
Natural Dyeing: A 2-Part Series with A Verb for Keeping Warm

Chapter 1 - How to Dye Silk and Other Protein Fibers

Overview

(gentle guitar music) - Hi, I'm Kristine Vejar, and I'm a natural dyer. The idea that you could dye fabric with plants was completely fascinating to me. In this class, I'm going to teach you how to make a naturally dyed silk scarf. First, we will identify the type of fiber we're going to dye, and then we're going to weigh the scarf. And we will be using logwood to make a beautiful shade of purple. Natural dyes are an amazing way to work with nature and plants and make beautiful colors upon cloth.

Materials

- A lot of the tools you're going to use to natural dye are available at your local hardware store. You can even get them at rummage sales, but the really important thing is that you have a set of tools that you use only for natural dyeing. You don't want to use the pots in your kitchen for natural dyeing. You want to keep those separate for food. One of the tools I find most useful is keeping a journal of your natural dyeing process. It's where I record things like the dye that I use, the type of scour I use, the mordant, things like that. Rubber gloves, measuring spoons, a thermometer, liquid measuring cup. I like to use these smalls whisks to dissolve my dye. And then we have tongs. This is the mordant, aluminum potassium sulfate. This is the dye. We're going to use log wood today. A pot with a lid, a timer, liquid dishwashing detergent. I like to use ecover. A scale, a bucket, and a silk scarf, which is what we're going to dye today. You're also going to need access to water and to a heat source. The kitchen works really well for that, as you have a sink and you have a stove.

Weighing and scouring goods

- One of my favorite tools is an apron. Sometimes you can get dirty during this process, so it's nice to throw one on before you start. We're going to start working in our dye journal, and always at the top, I write what my project is. So I wrote silk scarf for mom, and then I have here, kind of the different steps that I'm gonna be going through, through the day. So the first one is fiber content, so I know that my scarf is silk so I'm going to write 100% silk. Knowing the type of fiber that you're going to be dying is very important in the process, as it's going to guide you through the dying process. And then from there, we're going to go and we're going to weigh the silk scarf. I have my scale turned onto grams, I work in metric, and then I'm going to go and put my scarf on and it says 10 grams. So I'm gonna come back to my journal and I'm going to write 10 grams. Now we're going to move onto the scouring portion of the process. Scouring's really important because it also means pre-wash and it takes away any kind of residue that's on the fabric during the milling process, so things like starches, we want to be able to get the best color possible when going to dye. In order to do that, that means removing any of those kinds of residues or starches. So the first thing I do, is I get a bucket with some hot water and I add my silk scarf to the hot water to prewet it. And mines been soaking for about 10 minutes, you could let it soak even up to overnight, the point of the matter is, is that we just want it as thoroughly wet as possible. What I wanna see is the weight of the silk that I'm gonna dye today and that's 10 grams. I'm going to use that weight to base the amount of scour that I need to use, scour is soap. In our studio, for every 500 grams of fiber, we use a half teaspoon of scour. As we know, the difference between 500 grams and 10 grams is kind of a lot, but

that's okay, we're just gonna take a sprinkle of scour and we're gonna add it to this pot of water. I'm still gonna use the half teaspoon in order to just kind of give me a visual benchmark when weighing out this soap. And then I'm just going to add the soap to this pot of water and I'm going to sprinkle it around, kind of stir it a tiny bit, tap it, and set this stuff aside. And then, I'm going to take my silk scarf from this pot, this bucket of water here and I'm going to add it to the pot of water. This water is luke warm. And I wanna make sure that the scarf is, kind of, thoroughly in here and the soap has a way to, kind of move around the fibers a little bit. I'm going to come back to my journal and in the scour portion I'm going to write 'ecover', which is the type of soap that I used and I'm going to write 'a dab', (laughs) since that what we used to scour since we're only at 10 grams. One thing to know is you can do multiple scarves at once, so we would just add a little bit more ecover. In terms of the pot size, we could probably add two more scarves to this and be okay, but if we added more than that, we'd wanna go to a slightly larger pot size. It's really important that the water can flow freely around the fabric while it's being washed. The next step in the process, we're going to now heat this. Put this on the stove, turn the heat on. It's gonna take about 30 minutes for it to get up to 180 degrees. And then we're gonna keep it at 180 degrees, so just right under simmering, for 30 more minutes. While it's on the stove, you're gonna wanna take your tongs and you're going to, kind of, rotate the fabric about every 10 minutes, kind of from top to bottom. And then once you've reached that, kind of hour mark, you're going to turn off the heat and you're gonna let it cool.

