

# On Printing with Botanical Printing Paste

The recipe [Tasha](#)' gave me is based on Bible of natural dyeing: *The Art and Science of Natural Dyes* by Joy Boutrup and Catharine Ellis.

Tasha mentioned to me that

*"... you can share my recipes and notes with them, as long as they have the same understanding that if they want to share my ideas more widely, they will ask me first. Also, please credit [Catharine Ellis and her book The Art and Science of Natural Dyes](#). Catharine is the one who taught me to use the dye paste with vinegar and alum included, and that book is a great resource for those recipes and more."*

1.

## Equipment + Materials

Even though they're used with all natural and edible materials, **none of these supplies or materials must be used for cooking!**

## FABRIC

- **Cotton:** Recycled light-colored sheets, white cotton, un-dyed bandanas or hankies
- **Washing soda** (also called soda ash or sodium carbonate)

## Equipment to make the dye paste

- **Large dye pot with lid** (to make dye) - preferably stainless steel
- **Tongs** - to stir fabric
- **Strainer** - with tiny holes, or use cheesecloth
- **Very small pot** (to make the dye reduction)
- **Measuring spoons**
- **Scale** - preferably with weights in grams
- **Measuring cups**
- **Spatula**
- **Tiny whisk**
- **Sifter container** - or make your own with a small jar covered with thin screen
- **Containers for the dyes**

## Materials to make the dyes and inks

- **Avocado pits** (saved in freezer or fresh) - the more, the stronger the dye
- **Pomegranate rinds** - they can be dried - the more, the stronger the dye
- **Or any other plant material:** dry mint, black tea, fruit tree bark, black beans, onion skins, marigold flowers, walnut skins, experiment with carrot tops and other
- **Vinegar** - 5% or stronger
- **Aluminum Potassium Sulphate** - to brighten and make dyes colorfast (pickling salt at grocery or gardening store)
- **A mask** for when you add the alum
- **Guar Gum** or Gum Tragacanth - for the dye paste (health food store)
- **Wheat bran** to clean off the gum the dye paste

## PRINTING MATERIALS

### To make your own small screens (or use what you have)

- **Embroidery hoop** - second hand or like at Joann's Fabrics
- **1/2 inch wide felt strip** - for in-between the 2 interlocking hoops
- **Waterfast glue** - to glue the felt
- **Silkscreen fabric** - for the screen

### For the stencils

- **A first-class (Pref. Recycled) UPSP mylar envelope**, or construction mylar
- **Precision (xacto) knife** or - my fave - Fiskars Fingertip Swivel Detail Knife if you have intricate design; or a scissors, to cut your designs
- **Cutting mat**
- **Ruler** - if you cut geometric designs

## PRINTING

- **A small spoon**
- **Squeegee** or an old credit card (I prefer <https://www.dickblick.com/products/kemper-rubber-finishing-tool/>)
- **Soft brush** (like a toothbrush for small designs) to clean stencil and screen
- **A flat layer of old towels or sheets** to have a smooth soft surface to print on. (I made a print board with plywood, layered it with vinyl, topped with industrial felt, folded the sides over, and nailed these to the back of the wood with a frame.)
- **Rags** for cleanup

## STEAMING

- Your **dye pot**
- **Heat source**

- **A wire mesh** (I use a crunched-up metal household window screen) **or a steamer basket**
- **A square piece of old towel**
- **A large piece of cotton** like an old sheet

## FINISHING UP

- **Wheat Bran**
- **PH-neutral soap** - such as *Ecover Zero Dish Soap*
- **Clothes line and Pins**
- **Iron**

## Other

- **Work clothes** and/or an apron
- **Rubber gloves**
- **An old towel or two** for cleanup
- **Drying line with clothes pins**
- **Iron**

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## Fabric Preparation

### Fabric

Re-use some old sheet, or plain light-colored cotton, or white bandanas.

### Scouring

Scouring washes out everything that is not the cotton itself. I'm always surprised to watch how the clean looking fabric still gives off yellowish water when I scour like a recycled sheet.

The following instruction on how to scour are from [Tasha Griffith's website](#). Tasha gave an excellent class in printing with botanical dyes a few years ago, which I attended. I've seen several other printing techniques, but Tasha's has been my favorite because it is simple and works! I've been grateful to Tasha ever since.

*"I adapted this method (my current favorite) from [Kristine Vejar's book The Modern Natural Dyer](#).*

- *Pour an inch or so of hot water in the bottom of your pot. Add pH neutral detergent\* at a percentage of 0.5% of your weight of fiber—equivalent to about ½ teaspoon for 500 grams of fiber or just a few drops for 100 grams. Stir to dissolve the detergent.*
- *Add enough additional warm water so that the fiber will have some room to move. Add your fiber, and more warm water to cover, if needed.*
- *Slowly bring the water up to around 180° F (just below a simmer). Many*

*sources say that boiling can damage silk, and it will felt wool. Hold at around 180° for about 30 minutes. Stir the fabric every 5 to 10 minutes throughout the process, bringing sections from the bottom to the top, and redistributing any clumps or tight areas that form, so the scouring water has a chance to get to every part of it.*

- *Take the pot off the heat, and let it cool down until you can put your gloved hands in the water comfortably.*
- *Gently rinse the fabric in a couple of changes of water at the same temperature as the cooled-off scouring bath."*

Read more [here](#) on this process at Tasha's site.

