, add a pinch (1/16 tsp) of Tannin extract to the dye blanket bath.

(above) making & revealing the dark madder background ecoprint sample textile. The tiny amounts of chalk and tannin made quite a difference in color tone and depth for madder root dye producing a deep red on the silk noil knit fabric. *Remember that for deep saturated red colors I suggest working on protein fibers like silk or wool.
(below left, center left & center right) eucalyptus, pine and cannabis can impart color when EcoPrinting and are all thick enough to also effectively block the madder dye from the blanket making nice white negative prints. **(below right)** oxalis reverse print on the dark madder blanket.

EcoPrinting with a Blanket

Remember that many different plants can be used in this technique & that any botanicals- even if they don't have dye rich EcoPrinting abilities can create negative resist prints because of the dye blanket.

Depending on the fiber pre-treatment (particularly if iron and/or tannin is used in the pretreatment process), leaves of all plant varieties will give prints as well as possibly discharge -or- 'white out/bleach'. See my **Bundle Dyeing & EcoPrinting Online Workshop** for more plant species ideas as well as my **Dyeing, Painting and Discharge Printing with Acidic Plants Tutorial.**

/// Recycled Plastic, Paper or Fabric Barriers

To get the clear print and dye background colors shown in this tutorial the use of a recycled plastic, parchment paper, or thick fabric barrier is needed. Plastic barriers can be wiped down and reused multiple times. I have a collection of saved plastic bags from packages & consumed food (bread bags and cereal bags can be cut open and used!) and neighbors and friends also save their plastic packaging for me to reuse. Plastic barriers are more effective for creating clear prints without bleed through of dye because they're more impermeable than paper or fabric. Prioritize using existing plastic that is already in your life instead of purchasing virgin plastic for the purpose of ecoprinting.

/// Which side of the Plant?

Be mindful of which leaf or flower side comes in contact with fabric to be printed with the understanding that for most plants (and particularly with leaves), one side of the leaf will usually print more successfully. The underside (the side with more visible veining) of most leaves prints more readily than the top side. One wonderful thing about EcoPrinting with dye blankets is that leaves that have no significant printing ability or the top side of leaves that have less printing power can be used to create white negative prints. Many dye plants and flowers like eucalyptus, coreopsis, cosmos & weld will print equally well on both sides.

(left) The top and oftentimes more colorful side of leaves compared to the more prominently veined and paler underside of maple leaves. The paler underside will make more striking colored ecoprints. **(center left, center right & right)** These fabric samples that have been printed by folding fabric & sandwiching the leaves with fabric then rolling and steaming. This shows how one side of the leaves will generally give more clear and colorful prints. And sometimes leaves will print excellently on both sides- as with eucalyptus leaves. Tannin can bleed from one side of the leaf (typically from the underside) and make an outline on the other side of the fabric as is visible with the oak leaf print detail (right).

/// Single Plane Composition

1. For this print project I am using organic cotton that has been scoured well & mordanted following Mordant Process 2 above with 10%WOF alum acetate, then fixed in a chalk bath. Fabric can be printed either while it is still damp from the post mordant rinse or if it has been dried after mordanting, it can be soaked and left to partially dry so that it's still damp but not sopping wet. You may like to use a spray bottle with plain water to spritz the fabric before starting the botanical composition.
   You may also like to scour your blanket fabric if it is new fabric (especially if it's a cellulose fiber like cotton).
2. Weigh your blanket fabric & determine strength of dye background color you want- Light, Medium or Dark and follow the recommended formulas to determine how much dye extract or raw dyestuff (madder root pieces) & water volume to use to make the dye blanket bath.

(above) weighing the blanket fabric and measuring out madder extract to make the dye blanket bath.

3. Ensure dye blanket bath is the correct volume- Weight of blanket times 2.5- so if your dry dye blanket weights 100g you want the dye blanket bath to be a volume of 250ml - this generally is enough dye liquid to completely soak your blanket with some left over liquid.
4. Dissolve madder extract very thoroughly in hot water to avoid spotting or speckling of dye in the background -or- Extract madder in a concentrated manner using volume of water 4 times your blanket fabric (see more detailed water volume guidelines above). Strain dye bath if needed.

(above) measuring out the correct volume of water to dissolve the madder extract to make the madder bath for the blanket, and dissolving the madder and chalk stirring well.