Mordanting goods

- We've finished the scouring process. I let it cool. And now we move on to the mordanting process. I've taken my scoured scarf out of the pot, and I'm going to rinse it in some clean water that I have in this bucket. (water dripping) Gonna let it rest over the side here, 'cause i'm gonna prepare my mordant pot. So I refer to my journal again. The weight of the scarf is going to once again help me determine how much mordant I'm going to need. So mordant is a very important part of the natural dyeing process. The mordant is what attaches to the fiber, and the dye attaches to the mordant. The mordant we're using today is called aluminum potassium sulfate. Again, in the studio in general, we use about one tablespoon of mordant to 100 grams of goods. Reflecting back on the weight that we're working with today, 10 grams. So I'm gonna use my one tablespoon to help me eyeball. So if I think about it, it's this big, 10 grams. It's going to be about 1/10 of a tablespoon. The one thing to know is that mordant helps with lightfastness. So we definitely wanna have it as part of the process. And we don't wanna do too little, because it can make a color fade. But we also really don't wanna do it too much. So we wouldn't wanna do a tablespoon or a 1/2 tablespoon at this time. And knowing that we're at 10 grams, what can happen is the fiber can kind of feel brittle or sticky if you over-mordant something. And I have about a 1/4 cup of very hot water. And I'm going to pour that in, and take this small whisk and dissolve it. And once it's dissolved, I'm going to add it to my pot of water. As we can see here with my pot, I didn't measure out the water very precisely. The most important thing in the mordanting and scouring steps is to have enough water in here for the good to float very, very freely. The mordant will find the fabric and it will attach to it. From here, now that I have my water, my mordant, my scoured scarf, gonna add that to the mordant bath. I'll just use my whisk to kind of set it in there. Now this is gonna feel very similar to what we just did in the scouring process, where I'm going to take this pot, I'm going to put it on the stove. I'm going to turn on the heat and bring it up to 180 degrees once again kind of over the course of 30 minutes. And then once we get there, I'm going to hold it for about 45 to 50 minutes at 180 degrees. Bringing it up to that temperature makes sure that the mordant attaches to the scarf in the most permanent way

possible. I'm gonna make sure that I turn it every 10 minutes with my tongs kind of from top to bottom, make sure that the mordant is circulating really well around the scarf. And then I'm going to turn off the heat, and I'm going to let it cool.

Selecting a dye color

- This is the part where it's really fun, 'cause you get to start dyeing and playing with colors. I'm really glad that we go through the prior steps because it sets up the fabric, but this is the fun part. In my book, *The Modern Natural Dyer*, what I did is I went and I created shade cards. And so one of the kind of learning curves and fascinating aspects of natural dyeing is that each plant has a different amount of pigment within it. You know, it can take a little bit of time to learn how one plant differs from another. So I went to create this shade card to kind of give you a leg up in that process. The shade card here, you have wool and you have silk. And so today we're going to focus on the silk because that's what we're using to dye. And what I did was I made three values, light, medium, and dark, by changing the amount of dye that I used. However, in order to get these three different values, I restricted the amount of fiber I use to 100 grams per dye pot, and the amount of water I used, eight cups per dye bath. For this project, I thought that I would pull four of my favorite shades off of the shade card and focus in on them to design the color I want to use today. The first dye that I like a lot is like quebracho red. It grows as a tree in Central America. The next dye is called weld. This a green leafy plant. It grows in the dye garden. And then we have madder. It's kind of orange red color. This comes from roots also grown in the dye garden at the store. And then we have logwood. This beautiful purple color also comes from a tree in Central America. I like to show these kind of plants and wood shavings to give people a sense of where the dye comes from. That said, today we're going to use this powdered extract, which is very concentrated form of these plants. And it also makes the process of dyeing a little bit faster. My mom really loves the shade purple, so I'm deciding today to use this purple logwood sample to guide me in the dyeing process. Even though I'm using purple today, just know that you can use any of these dyes in your process. Also, in terms of finding the dye, the dyes that I'm using and that you see here are all widely available online. They're also available at my shop, *A Verb for Keeping Warm*.

