

型染めの旅

Journeys in KATAZOME

with John Marshall

SOYMILK



First Edition, July, 2020

All work contained within, unless otherwise noted, is owned and/or copyrighted by John Marshall, 2020.
You may not reproduce any portion of this body without written permission from the author.

Please read before you begin...

This file may be viewed and all links accessed while online. However, I'd recommend that you download this file to your desktop for regular use. It's a bit memory intensive and downloading it may help you save a little time whenever you want to read it.



When viewing from your desktop, you may prefer to view it in *two-page format*.

You may set your view preferences by clicking *view* in the Adobe Reader menu, then *page display*.



I'd also like to recommend that you print out a copy to use when you are away from your computer.

Welcome to the World of Soymilk

This program is designed to guide you through the basics of taking advantage of all that soy-milk has to offer you as a dyer or person working with natural fibers.

The layout for each section is arranged to allow you to both skim and delve deeply into the subject matter. Simply click on the topic you would like to visit, as listed in the table of contents. Each section covers a specific concept, with sidebars to illuminate interesting details, offer suggestions, or warn of potential problems or risks.

The meat of the subject is presented in black text, with interesting side notes in **brown** type and helpful hints in **green** type. **Blue** type indicates a link to a section with a definition or supplemental information. *Italics* indicate a word that may be unfamiliar or is being introduced for the first time, or is a Japanese word.

Various icons appearing on these pages



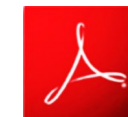
A tip is exactly that. It appears next to the relevant set of directions and is information that may make that particular step easier, or help give you better results.



The vid-cam icon indicates that there is a movie clip available relating to the subject matter at hand. Simply click on icon while viewing this file and you will be linked to the video hosted on Vimeo. Some of the larger files may take a moment to begin playing after clicking.



A button may be found at the bottom of each page. Click it to take you the to the Chapter Table of Contents for this particular chapter. If you are approaching this art form for the first time, you may want to allow yourself to wander through the various pages to get a sense of how the information is presented. If you get lost, click on this button.



The text file you are reading now should have opened in Adobe Acrobat, unless you're reading a hard copy. If you aren't already familiar with the Adobe Acrobat, you may want to click on the red icon to the left. I've gone over some of the basics as they relate to viewing this lesson.



Be sure to visit John Marshall's website for updates, lists of classes offered, and access to supplies required as you explore the gratifying realm of *katazome*.



www.JohnMarshall.to
John@JohnMarshall.to

Acknowledgments

In 1978, shortly after my first visit to Japan, I became involved with a wonderful group of people in Sacramento who came together to form a learning environment for their children centered on Japan and Japanese American experiences, Jan Ken Po Gakko. I co-taught the fourth and fifth grade with a delightfully creative parent named Naomi Goto. We became fast friends and it was through her initial encouragement and willingness to take classes from me in *katazome* that I began to seriously address compiling what I had learned in Japan.

More people than I can count have encouraged and supported me along the way. In particular Pamela Pasti and Sachiko Taniguchi. Pamela got me to seriously consider the possibility of publishing for the first time and has continued to keep tabs on my progress; and Sachiko has always been my most encouraging cheerleader in Tokyo. To you both, my deepest gratitude.

Others have supported me through inspiration, and here, I would especially like to mention the late Dorothy Miller, Susanna Kuo, Rowland Ricketts III, Betsy Sterling Benjamin, and Ina Kozel, each of whom is an inspiration to Westerners delving into the world of Japanese dyeing.

Last, and perhaps most important, I would like to thank my long suffering students from whom I feel I learn so much.

And where would I be if it weren't for the kindness and patience of my *katazome* teacher, the late [Matsuyo Hayashi](#)? She put up with my clumsy ignorance and managed to overlook my shortcomings in her generous efforts to pass on her love of *bingata*.

After more than thirty years of tending, I can see my little twig of a project has grown into more than I ever imagined.

A special thanks to Mom and Dad for all their love and encouragement.

Copyright John Marshall, 2020
Produced on an Underwood typewriter, the first MAC Apple, MAC II, MAC G4, and an iMAC, primarily using Nisus, Word, Photoshop, and InDesign.
All photos and text are by John Marshall unless otherwise stated.

Published in Covelo, CA, USA, through St. Titus Press,
Protecting the Ignorant against Free Thinkers

soymilk

Table of Contents

Title Page
Welcome.....3
Acknowledgements.....4
Basics.....6
Introduction.....7
Why Soy?.....8
Making Soymilk.....10
Basic Recipe, Whole Beans....10
Basic Recipe, Soy Flour.....13
Supermarket Soymilk.....15
Preparing the Yardage.....16
Scouring.....16
Sizing.....18
Dipping to Apply.....18
Sizing Yarns.....20
Applying With a Brush....21
Working with Indigo:
Direct Application vs
Vat Dyeing.....22
Working with Dyes.....26
Soymilk as a Binder.....26
Applying Dyes.....26
Steam-Setting Colors.....27
Hand Painting With
Soymilk.....28
Treating Fabric With
Soymilk.....30
Soymilk as a Protection Against
UV Damage.....31
Finishing Up.....32
Curing the Yardage.....32
Final Washing.....34
Postsizing/Finish.....35

Additional Information

Commonly Asked Questions.....36
Helpful Traditional Tools.....37
Japanese Hina.....39
Setsubun.....40
Supplies and Equipment Used in This Section...41
Movie Clips.....43
Helpful Hints When Using Acrobat.....45
Keyboard Shortcuts.....46
Original Salvation Through Soy.....47



Movie Clips



Keyboard shortcuts
and helpful hints
when
using Acrobat with
these lessons.

Basics

Most of us are familiar with soybeans. We enjoy them in the form of *tofu*, crackers, soy sauce, and *edamame*—the in-the-pod beans served with coarse salt in many Asian restaurants. But did you know that soybeans could also be a textile artist's best friend?

Just how soymilk aided the dye process was never explained to me when I was apprenticed to my dye teacher, other than having it mentioned that it worked as a binder. Oh, but it does so much more than that! In this section I would like to share with you the results of over forty years of research and experimenting

I've done in the course of my career. I hope you will find this protein to be as useful as I have.

It will help you a great deal to understand the nature of soymilk, and in doing so, acquire the ability to quickly figure out the answers to questions as you develop your own relationship with this medium.

The United States produces over 60% of the world's soy and has blazed new trails in soy-related research. One area however, adhesives, has been the domain of Japan for many hundreds of years.

Soy is very high in both protein (among the highest of all beans at 40%) and oil (20%) making it the ideal adhesive base for a variety of materials. Within the traditions of Japanese textile dyeing, soy, in the form of a liquid, has served as both a pigment binder and a sizing.

Once applied properly, soy does not wash out of the fiber. On a microscopic level, it forms a physical bond by entangling itself in the rough surface of natural fibers. As it cures, it oxidizes and shrinks, cutting into and becoming part of the strand. It forms a polymer partnership with the fiber enhancing many of the desirable qualities of silk and cotton, often improving the hand.

As sizing, it serves to stiffen the yardage by temporarily gluing the cross points in the weave together. This paper-like quality acquired by the cloth helps to prevent wicking, allowing for much greater control in both printing and hand painting. The soy is also a very dye-hungry medium, absorbing at least as much color as the fiber itself.

The soy may be applied to silk, wool, cotton, linen, or any natural fiber, including rayon. Modern microfibers may also be used—their rougher surfaces designed to mimic natural fibers give the soy something to hold on to.

Regardless of the qualities of the fiber to which it is applied, the soy itself retains its plant-protein personality. Many synthetic and natural dyes are considered fiber specific. However, when sizing with soy, the plant protein becomes the main determining factor, eliminating many of the differences.

In addition to performing as an undercoating to dyes, soymilk will also act as an adhesive for topical colorants such as natural pigments. Rust, oxidized indigo, and many other pigments are easily painted directly onto the yardage by first mixing them with soymilk. The soymilk binder forms a link with the sizing, encapsulating the pigment. If applied properly, the soymilk-adhered pigments will resist crocking and even have a limited amount of enhanced resistance to fading due to UV light exposure.

Soymilk may be steamed if the dyes being employed call for such. However, steaming neither helps nor hinders the bond of the soy with the color or the fiber. The best, and only way to develop the soy properly is to simply let it sit and oxidize. In Japanese, this is referred to as *nekasu* (寝かす), to “allow to sleep.” In a dry, moderately warm environment, it will take only a few weeks for the soy to complete its cycle.

Soy is very vulnerable when first applied. Rinsing it too soon will simply cause the soy, and any dyes it has absorbed, to wash away. Handle it roughly, and the sizing will lose its ability to retard wicking. Wait too long, and its ability to inhale dyes will diminish as the

protiens cure. With this in mind, it is best to complete all dyeing as soon as possible after the sizing has dried, while the soy is still very receptive to being stained–followed by allowing it to sit for as long as your patience and deadlines allow–giving the proteins time to contract.

The soy loses its vulnerability to being stained (dyed) as it hardens and as a result becomes very soil resistant. As a polymer, it now has a limited degree of memory. If you store it flat (wrinkle free) during its long slumbers, it will remember flat and be very wrinkle resistant.

While it won’t cure male pattern baldness, or compete with Viagra, it is truly one of the wonder plants of the dye world.

Why Soy?

There are many natural sources for binding agents to be used with colors. Some of these are oil, egg white, milk, gelatin, latex, *warabi*, *zenmai*, *konyaku*, rice, wheat flour, and other albumen containing products (products high

in protein content). Soybeans are the most readily available and when dry have the good grace to remain transparent and flexible, along with the added characteristic, once cured, of not later dissolving in water.



A sampling of products rich in albumen.

Soybeans contain one of the highest percentages of protein of all legumes. This cellulose-based protein has many properties:

- Once allowed to dry, it will stiffen the fabric, locking the fibers together where they cross – this will help to reduce wicking when applying the dyes.
- The soy protein is very easy to stain with dyes, allowing for a greater concentration of color throughout.
- As a plant-derived protein, it gladly takes in protein-specific dyes as well as cellulose-specific dyes.
- Once washed, it allows the fabric to return to its original hand.
- Once cured, it forms a protective coating over the fiber, locking in the dyes and giving enhanced protection against UV light damage.
- The protein, once cured, it’s no longer water-soluble. In this state it also has a protein-polymer memory, giving a somewhat PermaPress® finish to your textiles.
- As a protein-polymer coating to your fabric, it will function very much like Scotch Guard®, helping to reduce soilage.



A lush field of soybean plants in the heart of Iowa.

I’m going to be sharing three basic approaches to using soymilk with your textiles–as an undercoat, or sizing; as a binder, to glue pigments to your fibers; and as a finish, to protect your dyes and fibers from UV damage and general soilage.