***Optional:** Just like in conventional immersion dyeing with madder, you can add a small amount of Chalk (Calcium Carbonate) and/or Tannin to the dye blanket dye bath. This is especially important if you are hoping to create a deep red or dark red background that is not orange or brown. As well as if you hope to make a more brilliant medium or light pink instead of a salmon/orange toned pink. See the Chalk & Tannin Additions section above for guidelines on how much to add to your madder dye bath. For this piece I added chalk because I wanted a pink color background and I chose NOT to add tannin to the dye bath because I was not going for red.

5. Wet out your dye blanket in plain water first to thoroughly saturate the fabric- this will ensure the dye is taken up more evenly on the dye blanket fabric, then wring it out very well to remove as much extra moisture as possible.
6. Soak the pre-wet blanket fabric in the prepared dye bath and while wearing gloves- massage the dye into the fabric well. The blanket fabric can remain soaking in the madder bath while you prepare your botanical composition on your fabric to be EcoPrinted.

(above) wetting out the blanket fabric in plain water first, then wringing it out well and adding it to the madder dye bath being sure to knead it well for even absorption of dye. It can be left to soak while you create the botanical composition.

7. While the blanket fabric is soaking on the madder bath, create a recycled plastic barrier (or use thick paper or fabric). Cut to shape or carefully layer and tape together smaller pieces to accommodate your fabric size. Aim to create a barrier shape slightly larger on the sides and a few inches longer on the top end in the direction of anticipated rolling.
8. Lay the barrier on your clean work surface. If your recycled plastic has ink or printing on it, you can cut another small piece of unprinted plastic to cover this area in particular to ensure no ink is transferred onto your fabric in the steaming process. Lay your mordanted fabric down on the barrier and smooth out any wrinkles. Keep your spray bottle with plain water handy if your fabric dries too much while creating your composition. Sometimes a careful spritz of plain water can help keep the fabric at the correct moisture level- especially if it takes more than a few minutes to create your botanical composition.

(above) laying out my recycled plastic barrier and my damp fabric to be EcoPrinted. A spray bottle is good to have handy if composing the composition takes longer than a few minutes.

9. Botanicals are laid down in a pleasing composition. Be mindful of which side of the leaf or flower that is touching the fabric to be ecoprinted with the understanding that the underside (vein dominant) of most leaves makes more striking prints.

(above) creating my botanical composition with saved flowers and leaves- learn the art of pressing & preserving MANY different types of plants COMING UP in a Tutorial later this year in A Year in Natural Dyes 2025.

10. While wearing gloves, carefully wring out the dye blanket, and then open and hold it up to observe any possible inconsistencies or large areas of uneven dye concentration. If you see this, you might like to put the dye blanket back into the dye bath and massage it more to even out the dye application to the blanket fabric.
    The dye blanket should be fully saturated with dye and damp but not sopping wet or dripping to avoid too much dye being carried to the background of your ecoprint.

(above) squeezing out the madder blanket making sure the dye is evenly applied and that it's damp but not sopping wet, then opening it up, slightly stretching it out in preparation to lay it down over the botanical composition.

11. A smooth application of the dye blanket on top of your botanical composition is important. You want to avoid the flowers/leaves from shifting while you lay down the blanket. This can oftentimes be the trickiest & most challenging part of the whole process because you also want the blanket fabric to be stretched slightly when it's laid down to avoid wrinkles and lumps. It can be helpful to have a partner or someone else there to help you open the dye blanket fabric and stretch it slightly and evenly as you apply it ever so carefully over your botanicals.
    If your project is larger, you can also fold the saturated dye blanket in half on a clean surface and then lay it down to the midpoint over your botanical composition, and then carefully fold the remaining blanket over the botanical composition.

(above) laying the madder blanket carefully over the botanical composition one half at a time.

*Tip: It's also possible to lay your saturated blanket down on another clean surface, and then slightly stretch it out and smooth out wrinkles, to then roll it up on a dowel. Then it can be carefully transported and neatly rolled out over your botanical composition - almost like rolling pie crust onto a rolling pin to transfer it on top of a pie.