Dyeing a scarf

- I have now mordanted my scarf. It has come down to room temperature. I've put tap water in this bucket that's clean. And I'm just rinsing out the excess mordant, squeezing it. And I'll let that hang out here for a moment. In the dying process, water can make a difference in terms of the amount of water you use and the color that you get. Today we're going to use eight cups of water and I've chosen that amount because I think the silk scarf can float really freely and nicely in here. And I've put seven cups of water in. I'm going to put now my eighth cup of water. The water in this pot is room temperature. It's from the tap. Now we know we're gonna use logwood as the dye. I'm gonna come to my dye journal. I'm gonna write in logwood. Referring back to the weight of my scarf, once again, 10 grams. In order to get this shade of purple, I used 1/4 teaspoon. All right, that's on 100 grams of fiber though. So now that we only have 10 grams, I'm gonna take 1/4 teaspoon as kind of my point of reference because really I only want about 1/10 of 1/4 teaspoon. So a sprinkle. I've added 1/4 cup of very hot water to my liquid measuring cup and then the dye. And now I stir it to dissolve it. And then I pour it in my pot. And then this light lavender color you see here, it's gonna be pretty close to what the color's gonna be once we're done dying and the scarf is dried. From here the pot is gonna go on the stove. And as it's heating, it might get a little bit darker, but then

once you wash it and you hang it to dry, it'll dry a couple shades lighter. The thing that's great about is, during the dying process, if you wanted to, you could dissolve a little bit more dye and you could add it to the pot and make your scarf a little bit darker. Remember to record the amount of dye you use. It might seem kind of silly that we're going to go and put this very small amount of scour, mordant, and dye, record it, but it's actually a very important part of your process to be able to understand why you get the colors you get when you get them, and if you ever want to go back to recreate the same thing that you once made. Now that we have the dye pot ready, from here I'll take the pot and I'll put it on the stove. And we've done this now twice, so you're probably getting pretty good at it. We're gonna go and turn the heat on and raise the temperature to 180 degrees, again, over the course of 30 minutes. You're gonna be turning it every 10 minutes with your tongs and you're going to leave it at 180 degrees for 45 minutes to 60 minutes. And then once you've done that, you're gonna turn the heat off and you're gonna let it cool, come down to room temperature. And then we'll go to the washing process.