Soymilk is a physical binder, a glue. It will help to hold dyes, such as pigments, to your fiber and encapsulate them in a protein-protective sheath. This is a physical bond created between the colorant, the fiber, and the protein in the soy.

Soymilk is not a mordant. Mordants are metallic salts that help to chemically bind, or assist, dyes in attaching to the fiber. Mordants do nothing to help pigments affix to the fiber, and do nothing to protect the fiber from soilage or UV damage.



Dry soybeans will double in size once properly soaked in water.

MAKING SOYMILK



Basic Recipe—Whole Beans

One cup of dry soybeans should yield enough soymilk to size six to eight yards of 45" wide china silk.

If you run out of sizing before you have reached the end of your fabric you have a major crisis on your hands. Never be afraid to make more than you think you will need.

1. Soak one cup of dry soybeans for around three hours. **The soybeans will double in size.**
2. Rinse the soybeans in a colander. Place the clean soybeans in a blender and fill it three-quarters full with water. **Leave enough room at the top of the blender to keep the mixture**



Blend the soaked beans on high and strain through a damp cloth.



from overflowing. Turn the blender on high or liquefy and let it run for about one minute. **The liquid will froth on top.**

3. Lay a clean, damp cloth in a colander that has been placed over a mixing bowl. I prefer to use a ricer to help hold the straining cloth up out of the soymilk. Pour the soy/water mixture through the straining cloth.

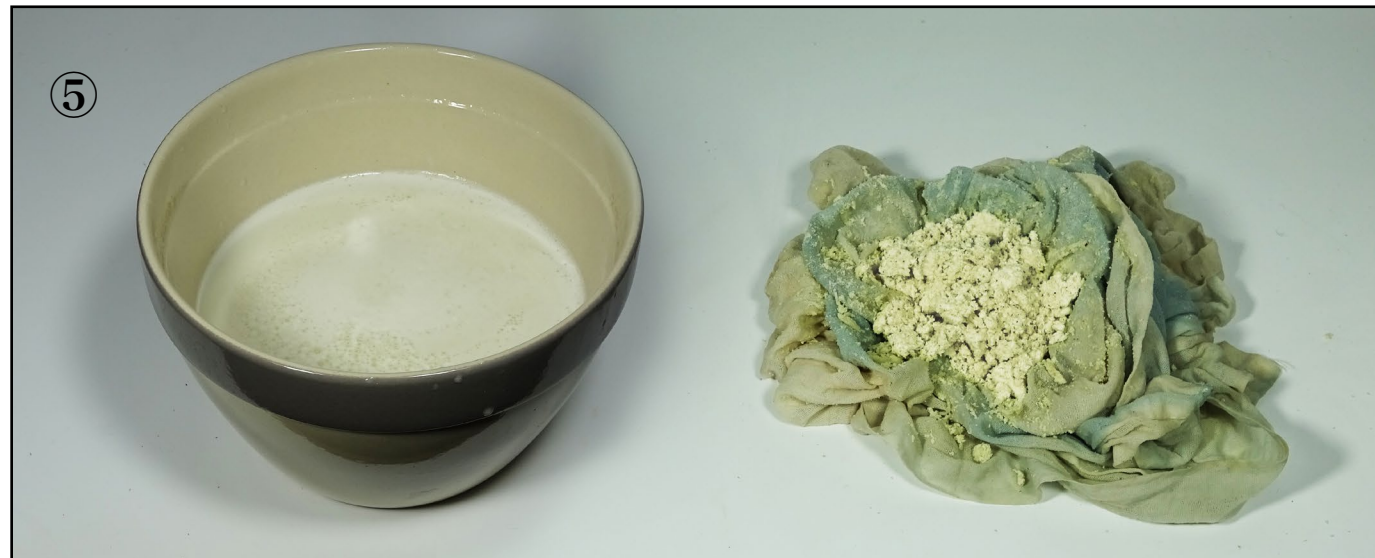
4. Pull up the edges of the fabric and wring out the liquid. The liquid that flows into the mixing bowl is soymilk, and the vegetable matter remaining in the cloth is *okara*.

5. Return the *okara* to the blender and add more water to repeat the process. By the second or third time, the *okara* will start to look like wet sawdust and crumble apart easily.

Wring the straining cloth to separate the soymilk from the crumble.



You can usually get three “pulls” of soymilk from one batch of beans, with each batch a bit thinner than the last. Mix them until you have a consistency similar to, or a little thicker than, two-percent cow’s milk. Take care when adding the third pull that you don’t over-thin the soymilk. This will yield about four to five cups of soymilk. If your final mixture seems too thick, add water.



The spent crumble has the consistency of damp sawdust.

Most Japanese dyers insist on separating each batch: the first (creamiest) is used only for pigments; the second, for sizing; and the third, to thin the first two, as needed, or simply thrown away. Throwing away the third batch has never made any sense to me as all three batches come from the same beans and the same water. I prefer to combine the three batches while keeping an eye on the concentration, the thickness, and use the mixture for whatever my needs are at the moment.

Test your soymilk by scooping up a cup full and pouring it back into the bowl.

How turbid is it?

Ideally it should appear to be about the consistency of whole or 2% cow’s milk, as found in the grocery store. For rugged fibers, such as cottons and linens, it should tend more toward the store-bought “whole milk” consistency, and for very sheer silks, more toward skim milk.



Basic Recipe–Soy Flour

In a pinch, a quicker method is to, one, grind the beans first (dry) in a blender (an old coffee grinder also works well), or, two, buy soy flour at a health food store.

I recommend the former, since as soon as you break the skin of a grain, it starts to deteriorate, and therefore loses strength while sitting on the grocer’s shelf.

Place several tablespoons of ground soy flour in the middle of a presoaked cloth. Bring up the ends and twist the center into a loose ball. Swish in several cups of water, very gently kneading the ball as you do so. The water will start to dissolve the protein out of the powdered soy. Continue until you have the proper consistency as outlined above, along with the desired volume.

This is a good, quick method to bring the solution made from the soaked soybeans up to proper consistency if you should accidentally over-thin it, without taking time to soak more beans.



Producing soymilk is quick and easy in a pinch when using soy flour.



HURRAH FOR OKARA!

Don’t throw it away! Add *okara* (leftover soybean crumbles) to meatloaf, spaghetti sauce, bread, and even cookie dough without altering the flavor or texture.

Search online for a broad range of tempting recipes.



The powdered form of the

soybean is especially useful when you are going to be away from your studio to dye. However, if you find yourself needing to make “quickie” soy milk often, simply soak a large batch of beans, pour off the water, blot, place in a plastic bag, and freeze the swollen beans. You may take them out as you need them.



Seed grinders, as well as coffee grinders, are great for making your own soy flour.





Since soymilk is a protein, it will sour and then rot if neglected long enough. I recommend you follow the tips below to protect your equipment and save aggravation.



Always soak your brushes before using with soymilk.

1. Soak all porous utensils in water before using them with the soy. This includes straining cloths, brushes, and *suribachi* mortars. Presoaking will help to keep the utensils from absorbing the protein and make them easier to clean.
2. Rinse all porous equipment immediately after use. This includes washing your brushes. Don't set a soy-wet brush aside to use again later. Wash it and set it aside to dry while selecting a new brush for subsequent stages.
3. Dispose of leftovers at the end of the day. Do not carry soy over to the next day as even slight souring reduces its strength.

In very hot weather, refrigerate whatever is not in use at any given moment, or drop an ice cube into the main bowl from time to time during the course of the day.

Some dyers add calcium hydroxide as a preservative to their soymilk, in some cases keeping it for up to several months in the refrigerator. I don't recommend this method as the calx has a tendency to harden and damage natural fibers. If convenience is an issue, make small batches of milk using the soy flour method outlined above.

4. As much as possible work in very low humidity. Try to keep the area as cool as possible if the humidity is out of your control.

The best weather for working is between 70° and 85° Fahrenheit and below 40% humidity. Otherwise, use fans to help circulate the air and speed up the drying time. The soymilk will sour and lose its effectiveness if it sits wet on the cloth too long in an environment that is too warm.

4. Try to complete all dyeing within two to three days of applying the sizing. This is the period in which the soy is most susceptible to being stained (dyed), and your most willing ally as it goes on to oxidize and lock in the colors.



Adding a few cubes of ice will keep your soymilk cool in hot weather.

SUPERMARKET SOYMILK

In Japan, there are two distinctly different terms that may be translated as *soymilk-tounyuu* (豆乳) and *gojiru* (豆汁). The first literally means *bean milk*, and the second, *bean juice*. In Japanese culture, soybeans are *the* bean, so it isn't necessary to mention the "soy" part. They are distinctly different products. The *soymilk* discussed in this program is the later, *gojiru*. It is simply the liquid that results from grinding dry soybeans in water and straining. Period. You wouldn't normally consume this as is. Raw soy proteins are difficult for humans to digest. The soy proteins are their most formidable in this state and easiest to control when using as a binder or sizing.

Tounyuu is heated to break down the soy proteins and allow them to be more easily processed by our digestive system. Store-bought, ready-to-drink soymilk is pasteurized (heated to partially sterilize), and contains flavors and additives as well as active cultures (bacteria) to aid digestion. Protein is still present, and therefore will work to a limited degree as a binder. However, it also contains all sorts of in-the-way ingredients. These ingredients, such as chocolate flavoring, are not additives you might normally choose to include in your dye recipe. The fewer the variables, the less that can go wrong. However, having said that, if you find that store-bought, *tounyuu* soymilk works for you, then by all means use it. This is not a contest of cults.



Commercially available soymilk comes in a variety of flavors.

PREPARING THE YARDAGE



Natural fibers may be classified into two general categories: animal, including fur (wool) and exuded filaments (silk); and plant, including flowers (cotton) and bast fibers (stems, leaves, roots, bark).

The animal fibers are protein based; the plant fibers are cellulose based. Within many dye traditions the dyes used for the protein fibers and those prepared for the cellulose fibers are quite different. That is especially true with synthetic dyes.

The methods I employ do not make that distinction. The recipes and application method I present in my programs are the same for all categories of porous fiber. Porous fiber includes all natural fibers, plus rayon (a cellulose-based synthetic) and nylon. Most other synthetic fibers are too smooth, although microfibers may work well.

Scouring

Sizing starches used in yarn processing and various oils found in the fibers may cause uneven dyeing, splotches, and sometimes even horrendous stains if the starch and/or oil react with the dyes. Therefore, before you can dye successfully, it is important to remove any residues in the fabric. The removal process is called “scouring.”

The most efficient way to scour the fabric is to put the yardage in a washing machine, fill the tub with warm water, and agitate it only long enough to make sure all the cloth has become saturated. Allow it to then sit in the washer for about one hour. Spin out the cooled water and replace with hot water.