12. ***Optional:** lay down one more barrier (advised for thin plastic) and/or padding cloth if you have botanicals of different thicknesses. An additional padding cloth (any fabric) will help cushion the whole roll and create even pressure for excellent prints. To learn much more about this padding cloth technique see my Eucalyptus EcoPrinting Tutorial and my Bundle Dyeing & EcoPrinting Workshop. Because all of my botanicals in this project are relatively flat and of the same thickness, I'm not using an additional padding cloth.
13. Roll the fabric, barrier included firmly and evenly using a stick, dowel, or length of pipe. Roll slowly ensuring there are no wrinkles, carefully stretching fabric very slightly as you go.

(above) rolling up the bundle carefully and with firm even pressure.

14. Once rolled all the way, including the extra length of barrier, secure the whole roll with tape or rubber bands to keep it together while you wrap the roll with fabric scrap, ribbon or twine.
15. Use fabric scrap ribbon, or twine (or a combination of the two as I am doing here) to firmly bind your bundle well. My Bundle Dyeing + EcoPrinting Online Workshop gives more options and ideas for variations in binding, steaming, and preparation of fiber for a multitude of options in plant printing.

(above) tape or rubber bands help keep the bundle bound together while scrap fabric ribbon and/or twine is secured and wrapped around the length of the bundle. My scrap fabric ribbon has pink madder stains from previous dye projects. Continue wrapping the scrap fabric ribbon and twine up and down the bundle until you have created a firm even pressure.

16. The bundle is steamed in a pot with a tight fitting lid for the steamiest environment possible. The steaming time for this print is 25 minutes (steam time can be longer for thicker or larger pieces of fabric and can also vary depending on whether you're using fresh or dried botanicals. A large pot needs just a small amount of water at 1-2 inches level. This way the bundle can stand on end leaned against the side of the pot so that it's not submerged in the water yet still exposed to plenty of steam. Monitor your water level as the bundle steams to ensure the water has not fully evaporated off- adding more water if needed.




(left & center left) The bundle is ready for the steamer. It will stand on end in the pot with a small amount of boiling water for approximately 25 minutes. **(center right & right)** removing the bundle from the steamer & unwrapping the twine.

17. Remove your bundle. Wait until it's cool enough to handle, unbind the string, unroll and open the blanket carefully to reveal the ecoprints and colored background!






(above) unwrapping the bundle, removing the blanket and revealing the prints **(below center right)** Note the light amount of residual dye remaining on the background of the blanket fabric- this is due to the chalk addition in the madder blanket dye bath allowing for optimal dye adhesion to the background of the target fabric.

18. Hang dry and avoid rinsing immediately. Allow the piece to dry and then rinse and wash on cool with pH neutral detergent. I often do a hand rinse and wash first and then for the life of EcoPrinted textiles and garments-cold and gentle cycle in the washing machine is my preferred way to wash. Enzyme free detergent can help prevent excessive natural dye washout.

Plants & Their Prints


(left) the botanical composition before rolling **(right)** the fabric after ecoprinting with the madder blanket

(above) Pericon -or- Mexican Mint Marigold (*Tagetes lucida*)

(above) Cannabis (*Cannabis sativa*)

(above) Susanna Mitchell Chamomile -or- Golden Marguerite (*Anthemis tinctoria*)

(left & center left) Eucalyptus leaves cut in heart shapes (*Eucalyptus cinerea*) **(right & center right)** Catalina Ironwood leaves (*Lyonothamnus floribundus*)

(left & center left) Smokebush (*Cotinus coggygria*) **(right & center right)** Santa Rosa Island Sage (*Salvia brandegeei*)

(left & center left) Orange Cosmos (*Cosmos sulfureus*) **(right & center right)** California Sagebrush (*Artimisia californica*)

/// Printing Socks

Printing socks or garments follows a similar procedure as with the 'Single Plane Composition' above but instead of one layer of leaves, two layers of leaves are employed to print the front and back of the socks in a single steaming process.
The Dye Blanket also needs to be bigger- more than twice as wide as the socks (or garment) so that it can sandwich around and envelop the front and back of the socks fully.
I suggest also preparing additional recycled plastic barriers cut to size to fit inside the socks. This is an optional step that facilitates successful printing on both sides of the socks without dye bleeding through the layers of the socks. For this project I used a creative application of eucalyptus leaves- cutting them into heart shapes for a sweet Valentine's day gift for my daughter.

To Learn more about **EcoPrinting with Eucalyptus** and exactly how I created these **red leaf prints** see my **Eucalyptus Dyeing in Every Way Tutorial.**

(above) Cutting eucalyptus leaves into heart shapes for a fun ecoprinting twist. To Learn more about EcoPrinting with Eucalyptus and exactly how I created these red leaf prints see my Eucalyptus Dyeing in Every Way Tutorial.