Rinsing dye

- Here we have our scarf, it's been dyed, it's very exciting. We've got a great purple color. Now we're gonna wash it, rinse it out. This is a bucket of clean, luke warm water. Toss this slightly in here, you're gonna notice that there's not a lot of dye coming off of the scarf and that's totally okay. That just means that the scarf has absorbed all of the dye in the pot. Gonna wring it out as best as I can and then I'm going to hang it up over my shower curtain or if you have a clothes line outside, or a drying rack and let it air dry. Here we have the beautiful purple silk scarf that we dyed together. Coming back to the shade cards that we started with, where we looked at the different colors on silk, I've also laid down some of the shade cards that are wool. This is why it's so important for you to recognize the fiber type as well as record it in your journal, and to understand the kind of different ways that dye responds to the fiber. So for Logwood you can see this was a quarter teaspoon, this is a quarter teaspoon on wool fabric, wool yarn, the color is darker. Wool takes things more saturated. The same goes for Weld, when we get to Madder something kind of interesting happens, where it goes more of a coral color. So even the color can change based on the type of fiber that you're dying. And then Quebracho red brings it back again. Quebracho red I think is pretty similar on the wool as well as the silk. I created a couple more samples of silk scarves for you, so that you can have more samples and examples that you could create on your own. This one for instance is where I used the same amount of dye that I used today, but instead of putting the entire scarf in the pot at once, I put only half of it in the pot, I let it heat for 20 minutes, and then I put the rest of the scarf in. And that gave me two different colors as you can see here. And then for this scarf, one of the really amazing things about the shade card, is that you can also use these different amounts of dye and you can start combining them to make new colors. Funny enough plants don't really make green on their own, you have to make that by combining dyes. So, in order to make this green, I combined this purple with this yellow, so Logwood and Weld, a quarter teaspoon and a quarter teaspoon, poured it in the pot, added in my scarf, and I got green. At first glance natural dying can seem to have a lot of steps. It might look a little overwhelming. However, from today's class, you can see that it's pretty straight forward, it's not too hard and it makes great gifts, a great weekend activity, there's a lot of different options and possibilities for you, you can combine many dyes in one pot, many scarves in one pot, experiment, keep a dye journal, create your own shade cards, create a practice.

Chapter 2 - How to Dye Cotton and Other Cellulose Fibers

Overview

(relaxed acoustic music) - Hi, I'm Kristine Vejar. I'm a natural dyer, and I just completed my first book, *The Modern Natural Dyer*. In it has all of the steps to create your own natural dyeing practice. In this class, we're going to work with cotton. I'm going to teach you all of the basics of natural dyeing on cotton socks. We're going to prepare the socks for the dyeing process, this means we're going to scour them, mordant them, and prepare a special bath to dip them in, and then we get to the fun part, the dyeing part, where we apply color to the socks. From there, we're going to wash them. And then you get to wear them. (relaxed music)

Materials

- If you already made the silk scarf, you may have some of these tools already. I'm going to come, though, and I'm going to point out the stuff that's new on the table, as well as the kind of everyday rigamarole of dyeing tools. We have the natural dyeing journal, where we're gonna write, kind of, the different amounts that we use during the process. There's a thermometer. There are tongs, rubber gloves, measuring spoons, the whisk, liquid measuring cup. Of course, socks 'cuz that's what we're gonna dye on today. You can buy fresh, new socks, but you can also use socks you already have, that you've been wearing, that you want to make a new color or refresh little bit. A timer, scale. Now the things that are different would include this, a sieve. We're gonna use this with the wheat bran. And then we're gonna use madder, natural dye and extract. The mordant, which is aluminum acetate. The scourer we're gonna use today is soda ash. The dye and the mordant can both be found online. They can also be found at *A Verb for Keeping Warm*. And the soda ash you can find at the hardware store. It's also known as washing soda, and the wheat bran I get at the grocery store. And then of course, a pot and a lid and a bucket. Last, you're gonna need access to water and a sink, as well as a heat source, like a stove.

Scouring goods

- Our first step is to take the socks and to weigh them. Just gonna set those on the scale. They come out to 66 grams. So, I'm writing this in my diet journal, I've already started the project, I wrote, socks for Adrienne. And the fiber content, is 100 percent cotton. In the studio, for every 100 grams of goods that we are scouring, we use one in a quarter teaspoons of soda ash. Today, the weight of our socks 66 grams, it's about half of that. So, I'm going to do half of the amount I use in the studio, which will be three quarters of a teaspoon. There we have about three quarters of a teaspoon. I've put a quarter cup of very hot water in the liquid measuring cup. And now I'm going to use my whisk to dissolve the soda ash. In my pot full of water, I'm going to add the dissolved soda ash. This water is tap water. I didn't measure the water, I put enough in here so the socks could float freely. From here, I'm going to put the socks in, push them underwater a little bit. And then I'm gonna come back to my journal and make sure I write the type of scour that I used, which is soda ash, and I'm going to use the amount, (5 second pause) in there as well. From here, put this pot on the stove and turn the heat up and you want to heat it to 180 degrees. It's very important at this time to keep the pot on the stove at 180 degrees for an hour. That is what's going to help remove the waxes that are in the cotton. You could even keep it on heat for two hours and it wouldn't hurt it. While the socks are heating, use your tongs and rotate the socks in the pot. Then, once you've had the socks overheat for at least the hour, you can turn off the heat and let the socks come down to room temperature.