Add a little cleansing soda, dish soap, or shampoo after you have started the wash on gentle cycle. Agitate for approximately twenty to thirty minutes. Rinse well, several times if

necessary, to remove any hint of the cleansing solution. Take care with wools; excessive agitation may cause the fibers to felt.

Careless washing is sure to give you unsatisfactory results in the end. Never crowd the tub, as it will cause wrinkles to set. Check the yardage periodically during the agitation cycle to make sure the length isn’t twisting. If the fabric does become tangled, stop the machine and straighten the yardage; otherwise you may

find “wear spots” along the folded edges or permanent wrinkles.

Hang the fabric outside to dry (out of the sun) or place in a dryer. If using a dryer, be sure to remove the load before it is completely dry to avoid damaging the fiber. Again, check on the fabric periodically to make sure it doesn’t tangle and set in wrinkles.

Natural fibers are derived from a variety of sources.



Even the Wierd Sisters of Macbeth would have opted for some modern conveniences, had they been available to them at the time.

SIZING



As touched upon earlier, soymilk is used as the binding agent for some dyes. It may also be used as a sizing agent for most dyes, including natural and synthetic.

I recommend applying the sizing after the fabric has been scoured, but before any paste or dye has been introduced. This is called *pre-sizing*, and serves to stiffen the fabric, making it paper-like in texture allowing for easier handling during the pasting, printing, or painting process. It will also help to prevent the dyes from wicking, making it easier to create detailed imagery.

Sizing may be applied after the paste resist (used to block out areas of the cloth) has dried. This is called *midsizing*, and is the most common form of sizing used in Japan.

And, sizing may also be applied as the final stage in dyeing, either just before washing the resist out of the cloth, or just after. This is called *postsizing*, or *finishing*. Both may serve two very valuable roles: ① to prevent the pigment dyes from crocking (rubbing off), and ② to give a “finish” to the cloth—a final “starched” feel that will act as a soil repellent and a wrinkle inhibitor. Postsizing/finishing is not normally used in Japan.



A vegetable spinner is a handy tool for ridding small projects of excess moisture.

Dipping to Apply

Deer-hair brushes, *jizomebake*, are traditionally used to apply the soy evenly, which helps to avoid streaking, however you may also use a large sponge or try spraying it on. You may even be able to get away with dipping for smaller pieces. Just remember—the soymilk comes from a bean, and will sour if not allowed to dry quickly (think of a bean salad sitting out on a picnic table in the summer sun...). It is best to do this kind of work when it is fairly warm and in an environment with low humidity.

I have found that dipping works best if you make the soymilk a bit thicker than you might if using a brush. Make sure that your fiber has been thoroughly scoured. Make sure your vessel is large enough to contain the entire piece with room to spare. Work in a cool place out of the sun.

Immerse your project in your container of soymilk and churn it with your hands slowly to ensure that all of the fibers are being evenly saturated. Allow to soak for five minutes and then gently lift the mass of dripping fiber or yardage out of the container while gently squeezing.

If your piece is small enough, a quick, gentle whirl in a salad spinner will get rid of most of the excess liquid. A quick spin in a washing machine on the gently setting will also work, but don't try to remove all of the moisture. Ideally, the fiber should be wet but not dripping.

If you opt to use your washing machine for this step, be sure to have a load of laundry ready to run immediately afterward—otherwise the drained soymilk will sour in the bottom of the drum.



Hang to dry in a shady spot with a breeze.

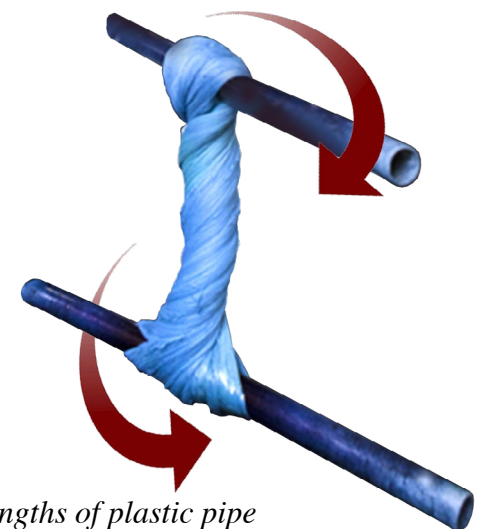
- yardage: hang on poles or a clothesline. Be sure to shift the position of the cloth several times during the drying process to avoid stripes where the fabric rests on the line.

- pre sewn garments: turn inside-out to dry. Having the seams exposed will speed up the drying process.

- yarns: skeins of yarn may be spun as mentioned above, but they may also be wrung out using two poles. It is important to rotate the skein often during the drying process.

Be sure not to lose track of the fact that soymilk is a binding agent, a glue. If not careful, you run the risk of gluing all of your yarns together. To avoid this, thwap your yarn between your wrists every time you

stop to rotate it. This will speed up drying time considerably and keep the yarns from going Zen (entering a state of Oneness).



A couple of lengths of plastic pipe area a great way to twist out excess moisture from yarns.



Sizing Yarns

To the left is an image of me starting to dip hand-knotted ramie fiber into a bowl of thicker-than-normal soymilk.

The skeins have been sectioned off and slightly twisted to avoid tangling.

I allowed them to soak for five minutes, massaging them gently while still submerged. I wrung out the excess soymilk and repeated the above steps twice. After the third wring, I dangled them all from a metal pole outside in the shade, and inserted another free-hanging metal rod to weight them.

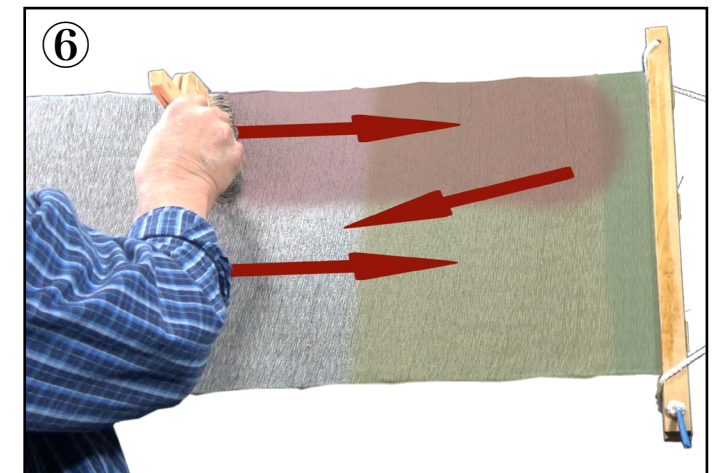
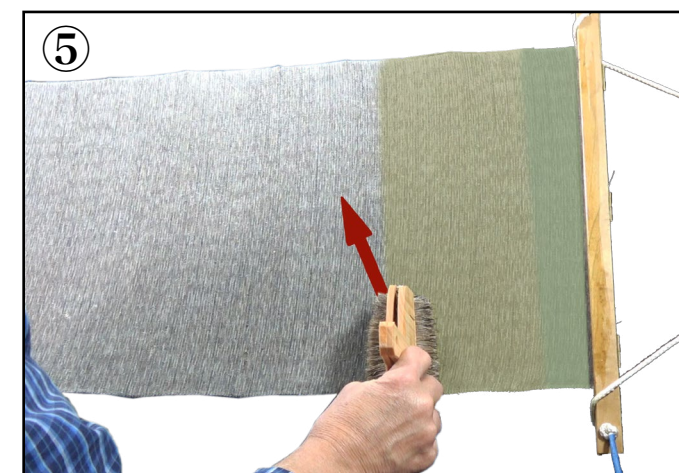
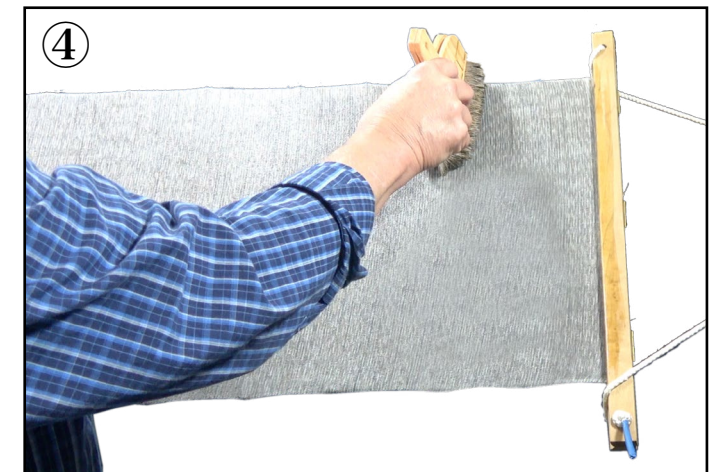
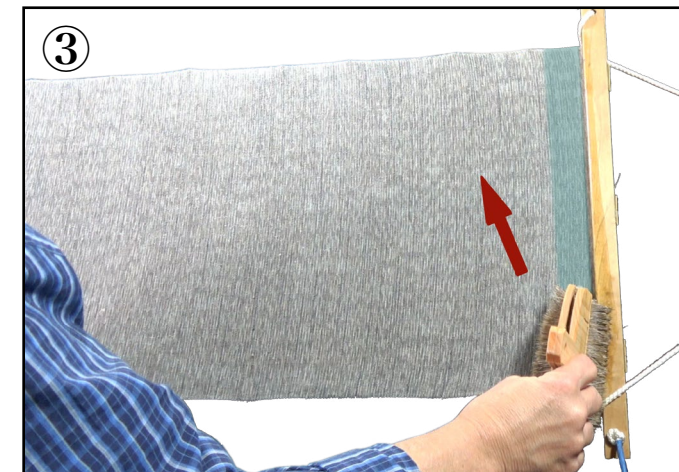
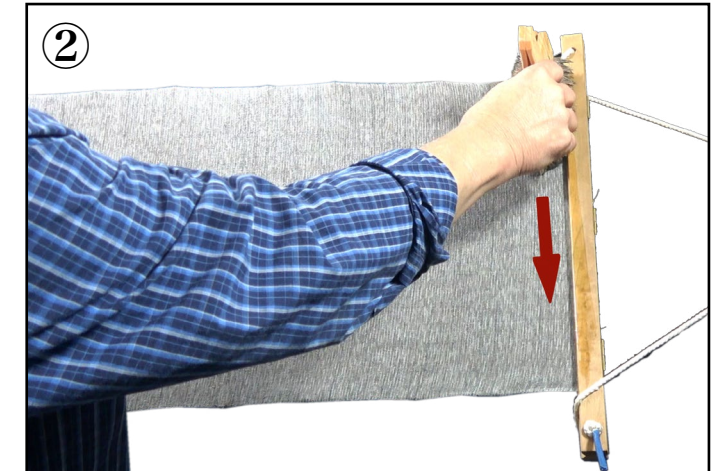
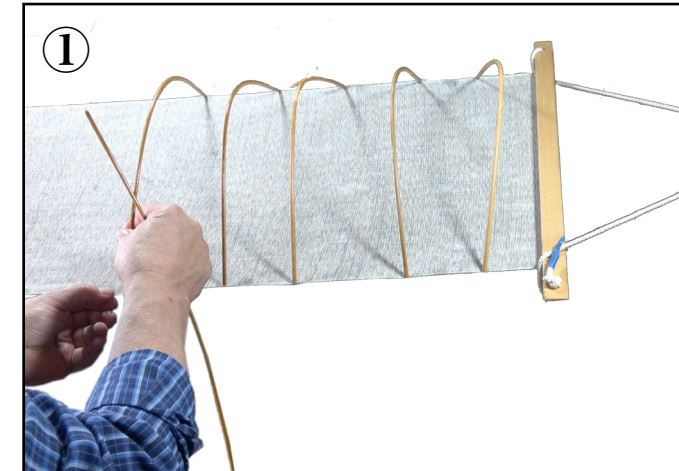
Weighting them in this manner helps to prevent tangling as I periodically rotate the skeins to encourage even drying. As I rotated them, I also spaced out the strands a bit to prevent them from sticking to each other.