1. These bamboo socks were scoured & then mordanted with Mordant Process 2 with 10%WOF Alum acetate and then fixed with chalk. Socks can be printed either still damp from the post mordant rinse or if dried after mordanting, they can be soaked, wrung out and left to partially dry so that they're damp but not sopping wet.
   You may also like to scour your blanket fabric if it is new fabric (especially if it's a cellulose fiber like cotton).
2. Weigh your dry blanket fabric & determine strength of dye background color you want- Light, Medium or Dark and follow the recommended formulas to determine how much dye extract or raw dyestuff & water volume to use to make the dye blanket bath.



(left) my mordanted socks ready to be printed **(center & right)** my blanket fabric and weighing the fabric to determine how much water volume to use for dissolving the madder extract.

3. Make sure that your dye blanket bath is the correct volume- Weight of blanket times 2.5- so for example if your dry dye blanket weights 100g you want the dye blanket bath to be a volume of 250ml - this generally is enough dye liquid to completely soak your blanket with some left over liquid.



(left, center left & center right) weighing out the madder extract based on the 'Dark' background color guidelines above. **(right)** Measuring out the correct volume of water for the weight of the dry blanket fabric

4. Dissolve madder extract very thoroughly in hot water to avoid spotting or speckling of dye in the background -or- Extract madder in a concentrated manner using volume of water 4 times your blanket fabric (see more detailed water volume guidelines above). Strain dye bath if needed. ***Optional:** Just like in conventional immersion dyeing with madder, you can add a small amount of Chalk (Calcium Carbonate) and/or Tannin to the dye blanket dye bath. This is especially important if you are hoping to create a deep red or dark red background that is not orange or brown. See the Chalk & Tannin Additions section above for guidelines on how much to add to your madder dye bath. For this piece I added chalk because I wanted a balanced red color background that was not too orange in tone and because I wanted as deep a red as possible background color I also added tannin to the madder dye bath and stirred well to dissolve before saturating the blanket.
5. Wet out your dye blanket in plain water first to thoroughly saturate the fabric- this will ensure the dye is taken up more evenly on the dye blanket fabric, then wring it out very well to remove as much extra moisture as possible.

(above) adding Tannin & Chalk to the madder extract for deep red results **(below left & center left)** dissolving the madder extract, chalk and tannin. **(below center right & right)** wetting out the blanket fabric first with plain water and then wringing it out well.

6. Soak the pre-wet blanket fabric in the dye bath while wearing gloves- massage & knead the dye into the fabric well.

(above) Adding the pre-wet blanket fabric to the madder dye bath being sure to knead it well for even absorption of dye.

7. Carefully wring out the dye blanket, and then open and hold it up to observe any possible inconsistencies or large areas of uneven dye concentration. If you see this, you might like to put the dye blanket back into the dye bath and knead it more to even out the dye application to the blanket fabric. The dye blanket should be fully saturated with dye and damp but not sopping wet or dripping to avoid too much dye being carried to the background.
8. Fold the saturated blanket fabric in half and lay flat on the barrier- creating a central vertical fold line from which to open and sandwich the socks to be dyed.

(left) Squeezing out excess moisture from the madder blanket fabric **(center left)** the blanket fabric is evenly saturated with the madder dye bath **(center right)** Then folding the blanket fabric in half and laying it flat on the barrier. **(right)** creating a central vertical fold line from which to open and sandwich the socks to be EcoPrinted & dyed.

9. The variety of eucalyptus leaves I am using print well on both sides, so I don't have to be worried about which side of the leaves will be coming into direct contact with the socks. I love Eucalyptus cinerea (commonly known as Silver Dollar Eucalyptus) for their broad round leaf shape (I find mine on a tree growing down the road from me, but they're a common variety found in flower shops and grocery stores for flower arrangements world wide.) They will block some of the madder dye from the blanket while also imparting some of their natural dye to the socks. To Learn more about EcoPrinting with Eucalyptus and exactly how I created natural RED leaf prints see my Eucalyptus Dyeing in Every Way Tutorial.

(above) cutting eucalyptus leaves into heart shapes

10. Create a composition of leaves in the general shape and anticipated position of the socks on the blanket.

(above) Creating the eucalyptus leaves composition in the anticipated shape and position of the socks that will soon be laid down.