Mordanting goods

- I've scoured the goods, I let them come down to room temperature, I have a bucket with lukewarm water in it, it's clean water and I'm going to rinse the socks in that clean water. And let them sit and hang out here for a moment while I prepare the mordant. The mordant I'm going to use today is aluminum acetate. Why I use this mordant specifically for cellulose is because it gives the clearest colors and the colors that come have the most saturation as well as it has really great lightfastness properties. In the studio I use two teaspoons to every hundred grams of fiber that I'm dying. Since we're working with 66 grams today, I'm gonna use about half that amount, so one teaspoon. I've added a quarter cup of very hot water to my liquid measuring cup. Take my whisk and make sure that this is fully dissolved. And then I'm going to pour it into this pot of water. Again just like scouring, I did not measure the water I put in here. I put the amount of water in here where I thought the socks could float freely. Set those in, duck them underwater. The water in this pot though is very hot tap water. I'm going to put a lid on here to keep the pot warm. Unlike the silk scarf class, when we were mordanting, the cotton socks are gonna go in this pot and they do not need to be brought up to heat. Instead it's just going to sit on the counter in this pot for the next two hours. It can sit in the pot for up to 24 hours and the longer it stays in the pot, the better for lightfastness.

Wheat-bran bath

- Another unique part of working with aluminum acetate as your mordant, and cotton, is that we have this kind of added step where we make a bath. I have wheat bran, and I've measured it into one cup. I've taken my pot to use as a vessel, and I've put 10 cups of very hot tap water in here. I'm going to pour the wheat bran into there, and using your whisk to combine the wheat bran with the water. Let this sit for five minutes. The reason I use a wheat bran bath is when I use aluminum acetate as the mordant, what I want to do is remove any excess mordant that are on the socks, and the wheat bran bath does that. That way, when I go to dye, the dye adheres to the mordant and to the sock, instead of to the excess mordant that I'm going to wash off in this pot. While I wait for the wheat bran bath, I'm going to record my information in the dye journal. So, I'll put down wheat bran and 10 cups of water, one cup of wheat bran. (water pouring) So I just pour the wheat bran bath through the sieve. Gotta try to get as much water out of that as possible. Now I'm going to take my mordant and socks and put them in this hot wheat bran bath. I'm going to move them around really well, so the wheat bran bath can really cover them (water sloshing) I really like to use wheat bran on knit fabric (water dripping) specifically. Okay, so from here, we're going to proceed to the dyeing process.

Shade cards

- Now we get to the fun part, playing with color. I've put my apron on. In my book, I've created a shade card for cellulose based fibers. It's broken down into linen and cotton. Then, the next step it's broken down to is back to that bath that we just did. So, we just did wheat bran, but there is another option, which is a bath made with chalk. These two baths can influence the color as you can see here with cochineal. The pink used here because of the chalk bath, is a little bit more vibrant and saturated than the pink you see with the wheat bran bath. Today, we're gonna use matter. Adrian loves red. She's gonna have these adorable little red socks. So, looking at these a little bit closer, you can see this one was made with wheat bran, this one was made with the chalk bath. And you can see a slight differentiation in color. This one's a little bit more dusty. This one a little bit more