Applying With a Brush

Jizomebake are the ideal shape for applying soymilk evenly. The semi-stiff bristles are splayed to form a curve, much like a tube cut in half lengthwise, to allow for an even transfer of soymilk to the yardage.

Always pre-soak any brushes in water for at least half an hour



WORKING WITH INDIGO: Direct Application vs Vat Dyeing

Indigo is unique among plant dyes—it’s basically colorless while safely tucked away in the leaf cell. Once the cell structure is compromised and the no-color indigo (*indogen*) is exposed to air, it takes on oxygen molecules, turns blue, and becomes non-water soluble, making it a naturally occurring pigment. If it is to be used as is, it needs to be bound to the fiber. And as a pigment that calls for the use of soymilk—great, as far as everything else we’ve covered in this program. However, indigo offers us another option.

In vat dyeing, if we chemically rip the oxygen away from the molecule, we can surround our fiber with the now water-soluble indigo in this “blank” (reduced) state. When we’re ready, we may give it back its oxygen, turning it blue again. As it gobbles up the oxygen, it gains weight and this increased size traps it within the strands of the fibers, holding it prisoner. Now that it’s blue again, its once more a pigment and non-water soluble.

What does all this mean?
First, it means that if you take a dish of indigo (blue) pigment and want to apply it to your cloth you need to stick it on with something or it will slough off (crock). Great! Use soymilk.

But, if you are dyeing with it in vat form by first reducing it, the soymilk is not necessary. If you presize your yardage with soymilk before dipping it in the vat it will actually work against you by preventing the wicking (absorption) required to pull the indigo in and trap it.

But, but, but...*after* the vat dyeing is done, if you find that your indigo-dyed piece is crocking and your lovely blue dress is leaving reminders of your visit on your friend’s white leather couch, then not *all* of the indigo has been trapped. What to do? Give it a final sizing of soymilk. The soymilk will grab those renegade particles and glue them to the surface, locking them, and the particles incarcerated within the bars of the weave, in place, and perhaps you’ll be invited back again.

Tell tale signs that someone hasn’t been making use of the postsizing option!



before dipping into the soymilk. Flick out the excess water from the soak and dip the brush into your soymilk bowl. Be careful not to submerge beyond the bristles. Slowly remove the brush and stroke the bristles along the rim of the bowl to remove excess liquid. The brush should be saturated but not dripping heavily.

Brushing on soymilk is easiest if you use traditional equipment, *harite* and *shinshi*, to stretch your fabric.

Using a back-and-forth motion, start at the selvage edge away from you, covering an area roughly twelve inches wide as you work toward the selvage edge closest to you. Return to the top selvage and, while brushing over a new area roughly twelve inches wide, backtrack and give the previous section another light coat, essentially covering roughly twenty-four inches with each swipe of the brush.

Re-dip your brush as necessary. In this manner, work to apply an even coat of soymilk over the entire surface of your stretched yardage, overlapping while moving forward the entire time.

If there are dry looking spots, you can go back and quickly even them out.

If the soymilk is dripping off the edge of your fabric, then you applied it with too heavy a hand. If it’s really bad, you can try taking a clean, dry bath towel and rub it quickly and evenly over the entire surface to pick up the excess liquid and even out the distribution of the soymilk while getting rid of the drip or any puddling. Needless to say, it’s best to do it right the first time.

Work as quickly as possible. Do not answer the telephone or take deliveries during this process. You are not able to answer children’s questions or find your loved-one’s keys until you finish applying the soymilk. Unless the house is on fire, remain focused on the job at hand.



*No phone calls.
No family demands.
No deliveries.*

The above precautions are necessary to keep that invisible intruder at bay—the one who lurks in the shadows hoping to defile your work—namely, wicking.

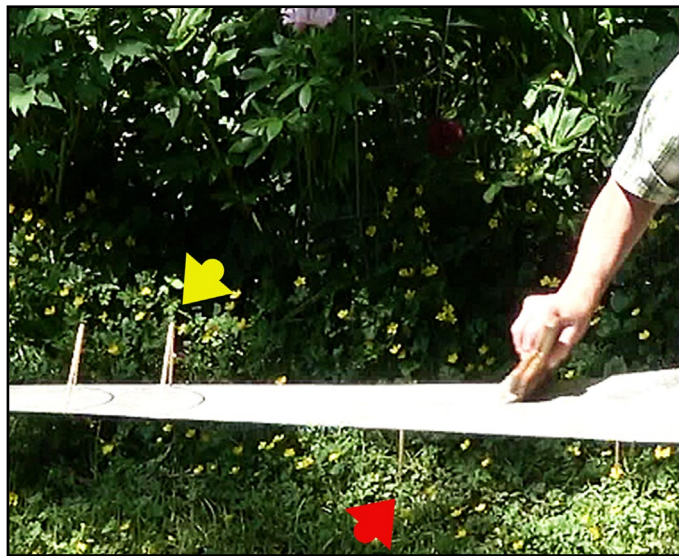
Wicking, when the liquid travels along the fiber (just like oil traveling up the wick of a lamp), is a bad thing. Take great care to avoid this unwelcome guest.

If for any reason you apply the soymilk too slowly, oversaturate the fiber (so that soymilk is dripping off the lower edges), or stop mid-process, you will invite wicking. If wicking occurs while sizing, it is actually the water traveling along the fiber, not the soy. That will cause uneven soy coverage, and eventually, streaking. Unfortunately, the streaking won’t be apparent until you begin to apply dye, and may not even appear until the final washing.

Presizing lays a foundation for the dyes to come. If you are presizing (applying the soymilk before having applied the paste), stop at this point and allow the soy to dry completely to touch. If it is a humid day, it may be necessary to put a fan on the fabric to speed up the drying process. As with any bean product, the soymilk will spoil quickly if conditions are not right, so the sizing should take, at most, no more than three or four hours to dry, much less in hot weather.



Transferring the shinshi to the reverse side makes it easier to rub the back of the cloth with a dry brush.



If you are midsizing (sizing after pasting but before having applied any dyes), once the soy has been applied, flip the damp cloth over so that the back side faces up. Scrub the back with a dry brush. You may work between the *shinshi* or temporarily transfer them to the down-facing right side. The purpose of the scrubbing is to draw the moisture to the back, and in doing so to help the now slightly-softened paste to get a better grip on the fiber and prevent wicking under the paste from occurring later when the dyes are applied.

Turn the cloth face up again. If you have moved the *shinshi*, return them to the back side of the cloth. Allow the cloth to dry thoroughly before proceeding. If the cloth or paste feels the least bit cooler than room temperature, it is not yet dry. Allowing the materials to dry thoroughly between stages is imperative. How dry? Dry. Not “almost dry,” “sorta dry,” or “maybe dry,” but dry—as in, well, dry.

Postsizing gives an even finish to the cloth, makes it more wrinkle- and soil resistant, and adds a final security lock to the colors beneath. Apply the soymilk as you would in presizing or midsizing. Postsizing is not traditionally done in Japan.

Try this experiment: Prepare a length of cloth, but only apply soymilk sizing to one half. Once dry, don't take note of which half is which, or give any other indication to act as a record of the difference.

Go about your business dyeing the entire piece, as you normally would do with non-soy-based dyes. Give it time to cure and then wash. Can you spot any difference; can you tell which half had the sizing and which did not?

My bet is on you being able to detect the difference, even if subtle. The sized side will present the colors as just a bit richer, with a bit more character and clarity of line where detailing is present. And for me, that difference makes the effort worthwhile.

The protein in the soymilk is in suspension; it is not dissolved. This is an important detail in understanding how the soymilk behaves. You wouldn't need to worry about streaking if it were dissolved because, if so, the protein would travel with the water as the liquid wicked along the fibers during this initial application. However, since it is in suspension, the protein remains behind as the water alone travels the fiber. The fiber is in essence straining the protein out as the water moves along.

This threatens uneven coverage. If you dilly-dally, stop for a phone break, or just

plain work too slowly, you'll wind up with bands of concentrated soy and regions saturated with only water.

So? You'll get streaks.

As the water dries, the formally water-saturated areas are, for all intents and purposes, still blank, whereas the other areas are coated with protein. As a result, when you later go to apply your dyes, the fibers will be stained unevenly causing *streaking*.

Doubling back as you apply the soymilk helps to reduce some of this risk, but using an over-saturated brush only exacerbates the problem.



If you find you continue to have streaking, despite your best efforts, try thinning your soymilk down by half, and applying two coats—make sure the first one dries completely before applying the second. You may still get streaking, but with two coats, they should be in different places, and at least partially cancel each other out.

WORKING WITH DYES

Soymilk as a binder

Soymilk may also be used to bind pigments to the fiber.

What is a pigment? A pigment is a colorant that does not normally remain dissolved in water, but settles out with time. The settling is caused in part by fairly large particles of color—particles that are not carried all the way into the fiber but that sit on the surface. As such, the pigments have a tendency to rub off (crock). When the pigments are suspended in the soymilk, the soymilk will act as a binder, encapsulating the color and adhering it to the surface of the cloth. Indigo is a good example of a natural pigment dye, as is dirt.

Dissolve your pigment, natural or synthetic, in soymilk—using the same recipe you used for sizing earlier. As a general rule, it is better to apply several thin layers of pigment/soy rather than one heavy layer.

Mix the color you think you would like to use and test it on the selvage edge of your cloth. Allow to dry. When you have just the right shade, mix enough color to apply one coat to your entire length of cloth and still achieve the same color.