### 3.

#### Making a Dye Paste

*This process involves first **making a dye**, then **reduce the strained dye** to get a concentrate to **make the dye paste**. To make a dye, in general, soak or heat the plant material covered in water. If you use dense plant matter, make/grind the pieces small, and soak overnight. In Arizona I like to keep a glass jar with the stuff and water in the sun for a day or so - especially in summer, the water gets hot!*

## 1. MAKING A DYE

- **Avocado:** use clean pits (you can save up a lot in the freezer). Cover and heat them in water, boil for a half hour or so. The liquid turns... pink! So pretty. Crush the pits and either soak a few days, leave in the sun with the water, or simmer. Before reducing the liquid, strain it through a fine sieve or through a cheesecloth. How much? End up with like 1-2 cups dye. Rebecca Desnos, dyer and writer from the UK, has an extensive website, in which she goes into detail about dye from avocado pits [here](#).
- **Pomegranate:** Soak the pomegranate rinds (I use dried rind that I break or chop up) in hot water overnight. Simmer the rinds for an hour the next day or leave in the Arizona sun for a day in summer, or for a few days on warm days. Cool, strain, save the liquid. It will be golden yellow! (The exact shade depends on your water.)
- **Other materials:** I love walnut skins (make a very dark dark brown), dyes from fruit tree barks, and beautiful yellow and oranges from Marigolds, Coreopsis, and Snakeweed, which are quit colorfast. Experiment with onion skins - red or brown - or black tea or carrot tops. Experiment, and take notes!

## 2. DYE REDUCTION

Use 1-2 cups of the dye you made, and, in a small pan, reduce the dye water until it becomes concentrated by boiling it down.

### 3. MAKING A DYE PASTE

The recipe is again from [Tasha](#)'s instructions:

**For every 10 grams of warm liquid dye concentrate** (about 1/8 cup reduced dye - I usually make double that or more) *add*:

- **10 grams of regular 5% white vinegar** (so same amount as the concentrate - *unless your vinegar is of higher % - then do the math*)
- Stir into the warm concentrate: **0.5 gram alum** (aluminum potassium sulphate) - *don't breathe it - use a mask*)
- Add the **guar gum** - gradually, with a very small wire whisk. *It gets lumpy if you add too much gum too quickly - stir it well.* I don't measure this - but I ballpark the guar gum at about 0.5 gram, and I stop adding when the consistency feels right.

**The consistency of the dye paste:** just thin enough to not drip from a spoon or the whisk. Too thin won't work: that makes the paste run under the stencil.

**Storage:** I keep my pastes in small tightly-closed glass jars, and refrigerate. I've successfully frozen pastes as well.

**Note from Tasha:** *"You might also mention to the students that it is totally possible to prepare the fabric with a mordant and then print with a paste of only concentrated dye and thickener. After more experiments, I'm coming back to preferring that method in my own work, especially if I want a background color, which I often do."*

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### Making a Silkscreen

*You can make several hoops in different sizes. I have three small hoops - 5.5, 6.5, and a 7.5 inch. They work just fine to make a pattern on a large piece of cotton.*

### Materials

- **Embroidery hoop** - second-hand or at *Joann's Fabrics*
- **1/2 inch wide felt strip** - for in-between the 2 interlocking hoops
- **Waterfast glue** - to glue the felt
- **Silksreen fabric** (pref. 43T mesh) - for the screen

**The instructions below are again adapted from the inspiring [Tasha Griffith](#).**

**Thank you again, Tasha!**

1. Take out the inner piece of the hoop (the one without the tightening screw).
2. Cut a felt strip the length of the exact circumference of the inner hoop's outside.
3. Place glue around the outside of that inner piece and glue the felt strip onto it. Let dry.
4. Cut a square of flat screen fabric, 1-1/2 inch larger than the diameter of the hoop.
5. Center the fabric over the inner part of the hoop.

6. Unscrew the tightening part of the outer hoop almost all the way, and press it over the inner hoop and fabric. Tighten the screw as far as comfortable, then tug the fabric gently but firmly all the way around the hoop to stretch it tight. Repeat tightening the screw, and pulling the fabric smooth, until you can't get the screw any tighter and the fabric feels smooth, even, and taut enough to play drums on. Trim the edge so that there is a fairly even amount of extra screen fabric all around, making sure there's a enough to grab for later tightening. Then your screen is ready for print.
7. *Maintenance*: The screen will loosen a bit over time, and with use and washing. Check it periodically before you print, and if the fabric seems less than taut, tighten the screw if needed, and tug the fabric all around like you did when making the screen.