11. Prepare the damp mordanted socks on a clean surface- with knit fabrics, it is a good idea to slightly stretch the fabric and open it up before creating the botanical composition for printing. This expands the structure of the knit for more concentrated, clear prints that don't look blurry, stretched out or faint when the socks are worn.
12. Pieces of recycled plastic are cut to size- slightly wider than the socks and a few inches longer on the top end in the direction of anticipated rolling. Insert the barriers inside the socks so that they're laying as flat as possible, touching both sides of the socks from toe to opening. This prevents bleeding of dye/prints through the socks.

(above) stretching out the knit fabric of the socks to prepare for receiving the dye & cutting recycled plastic in the shape of the socks to place inside as interior barriers.

13. You may like to use a spray bottle with plain water to spritz the socks if needed to ensure they're damp (but not sopping wet) before laying them down on your first botanical composition.
14. Once you're happy with the botanical compositions, carefully lay down the damp socks over the leaves composition. Try not to move the socks once they have been laid down on the botanical composition & blanket.

(above) After composing eucalyptus leaves on the madder blanket, the prepared damp socks are then laid on top of the botanical compositions and another layer of leaves will be composed on the top sides of the socks

15. Create another composition of leaves on the top side of the socks.

(above) Another layer of leaves are composed on the top sides of the socks

16. Once you're happy with the second botanical composition of leaves, carefully pick up the other half of the blanket and fold it over the socks to sandwich them in the blanket. Use your fingers to gently nestle in the blanket around the edges of the socks without disturbing the placement of the blanket over the botanical composition.
17. I suggest adding another recycled plastic barrier on the top before rolling the socks to help keep everything in place while also providing an extra layer of protection from dye bleeding.

(left) folding the blanket over the socks to sandwich them in. **(center)** ensuring the blanket is nestled around the perimeter of both socks to have dye contact from the blanket on all edges. **(right)** adding an extra plastic barrier before rolling.

18. Roll the blanket sandwiched socks, barrier included, carefully & evenly using a stick, dowel, or length of pipe. Work slowly to even out any major wrinkles gently as you go while also trying not to disturb the placement of botanicals. Once rolled all the way, including the extra length of barrier at the end, secure the whole roll with tape or rubber bands to keep it together while you wrap the roll with fabric scrap, ribbon or twine.

(above) rolling up the bundle carefully and with firm even pressure & keeping it altogether with a few rubber bands before binding.

19. Use fabric scrap ribbon, or twine (or a combination of the two as I am doing here) to firmly bind your bundle well. My Bundle Dyeing + EcoPrinting Online Workshop gives more options and ideas for variations in binding, steaming, and preparation of fiber for a multitude of options in plant printing.

(above) Wrapping the bundle first with scrap fabric ribbon and then with twine ensuring a tight secure bind.

20. The bundle is steamed in a pot with a tight fitting lid for the steamiest environment possible. The steaming time for this project is 30 minutes (steam time can be longer for thicker or larger socks). A large pot needs just a small amount of water at 1-2 inches level. This way the bundle can stand on end leaned against the side of the pot so that it's not submerged in the water yet still exposed to plenty of steam. Monitor your water level as the bundle steams to ensure the water has not fully evaporated off- adding more water if needed.

(left & center left) The bundle is ready for the steamer. It will stand on end in the pot with a small amount of boiling water for approximately 25 minutes. **(center right & right)** removing the bundle from the steamer & unwrapping the twine.

21. Remove your bundle. Wait until it's cool enough to handle, unbind the string, unroll and open the blanket carefully to reveal the ecoprints and colored background. Carefully remove the leaves and marvel at the combination of resist and dyed areas your prints and blanket have made.

(above) unrolling, opening up the madder blanket and revealing the eucalyptus heart prints. The areas of leaf overlap are yellow with eucalyptus flavonoid dye only tinting the socks. The areas with a single layer of eucalyptus leaves are tinted orange because some of the madder dye from the blanket has seeped through in addition to the yellow dye of the eucalyptus leaves.

22. Lay the socks flat to dry and avoid rinsing immediately. Allow the socks to fully dry and then rinse and wash on cool with pH neutral detergent. I often do an ample hand rinse with plenty of cool water and hand wash

first and then for the life of EcoPrinted socks-cold and gentle cycle in the washing machine is my preferred way to wash. Enzyme free detergent can help prevent excessive natural dye washout.