Satisfied?

We must apply at least three coats of the mixture to achieve a high quality dye results. However, applying three coats of the color we just mixed and tested will make it too dark, and perhaps thick enough to cake off. So what to do?

Measure the total amount of dye you have prepared in a measuring cup—enough for one coat. We will add to it that same amount in soymilk, and again the same amount in water to thin it down.

After applying three coats of the thinned mix-

ture, you should wind up with the same pigment concentration, and, therefore, the same depth of color as that achieved in your original test along the selvage. By applying three coats you have encouraged each layer of pigment to become totally encased in the soy, giving you a much greater bond and color with much greater integrity.

Take care to allow each coat to dry thoroughly before applying another coat.

I should mention here that if you are not using a pigment as a dye you do not need to add any soymilk binder to your dye. Dyes dissolved in water by cooking up plants or insects, as well as synthetic dyes, should be applied to the cloth without adding soymilk to the mixture. The soymilk will do no harm to the color, nor will it serve any purpose other than to reduce the shelf life of your dye since the soymilk will rot.

Applying Dyes

The traditional methods of Japanese color application follow the same concept of application mentioned in the sizing section, see page 21.

Generally speaking, the dye should be thinned down, and three layers applied. It is much easier to control the amount of dye you are applying if you use a drier brush (one that is not dripping wet) and “grind” the colors into the cloth rather than splash them over the surface. You will find that all of the brushes mentioned in my programs ending in “-bake” (*jizome-bake*, *surikomi-bake*, and *botan-bake*) are designed to take this grinding abuse.

Steam-Setting Colors

If you are using dyes that require heat setting, follow the manufacturer’s guidelines. If using synthetic dyes, it is best to steam (if required to do so) before curing the yardage.

The steaming process has no effect on the soy sizing or binders as long as they are completely dry when you begin.

Many people seem to come to the conclusion that using soymilk will supersede or negate steps normally required to set any number of commercial dyes. This isn’t true.

If you are using soymilk with inert pigments, then that is, indeed, enough to set them. However, if you are using any dyes that require heat setting, or adding a catalyst to set them, then you’ll still have to go through those steps, whether or not you sized the fabric first.

As a general guide, this is what I’d suggest: apply the soymilk sizing and allow it to dry. Next apply any dyes that require heat setting, allow them to dry, then steam and allow to cool and dry.

If you’re planning on accenting areas with soy-mixed pigments, or adding other dyes that don’t require steaming, now would be a good time to apply them.

The tricky part is figuring out the order.

Applying soymilk first, encourages a greater grip on the fiber and along with that, colors with more character. But to do any good, the protein must cure before the fabric is washed.

Many dyes require a lot of rinsing.

Many dyes require heat setting.

Hang the yardage in a safe place to finish curing (this is for the sake of the soy protein, it has nothing to do with the steamed dyes), and once that time has passed, wash as you normally would under any circumstances.



Above is a sample I have dyed on a Japanese loose-weave cotton called sarasa. The petals were painted on scoured, dry fabric with no soymilk sizing, using cochineal and azurite—you can see how the dyes wicked. Afterward, I sized the cotton with soymilk and painted the leaves and stamen using ocher, cochineal, and malachite—none of which blurred. See how well the two approaches partner to achieve an effect not otherwise possible? Give careful thought as to how you can use this characteristic to enhance your own work.

Hand Painting With Soymilk

High quality watercolor pigments may be substituted for the dyes I use if you'd like to try painting with materials on hand.

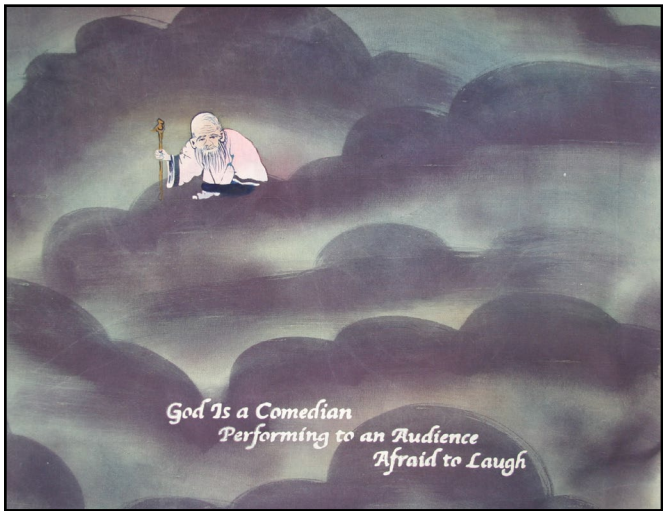
Thin your tube or cake watercolors with soymilk instead of water. The soymilk will act as a binder to make the watercolors permanent. Paint on the fabric just as you would on watercolor paper. The soymilk sizing you applied to the surface will keep the colors from wicking, allowing for crisp lines as well as for areas of delicate shading.

Once you have finished painting, set the fabric aside in a warm, dry spot for at least two days to a week to allow the soymilk to cure a bit. Since you haven't used a resist in this piece, it isn't necessary to wash it.

When it's completely dry, your fabric will be a bit stiff. Pull gently along the bias in both directions to put the bounce and drape back into the weave.

You may display the painted piece at this point, or go ahead and sew with it. It will continue to cure over time.

The sky is the limit in terms of how you employ your own creativity to fashion new and enchanting works. I've presented several examples here to illustrate hand painted textiles, some in combination with resists, and some not.



Cherry Blossoms, by John Marshall
Rice-paste resist flowers, hand painted centers.



God Is a Comedian, by John Marshall
Paraphrased quote from Voltaire "God is a comedian playing to an audience that is too afraid to laugh." Natural dyes on silk.



Above: Tsujigahana technique, obi fabric. Hand painted details to enhance shibori dyeing.

Below: Shouki the Demon Killer, by John Marshall. Natural dyes on silk. After hand-painting the entire piece, I applied paste resist through stencils to the hat and garment to add the illusion of pattern in leno woven textiles.



TREATING FABRIC WITH SOYMILK



To help your fabric resist soil and wrinkles, or to size your fabric in preparation for painting it, make enough soymilk to completely submerge and saturate the cloth. One gallon will easily treat one yard of fabric.

Place your yardage or garment into the soymilk and knead it, working the liquid into the fibers. Gently wring small pieces of cloth, or remove excess water from larger pieces in the washing machine's spin cycle. Smooth out any wrinkles and hang the fabric to dry.

I don't recommend starting this project on a humid day, as the soymilk might sour.

The fabric should air-dry within a couple of hours. Once the fabric is completely dry, iron it and set it aside to cure.

During curing, or oxidation, oxygen molecules in the air permanently bond the soy protein to the fabric's fibers. The drier and warmer the environment, the better.

So how long do you need to cure your fabrics? I cure my fabrics for an average of three months, but don't let that deter you. Even a few days of curing will be helpful.

If you were able to find an end-of-season bargain you'd like to size, just go through the process, iron it carefully, hang it in the closet until next season and you'll be ready to go!

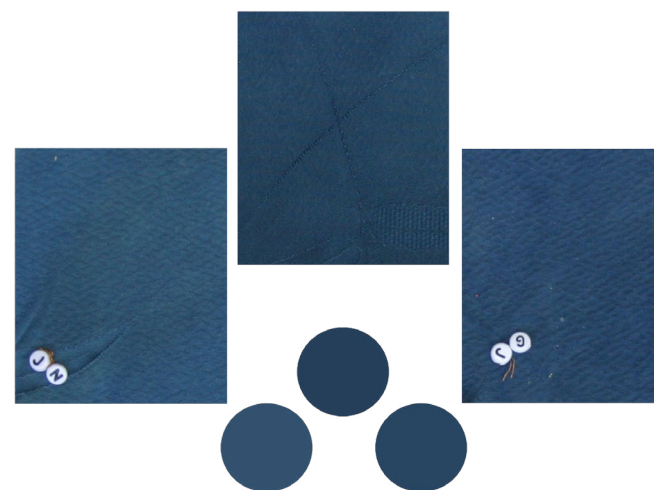
If you are quilting with your fabric, it will continue to cure as you construct your piece. By the time the quilt is finished, loved, and ready to wash, the soymilk will be *way* cured!



Thoroughly saturate your garment with fresh soymilk and hang to dry.



SOYMILK AS A PROTECTION AGAINST UV DAMAGE



*The samples above are of silk jacquard dyed with dry-leaf *Persicaria tinctoria* (Japanese indigo). Left to right: no soy sizing, control piece, with soy sizing. The round samples indicate the average color of each. You can easily see that while there was some fading in the soy-sized sample when compared to the control piece, it is significantly darker than the untreated sample.*

in the soymilk form a protective shield. To test this I used fresh-leaf indigo, indigo pigment painted with soymilk, and reduced vat indigo on a wide range of fibers and using a broad range of techniques. I cut each dyed length into three pieces—one was coated with soymilk as a postsizing and the remaining two were left as is, of which one was hidden away in a dark closet as a control. The first two were then hung outside in full summer California sun for three intense months.

The experiment is described in great detail in my book *Singing the Blues*, but in a nutshell, I found that the soy-coated samples faded about 50% less than the untreated pieces, making it well worth my effort.

Colors can fade or shift for a number of reasons, but the most common one is sun exposure. Ultraviolet light causes a molecular shift in the foundation of colors, and some dyes and techniques leave your textiles more vulnerable than others.

This is a more pronounced issue with non-mineral-based dyes, synthetic or natural.

I've always been in the habit of giving my dyed fabrics a final coat of soymilk before procrastinating on the construction. I noticed over the years that even quilts I've had hanging for decades under skylights didn't seem to change color much. My belief is that the polymerized proteins and oils

FINISHING UP

Curing the Yardage

I make use of a wide range of natural pigments in much of my work and the soymilk acts as a glue, helping to bind them to the fiber. The soy needs to do more than just dry. It must cure.

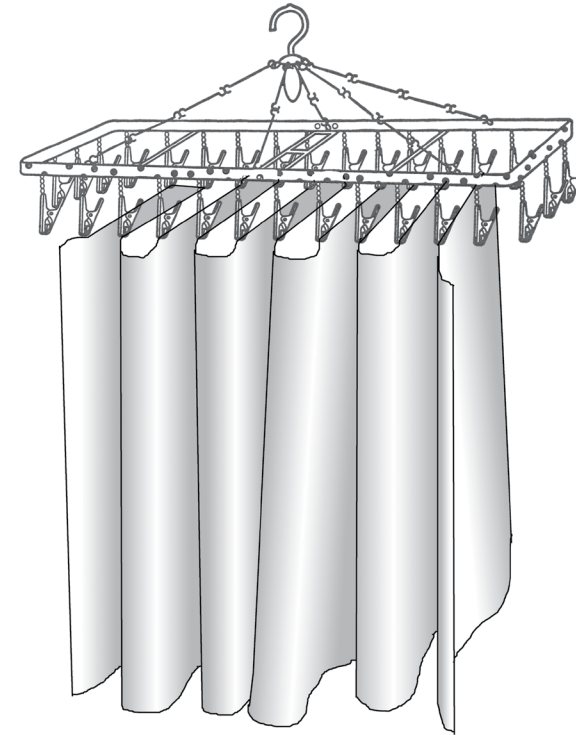
Drying means that the water content has evaporated away. Curing is the phase during which the protein molecule shrinks and bites into the fabric.