clear. Then, I also went and pulled the linen samples. So, you can see the cotton versus the linen, here, and here, and here. Cotton and linen. I really like to use the wheat bran bath when I work with knit fabrics. The reason why I say that versus the chalk bath is because the chalk is very very fine. It has a slightly higher PH. It makes it a little bit more astringent. So, when I work with knit fabric, and I use the chalk bath, I can really feel the difference in the texture of the fabric. When it comes to wovens, I enjoy using both the wheat bran bath and the chalk bath. One of the kind of tricky things about working with cotton is that it's not quite as responsive to the changes in dye as silk and wool are. For this pair of socks, I used weld. Then, for this pair of socks, I used matter with the wheat bran bath of course. But, then what I did was I combined and made a new dye pod and I combined the matter and the weld. I put these socks in. So, they're slightly orange. Then, 30 minutes into the dyeing process of these, I added a brand new pair of white socks, so this soaked up the rest of the remaining dye in the dye bath. They're slightly lighter. Then, these were cooking still at the same time. 30 minutes into this dye bath, I added these socks. That's why they're slightly pink. Finally, I have the socks over here which are made with cochineal. I encourage you to go to the shade card and to combine different dyes that you see on there. All the different colors coming together, making new colors. Also, in that kind of pot that I'm using today, you can probably fit at least two if not three pair of socks in there. So, you could essentially build three shades of color and three pair of socks in one pot.

Dye pot

- We're gonna go for a shade close to this, though because my socks are more like 60 grams instead of 100 grams which is how I achieved this shade, I'm going to use half the amount. So about a half teaspoon. Of matter. I've put about a quarter cup of very hot water in my liquid measuring cup, take my whisk and dissolve this. And then add it to this pot of water. The water in this pot is tap water, lukewarm, there are eight cups of it in here. In the dyeing process I have to pay attention to how much water is in the pot, the more water there's in the pot, the lighter the color will come out. 'Kay. Then I'm adding the mordanted socks from here I'm going to put this on the stove, turn up the heat, and I'm going to heat it to 200 degrees for about one hour. Again if you want to leave it on a little bit longer to an hour and a half or two hours, it will only make the socks more light fast. I'm going to write down the amount of dye I used, which was half teaspoon and the dye matter extract. From here I'm going to take the pot, I'm going to put it on the stove, turn the heat on to high and I'm going to heat this up to 200 degrees for one hour. It's okay to leave this on for even an hour and half to two hours, the longer you keep it on the more light fastness this will have. In addition to that you know right now the matter and the water in here looks very brown, very orange. As it hits the heat, and the heat warms up the pot, this color's going to go red. It's a really amazing thing to kind of watch happen. While this is cooking and about every 10 minutes, sometimes even five, I continuously turn this to make sure that the heat is hitting this evenly and the red is as evenly distributed as possible across the socks. Once I've heated it completely for an hour and I'm done heating it, then I turn off the heat and at that point I let the goods come down to room temperature and then I start the washing process.

Rinse

- Okay we have dyed the socks and now I'm trying to squeeze out as much dye bath as possible, and I'm going to move on to rinsing them. So I have a bucket here full of cool water and I'm gonna wash out any extra dye. The great thing about working with cotton - these socks are an example -

are that I can release the excess dye into this bucket but then I can throw these into my washing machine with a load of laundry. So I would just put this like colors and doesn't matter what temperature you wash it on, and that will wash out any excess dye, and you can wear them. Here we have the newly dyed wet socks. So there's so many opportunities and options for you to work with natural dyes as we can see here from this collection. We have the wet socks we did today. These are the socks that I did in my studio in the same process, except halfway through I added these socks in the dying process, so you have two shades from one pot. So going forward you could always add more socks to your pot and get more shades, you can work with other dyes from the shade card, you could combine dyes together to get new colors; so many possibilities. Now that you know the basics of natural dying, both on protein based fibers like the silk scarf and cellulose fibers like cotton socks, there's so many opportunities for you to explore. You can continue to look at the shade card and pull dyes off of it in order to get more colors, you can combine dyes together. I am so excited for you to delve deeper into your natural dying practice.