(above) Rinsing and Washing the socks & the Finished socks- The areas of leaf overlap are yellow with eucalyptus flavonoid dye only tinting the socks. The areas with a single layer of eucalyptus leaves are tinted orange because some of the madder dye from the blanket has seeped through in addition to the yellow dye of the eucalyptus leaves. The stems of the eucalyptus leaves block out the madder completely.

Print Samples & Blankets

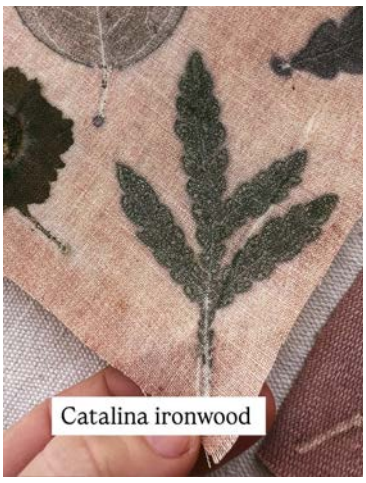
/// Modification

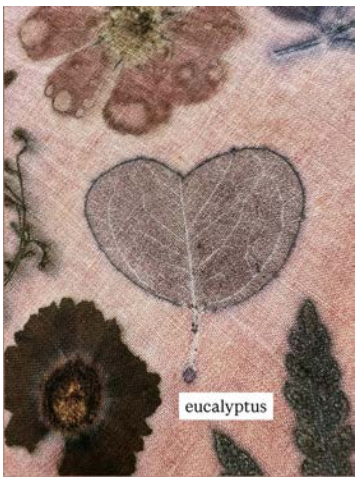
Each set of EcoPrinted fabrics/blankets in this 3 print series used the same strength of madder (medium). No chalk/calcium carbonate or tannin added to the madder blanket dye bath for these prints- resulting in a significant amount of residual dye remaining on the dye blankets. The color of the madder dyed background on the target ecoprinted fabrics is also very orange in tone because of the lack of chalk/calcium carbonate.

For the alkaline modified set- the target fabric (silk charmeuse) was mordanted (Mordant method 2- alum acetate), fixed and then briefly dipped in an alkaline solution made with water and soda ash (pH 9), and then it was immediately ecoprinted with a madder blanket. The alkaline modification changed the tone of the blanket color to more brilliant and slightly more cool in tone. The background color of the target silk charmeuse fabric suffered in tone and saturation.

For the iron modified set- the target fabric (silk charmeuse) was mordanted (Mordant method 2- alum acetate), fixed and then briefly dipped in an iron solution made with water and 2%WOF ferrous sulfate (iron salt), and then it was immediately ecoprinted. The iron modification changed the tone of the blanket color to more purple. The background color of the target silk charmeuse fabric is moodier and darker due to the presence of iron.

Including Iron in the Mordant Process
/// Linen
Mordant method: 3- Alum acetate (5%WOF) & Iron (2%WOF) (see directions above)
Blanket Dye Strength: Light
No chalk/calcium carbonate or tannin added to the madder blanket dye bath- resulting in a significant amount of residual dye remaining on the dye blanket. The color of the prints & madder dyed background on the target EcoPrinted fabric are moodier and more pronounced due to the iron.



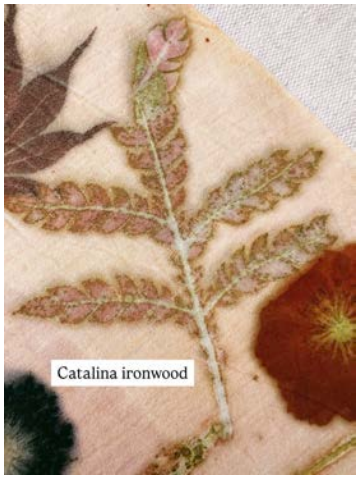


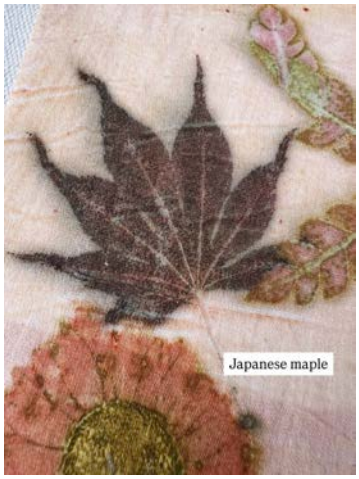
Including Iron in the Mordant Process
/// Handwoven Wild Silk
Mordant method: 3- Alum acetate (10%WOF) & Iron (2%WOF) (see directions above)
Blanket Dye Strength: Medium
No chalk/calcium carbonate or tannin added to the madder blanket dye bath- resulting in a significant amount of residual dye remaining on the dye blanket. The color of the prints & madder dyed background on the target EcoPrinted fabric are moodier and more pronounced due to the iron.