How long you allow the soymilk to cure is somewhat arbitrary. Some Japanese artists allow the soy to cure only a few days, some for a year. I prefer to allow it to cure up to three months. The longer you allow it to cure the higher the quality of your product. There is, however, a diminishing return: allowing it to cure one day is much better than just one hour; allowing it to cure twelve months is not that much better than eleven.

It is often necessary to wash your fabric before continuing on to another stage. Washing will break the physical bond holding the fibers locked in place, mentioned above, allowing the weave to relax and return to its natural hand. However, if you wash the fabric before the soy has cured, you run the risk of having some or much of the soymilk wash away—and worse—carry the dyes it absorbed with it.

After you have applied the last of the dyes, store the fabric away in a safe, airy, dry location.

I prefer to use yardage hangers—racks with clothespins dangling from a frame—to suspend the yardage. Taking care to handle the yardage gently, fold (do not pleat) the fabric accordion-style while clipping it in place. The yardage hanger will allow the fabric to hang without stress, and to be exposed to the air evenly on all sides.



Hang it some place out of the way, where it will remain unmolested for as long as you determine is necessary. In winter I hang my fabric from the rafters near my wood-burning stove. In summer it hangs outside under a southern-exposed tin roof.

If you live in a very humid environment, you may want to construct a drybox. A drybox may be fashioned of a solid material such as plywood, or a disposable material such as a refrigerator carton. You may also decide to use an empty closet or a rarely used guest bathroom. In all of these scenarios you will need some heat source, such as a light bulb safely wired in, or an electric heater on its lowest setting. The heat will drive away the moisture, creating a dry environment in which to store your fabric during the curing process.

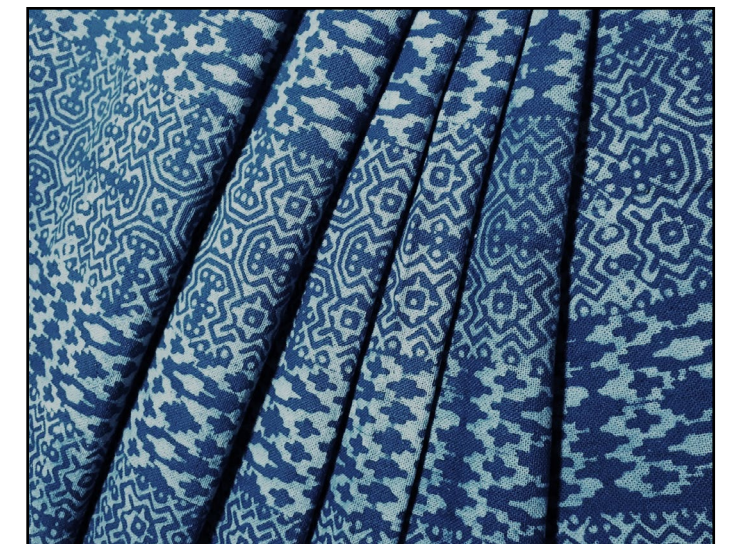
For the quality I seek to achieve, I generally allow my fabrics to cure for two to three months, as mentioned earlier. However, this time may be cut back considerably depending on your circumstances. Just be aware of the risks you take.

Of course, if there is no need to wash out your fabric, then don't. If you can still work with the slightly stiff, sized fabric, then go ahead and do so, it will continue to cure as you deal with it, as it sits in the procrastination pile, or as it dangles from a hook in your closet.

I'll describe a few examples of how I have used the properties mentioned above:

Soy is a protein polymer and as such, has memory. As the soymilk cures, it shrinks, hardens, and can retain the state in which it is cured. So if you are careful to store it wrinkle-free until it is fully cured, you will have what amounts to a perma-press length of yardage.

Since the soymilk acts as a binder, if you have exquisite indigo textiles you have collected from places such as Nigeria or Laos, and find that they have a tendency to crock, simply work in a coat of soymilk to glue the wayward particles to the fiber, allow to cure, and no more blue arm pits! (See page 21.)



Beautiful samples of SE Asian indigo work, but watch for crocking!.

If you are preparing liturgical banners, *noren*, or wall quilts, consider adding a final coating of soymilk to help reduce damage due to ultra-violet light exposure. I normally do this after the last washing of my fabric, but before construction takes place. Soymilk in seams takes longer to dry and may sour.

Consider carefully the properties I have outlined and you will come up with all sorts of additional uses to challenge your imagination and suit your textile needs.



Tug-o-War, by John Marshall. Natural dyes on silk slub tussah. Dyed to match on both sides.

Final Washing

Once all other steps have been completed, you may wash the fabric in cold or lukewarm water to remove any water-based resists, or process according to manufacturer's recommendations for non-water-soluble resists.

Do not rub or scrub. The soy-based sizing and dyes are weakest at this stage. If you have correctly followed all of the steps outlined in this program, very little, if any, of your dyes should dissolve into the rinse water. If there is pigment sitting on top your paste, it will wash out with the resist and settle to the bottom of your wash basin. Once this happens, your water should be clear. If dye has bled out of your cloth and dissolved in the wash water, noticeably staining the water, you didn't apply your dyes correctly.

Washing the fabric will return the yardage to its original hand. If your fabric remains undesirably stiff, even after thorough washing and a tumble in the dryer, you probably have been too generous in your use of the soymilk. Next time try applying fewer layers of soy, or using thinner soymilk.

Postsizing/Finishing

So often beautifully crafted textiles wind up looking "used" sitting in boutiques and galleries, forlorn and neglected. And in a sense they should be—they have been stressed, are distressed, through the kind of handling and repeated washings our dye techniques impose.

There is actually a simple solution to this. Before sending your kids out into the real world, arm them with the tools to cope. A shield of soymilk is just the thing to launch them on their way to success and adoption into an appreciative family.

Once you are entirely finished with all poking, prodding, boiling, binding, and dousing, suspend your yardage midair using *harite* and *shinshi* to apply a layer of postsizing. Your soymilk should be a bit thinner than that used to date, but applied in exactly the same manner as that used to apply presizing and midsizing soymilk. This will give help to protect our loved one from harsh light, brutal wrinkling, and tawdry dirt.

Now, stand back and take a good, critical view. Be harsh, as the viewing public is sure to be.

At this stage the fabric will be a little stiff and paper-like and easy to work on. Is a little rinse of color required to perk up a sagging personality? Would a few extra lines added for accent bolster confidence? Perhaps a little gold leaf to hide a lack of confidence? This is the time to identify deficiencies and apply proper solutions. There is no particular rush at this stage, take your time, engage your project in meaningful conversation, and trust that when you're done, you're done. Specific techniques for applying touch ups are covered in the dye sections of this series.



At this stage, try to assess your work as the world will see it, not as you would simply like it to be, so that you may help it achieve its full potential.

Additional Information

COMMONLY ASKED QUESTIONS

How dry does the soymilk have to be before applying another layer?

Dry. Not damp. All the way dry, as in “parched bones in the Sahara.”

How can I use the soymilk to make my fabric wrinkle resistant?

If you have stretched your fabric on *harite* and *shinshi* during the dye process, store it away to cure as described above. If you take care not to allow it to become wrinkled while handling, it will naturally remember its flat state, even after washing, or require just a light touch up with an iron.

How can I keep my pigments from crocking?

To crock means to “rub off.” Be sure to scour your fabric as your first step. Stretch and size your fabric as outlined elsewhere. Only pigments crock since, by nature, they tend to sit on the surface of the fiber. Be sure to apply the colors in several diluted coats rather than one heavy coat. Allow to cure an ample amount of time before washing. Be gentle while handling wet yardage; pigments are weakest when wet.

How and why is vat indigo treated differently?

Technically, vat indigo functions as a pigment, since it rests on the surface of the fiber—it does not chemically bond with the fiber through a mordant catalyst.

It is best *not* to presize yarns or yardage for use in your vat indigo for two reasons: ① you want the indigo to wick, thus causing it to soak into the fiber; and ② indigo yardage is often washed very soon after the oxidizing stage is complete, which would not allow the soymilk enough time to cure.

Indigo fixes to the fiber as it oxidizes. Soy would neither help nor hinder the oxidation process and would therefore simply be wasted effort at this stage.

However, because indigo does often crock, it is wise to apply a coat of *postsizing* once all of the dye steps have been completed. This is not a traditional step, but I’ve found that it works. Since vat indigo is dipped, both sides are coated with pigment and both sides have the potential to crock. If you are going to make an unlined garment, it is wise to apply a coat of soymilk to *both* sides of the yardage, one at a time, to prevent crocking onto undergarments. This may not apply if you are working with a very sheer weave, since the one application will penetrate both sides.

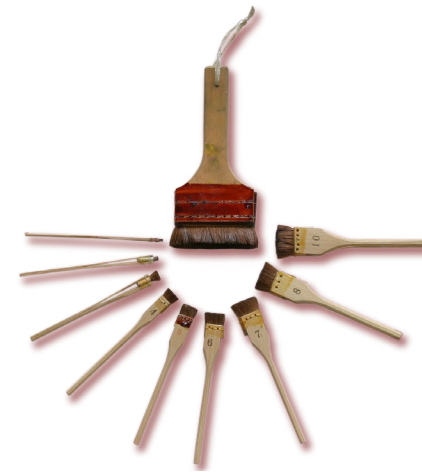
How long will the soy stay fresh?

I recommend making only as much as you think you can use up in one day. Even if it hasn’t soured or spoiled by the next day, it won’t be at its best, putting at risk all the rest of your devoted efforts to create a beautiful piece.

HELPFUL TRADITIONAL TOOLS

Brushes

Jizomebake are designed to allow the same number of bristles to touch the surface of the cloth no matter how it is tilted. You’ll find this makes it much easier to apply sizing and dyes more evenly, helping to avoid streaks. *Jizomebake* come in sizes ranging from around four to nine inches wide.



Surikomibake are used to apply colors to smaller areas and to “grind” pigments into the weave. They tend to be a bit softer than *jizomebake* and are normally held perpendicular to the cloth to allow full contact with the yardage. They range in size from one-sixteenth to four inches in width.