## **5:**

### **Making a Stencil**

#### **Material**

There are lots of materials with which to make stencils for silkscreening. I've used freezer paper, transparency oil, nylon net on interfacing, and - my favorite, discovered by Tasha: Tyvek. Tyvek is a synthetic fibers material to wrap around a house during construction. It also is the material from which are made Priority Mail envelopes. You can recycle the ones you receive in the mail and make stencils. I've used both the construction wrap and the envelopes. The construction wrap is slightly rougher, but still cuts simple shapes and prints just fine. With the envelopes you can make very detailed cuts. With either you can make many prints if you wash them off carefully with a soft brush in water *right after printing*.

#### **Tools**

These depend on how simple or detailed is your design. For the simple triangles in my finished example I just used a metal ruler and a penknife. For more intricate designs I prefer the Fiskars Fingertip Swivel Detail Knife.

#### **Design**

Keep It Simple. The trick is to make "bridges" between the areas of the design so that they are all one piece. Make some sketches in black ink, and make sure that pieces are not "floating." (See photos.)

Keep the outlines of the design about 3/4 inch away from the sides of the hoop you use.

## **6.**

### **Printing**

#### **Material**

- **A small spoon**
- **Squeegee** or an old credit card (I prefer <https://www.dickblick.com/products/kemper-rubber-finishing-tool/>)
- **Soft brush** (like a toothbrush for small designs) to clean stencil and screen
- **A flat layer of old towels or sheets** to have a smooth soft surface to print on. (I made a print board with plywood, layered it with vinyl, topped with industrial felt, folded the sides over, and nailed these to the back of the wood with a frame.)
- **Rags** for cleanup

*Practice on some scraps first. Usually the first prints are not fully clear.*

1. Place stencil where you want to print. Place the hoop on top. With a small spoon, take the print paste and put it in the screen. With the other hand hold the screen.
2. With a squeegee and some pressure, move some of the ink paste through onto the fabric. [Watch Tasha printing](#) on Instagram - check how she holds the squeegee: the angle the first time, and the angle the times after. Note how she lifts the stencil, holding the fabric down with one hand.
3. Move the screen to another place on the fabric, squeegee the ink paste, and so on.

## **Cleaning up after printing**

It's important to clean the screen and the stencil right after you are done printing. Because it is often so warm and dry here in Arizona, the ink paste sticks quickly to the screen and stencil. Have a soft brush (like a toothbrush) and place the hoop and the stencil in water, and clean them. DO NOT leave the hoop in the water - the wood may bend. Use a towel to lay the hoop on, and with another towel piece pat-dry off the screen, so you can use it again with another stencil in another color. Lay the stencil on top of a dry towel, blot it dry with another dry towel. I place my stencils in between paper (like newsprint) and under a book to keep them flat. When you are done printing, let the ink paste dry - I hang the fabric on a clothesline. Actually, as most often with botanical dyes, the longer you keep the ink on the fabric - the longer you wait to the next step - the stronger will be the dye. It's called *curing*. I usually wait at least 24 hours if I'm impatient.

## **7:**

### **Setting the Dye**

1. Put a wire mesh (I use a crunched-up window screen) or a steamer basket in the large dye pot. *Photos above*
2. Add water - watch that there is at least an inch between the water and the fabric. There must be NO water touching the fabric or the printed paste will

bleed.

3. Cover the top of the pot with a towel: lay down a square piece of towel, put the top over it with handle on top; fold the four corners of towel through the handle, and secure with a safety pin. This ensures that no condensed water drops down and wet the steaming fabrics.
4. While the water heats, lay the printed fabrics side by side on a large piece of light colored fabric. Lay another steaming cloth on top to sandwich the printed fabrics. Coil up the fabric and turn into a doughnut, open the lid, place the fabric roll on top of the screen or the steamer (see *photo below*):
5. Close the lid, and let the water steam vigorously for 15-20 minutes.
6. Turn off the heat. Keep the top closed.
7. Let the pot cool down (at least for 1 hour).
8. Take the bundle out and unroll it. Hang the fabrics on a line to dry.

## 8.

### Finishing up, dunging

The wheat bran bath dissolves the gum and deepens the printed colors.

- Start heating water in a dye pot - enough to submerge the printed fabrics.
- Make a wheat bran "tea:" Pour boiling water over a handful of bran - (1/2 cup bran for 100 grams of fabric to be boiled.)
- Let it sit for 15 minutes or until the bran settles to the bottom.
- Pour the wheat bran solution above the settled bran into the pot - ok if some bran pieces come in with it.
- When the water with the bran is boiling, add the printed fabrics. Stir to prevent color transfer between the printed areas. Boil the fabric in the wheat bran bath for 15 minutes.
- With tongs, lift the fabrics out.
- Rinse in lukewarm water.
- Hand wash and hang dry.
- Iron - make sure the fabric is no longer stiff with the gum - re-wash it in a bran bath if not soft and flexible.

## 9.

### Resources