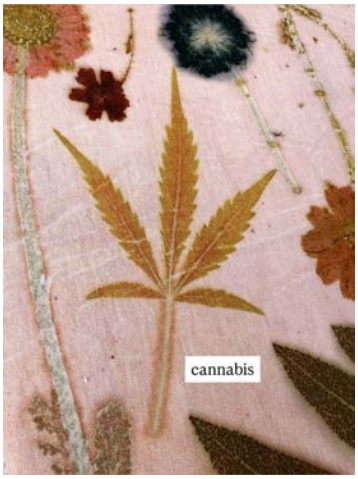





/// Organic Cotton Jersey
Mordant method: Direct Mordant (taught in my Bundle Dyeing & EcoPrinting Workshop)
Blanket Dye Strength: Light
No chalk/calcium carbonate or tannin added to the madder blanket dye bath- resulting in a significant amount of residual dye remaining on the dye blanket. The color of the madder dyed background on the target EcoPrinted fabric is a warm light pink.
Madder dye absorbed through some of the thinner botanicals including the color of the prints to be more orange such as the fig leaf, chamomile petals, Catalina ironwood leaf, Japanese maple leaf, cannabis leaf and pincushion leaf.







/// Organic Cotton Jersey
Mordant method: 2- Alum acetate (10%WOF) (see directions above)
Blanket Dye Strength: Medium
Chalk/calcium carbonate was added to the madder blanket dye bath- resulting in more dye being deposited on the background of the target fabric. The color of the madder dyed background on the target EcoPrinted fabric is a medium warm soft pink.
Madder dye absorbed through the very thin leaves of the Japanese indigo resulting in more orange prints



/// Linen
Mordant method: 2- Alum acetate (10%WOF) (see directions above)
Blanket Dye Strength: Light
No chalk/calcium carbonate or tannin added to the madder blanket dye bath- resulting in residual dye remaining on the dye blanket. The color of the madder dyed background on the targetEcoPrinted fabric is a warm light peach.
The Positive & Negative prints on the target fabric and blanket complement each other nicely.










Mordanted Blanket

/// Silk Noil (both the target fabric & blanket were mordanted)
Mordant method : Direct Mordant (taught in my Bundle Dyeing & EcoPrinting Workshop)
Blanket Dye Strength: Medium
Chalk/calcium carbonate was added to the madder blanket dye bath- resulting in a pink background color instead of an orange. Most of the background dye remained on the dye blanket because it was mordanted. The target fabric also absorbed some dye in the background creating a very delicate pink (you can see it more clearly in contrast with the back side of the fabric that has been folded up pictured below).
This process tweak of mordanting the blanket is a wonderful way to simultaneously create 2 excellent prints from one layer of botanicals while also imbuing color into the background of the prints.

Thank you

for following this tutorial and please SHARE your results with me- I can't wait to see what you create!

via email liz@thedogwooddyer.com -or- instagram @thedogwooddyer www.thedogwooddyer.com

Karis A month ago · 1 Like

Hi, if I've already mordanted cellulose in tannin + alum, should I re-do it with one of the methods here like acetate or soy milk? I also have the Bundle Dye tutorial, so I could re-mordant with direct application method?

Liz Spencer Just now ·

Hi Karis,
Yes great question. You can certainly ecoprint your already tannin/alum mordanted cellulose and likely get good results, especially of you're using ecoprinting plants who have printed clearly with saturated color for you in the past. If you're not sure about the clarity of prints from your plants, it wouldn't hurt to mordant the fabric again with the direct application mordant method to ensure good print results. Exclude iron in your mordant recipe so that you don't inadvertently change all the fabric to a gray or brown color (depending on the tannin you use) before you've had a chance to ecoprint.
Happy printing!
-Liz