Botanbake are rounded at the bottom, much like a tennis ball cut in half. The brush is held with the top (the teepee-like handle) pressed against the palm of your hand, your fingers gripping the base of the handle (imagine a giant octopus descending upon a small submarine from above).

Using a lot of wrist action, the bristles are gyrated in a swirling motion across the surface of the yardage to create the appearance of misty clouds resting in a mountain valley, or tumultuous smoke pouring forth from as dragon’s breath.

While ideal for shading, I do not recommend this brush for beginners. The design is inherently unstable, allowing bristles to continually shed. Very similar shading results may be achieved with the larger *surikomibake*.



Stretching Equipment

Shinshi come in a range of lengths and thicknesses, each designed for use with a specific weight or measurement of cloth. *Shinshi* are long, flexible sticks of bamboo with needles embedded in each end. These stretchers are most often used in combination with *harite* to stretch the fabric into a taut, flat surface, much like that of a trampoline.

The needles are poked into the selvage of the yardage following the weft, or into the corners of presewn squares and rectangles diagonally. The shinshi should be at least twenty to thirty percent longer than the length of cloth to be spanned. The difference in length forces the bamboo rod to bend, creating tension, pulling the fabric taut between the two insertion points. The goal is to achieve a bend closer to a “Mona Lisa” smile, rather than a “happy face” smile.



Harite are made up of two sets of clamps; each clamp consists of two long and narrow planks of wood with needles to grip the cloth. Once the yardage is held in the clamps, the clamps are pulled taut between two posts to mimic a hammock. In doing so, often ripples are formed running the length of the yardage. *Shinshi* are pressed into service to eliminate this problem.

Harite are fairly expensive to purchase and rather easy to make. Directions are presented in my Equipment program and may also be found on my web page in the How To section.

Grinder

Suribachi and *surikogi* are used together to function as any electric grinder or blender would work today. They are common items in a Japanese kitchen. *Suribachi* have deep grooves on the inside of the bowl against which the *surikogi* mashes and pulverises ingredients with a great deal of effort by the chef.



JAPANESE HINA

Hina (talismans) have played a very important role in Japanese society since long before recorded history. The oldest forms were associated with purification rights.

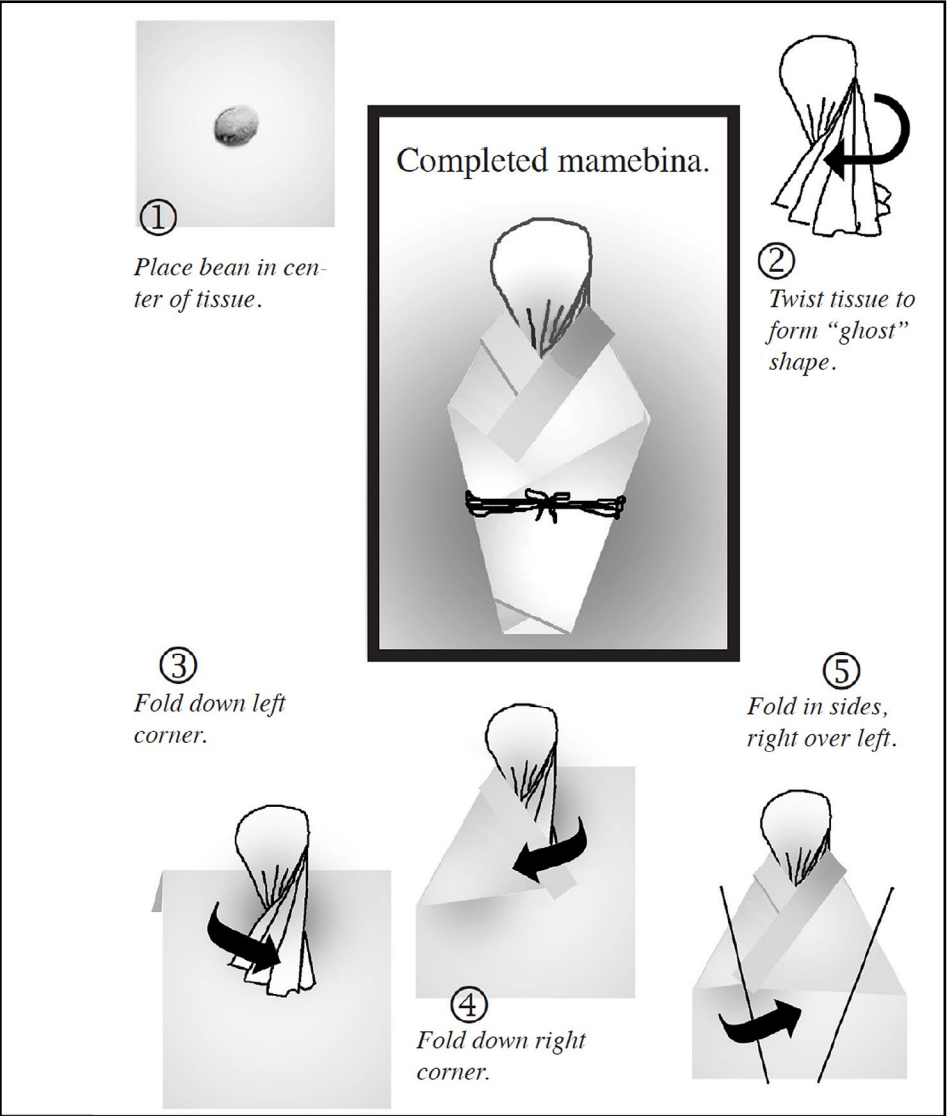
Originally made of white strips of paper, sometimes a few leaves or twists of straw, soy beans, or other items considered to be pure, *hina* served to protect the owner from harm by absorbing any disease or ill fortune that may befall the host, thus helping to relieve some of the fear that comes from dealing with the unknown forces of Nature.

In ancient times *hina* were kept close to the host, sometimes worn on the body. In modern times they are kept in the heart of the home—the family shrine.

Periodically, especially after an illness or calamity, the proxies are purified by disposing of them through the use of fire or water, sending their essence up to the vast heavens or allowing them to drift downstream, carrying all accumulated evil with them to the great expanses of the boundless oceans. This custom is still practiced throughout Japan, with every region having its own variation.

Hina are the origins of the elaborate dolls seen on Girls’ Day in Japan, the Hina Festival.

On the following pages are two examples of soybeans used as protective talismans.



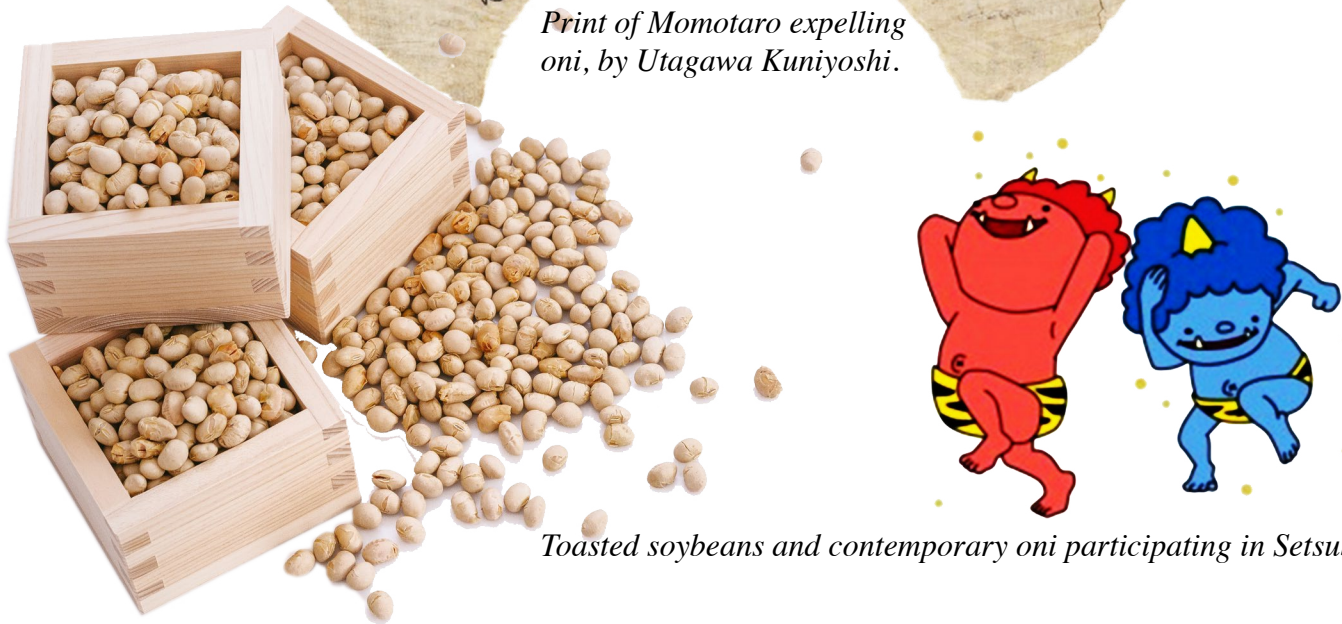
Soybean Hina
You may create your own charming talisman by following the drawings below. Traditionally these hina are made of toasted soybeans (regular dry ones will do) and white or unbleached, thin, handmade paper (washi). White tissue is an acceptable substitute.

Setsubun (Vernal Equinox)

Radical changes of weather are considered times of vulnerability. To guard against ill fortunes the Japanese have an ancient practice of purifying the home with roasted soybeans during the change from winter to spring. To heighten the drama, a friend or neighbor will often dress as a goblin (representing all ills that are lurking to violate the home and its occupants) and attempt to invade the house. As he does so, the occupants will shout as they throw the beans to repulse the goblin's efforts, "*Oni ha soto! Fuku ha uchi!*" ("Demons out! Good fortune in!") This exorcism is repeated in every room and closet in the house. One must be careful always to leave a door open during the rite to allow Ill Fortune a speedy escape! As a result of the purge, everyone is assured of a happy and healthy spring.



Print of Momotaro expelling oni, by Utagawa Kuniyoshi.



Toasted soybeans and contemporary oni participating in Setsubun.

Supplies and Equipment Used in This Program



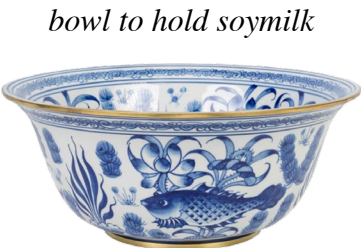
dry soybeans



brushes to help remove soy flour from grinder



coffee or seed grinder to grind dry soybeans into flour



bowl to hold soy milk



blender for mashing soaked soybeans



ricer or colander as an aid in straining soy milk



cloth to strain soy milk



sieve to sift ground soy flour



suribachi and surikogi as an old-fashioned alternative to a blender for mashing beans

commercial soy flour





Movie Clips

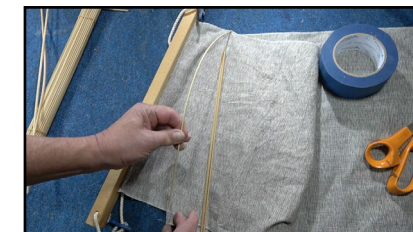
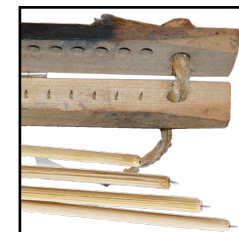
The movie clips on this page may also be found next to the relevant text in the body of this lesson.



Harite and Shinshi

Using traditional stretching equipment.

2:04



Fabric Treatment

Scouring textiles and hanging out to dry.

6:13



Sizing Presewn Garments

Dipping finished garments or textiles into soymilk to apply finish and to help prevent crocking.

7:09





10:27

Making Soymilk With Soaked, Whole Beans

Using a blender with soaked beans to make soymilk.



8:06

Making Soymilk With Soy Flour

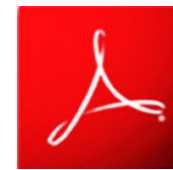
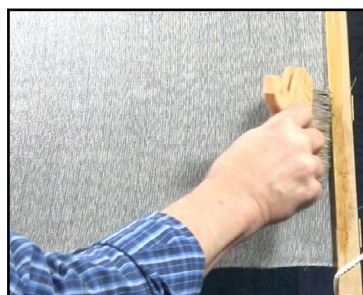
Grind your own beans or use store-bought soy flour.



10:13

Sizing

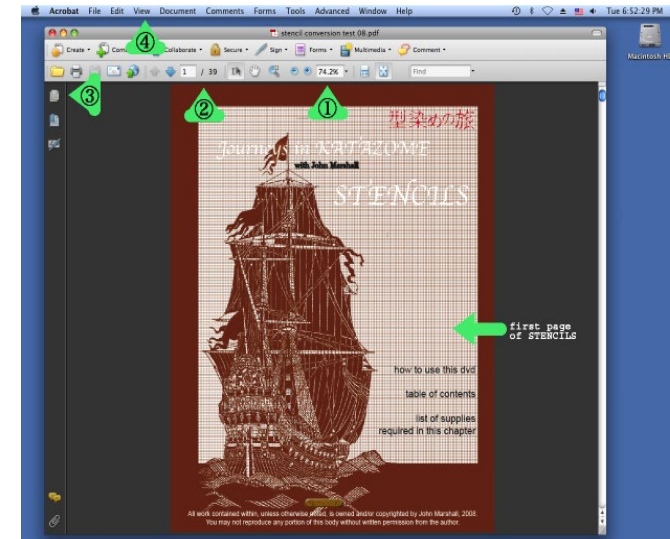
Presizing, midsizeing, and postsizeing techniques. Brush care. Working with wide width yardage. Also includes adding washes of color during the postsizeing stage along with how to touch up dye problems caused by poor pasting.



Helpful hints when using Acrobat with these lessons.

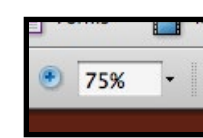
If you are not familiar with most of the features of Acrobat, please take a moment to review the information on these pages. It will make learning in this format much more enjoyable.

I'm using a MAC to create these pages, so if you are using a PC, your desktop may have a slightly different appearance. The program itself should function the same.



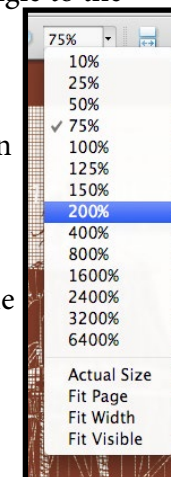
This is close to what the first page looks like when it first comes up on your screen.

① indicates the percentage at which you are viewing your page—look up at your real page menu bar right now and you should see a similar percentage. I'm going to say that I am viewing at 75% of the real size of my page, so this is what I'll see:

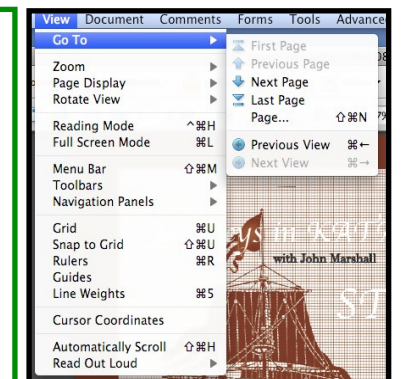


Notice that there is a small black triangle to the right of the number. Try clicking on it and you'll see a range of choices. If you click on 200%, as I plan to do, you'll see that suddenly the details of the first page above are much more clearly visible.

Any time you want to view one of my images "closer up," just select a higher percentage.

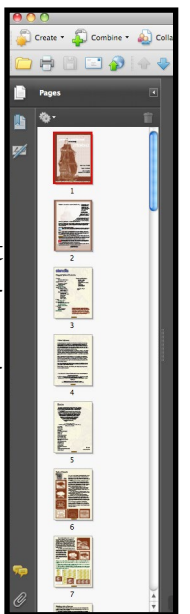


(By the way, this icon means "hit the tab key and the down arrow on your keyboard at the same time.")



② shows you that this first page is page 1 of 39 pages. If you want to go to a specific page, you may type in that page number and hit return to be taken there.

③ is another way of viewing the pages. If you click on the page icon, small versions of all of the pages will appear in the column beneath it. Seeing pictures of what the pages actually look like will make it easier for you to find the one you are looking for.



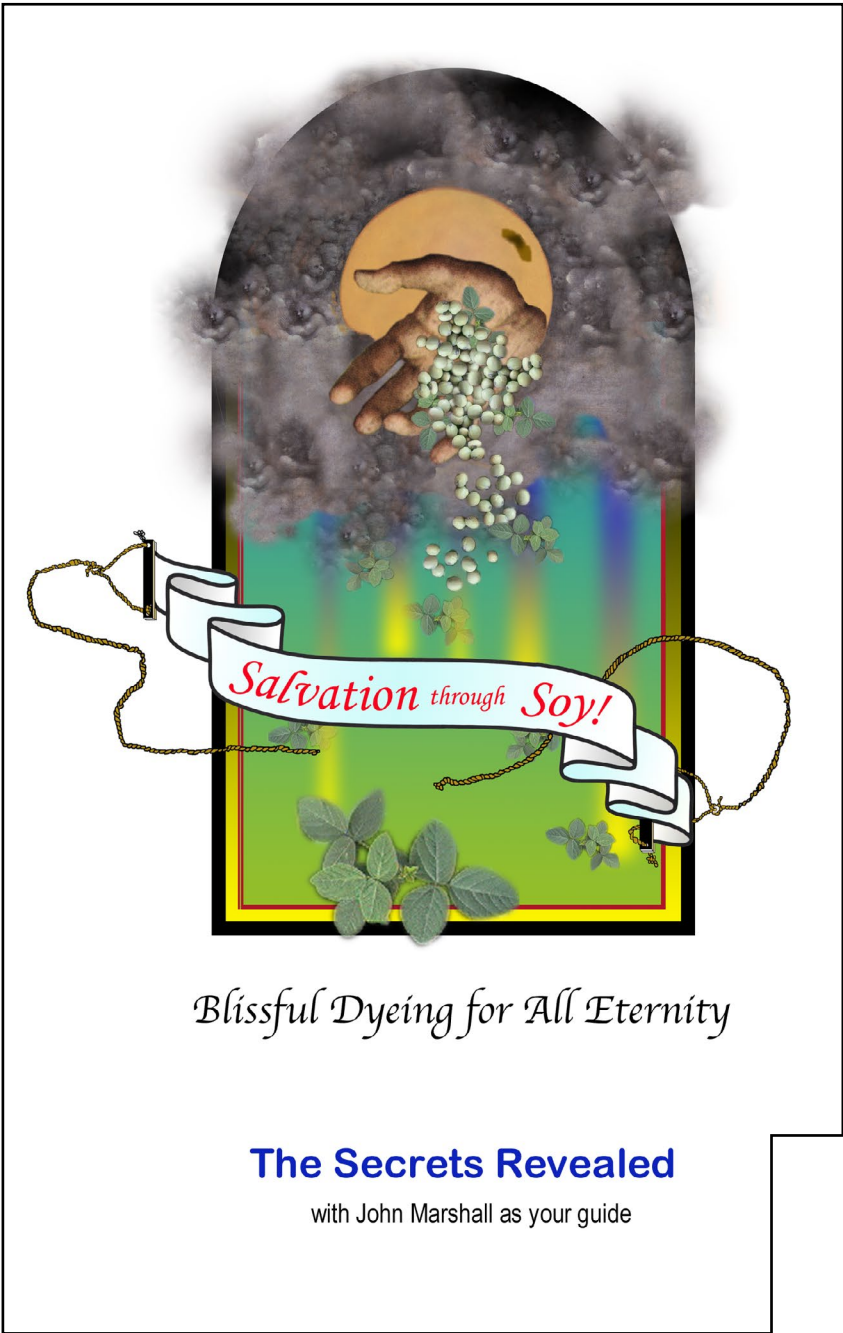
④ directs you to the menu bar at the top of your screen, in particular, the "view" column. Explore your choices. For example, selecting "go to" will show you the keyboard shortcuts to help you more easily jump around.

Keyboard Shortcuts

If you are handy with your keyboard, here are a few of the many key-stroke combinations that will speed up navigating these pages (commands used by MACs and PCs are a bit different):

Action	PC keyboard strokes	MAC keyboard strokes
First page	Shift+Ctrl+Up Arrow	Shift+Command+Up Arrow
Last page	Shift+Ctrl+Down Arrow	Shift+Command+Down Arrow
Previous page	Left Arrow	Left Arrow
Next page	Right Arrow	Right Arrow
Previous view	Alt+Left Arrow	Command+Left Arrow
Next view	Alt+Right Arrow	Command+Right Arrow
Scroll up	Up Arrow	Up Arrow
Scroll down	Down Arrow	Down Arrow
Zoom in	Ctrl+Equal Sign	Command+Equal Sign
Zoom out	Ctrl+Hyphen	Command+Hyphen
Enlarge view	Ctrl +	Command +
Reduce view	Ctrl -	Command -

Please take a moment to visit my web site at www.JohnMarshall.to. There you will find updates to the material presented in this DVD, as well as a list of other DVDs in this series.



Over the years, I have fielded a broad range of questions and even become sandwiched in a heated debate over which kind of soymilk is sanctioned by the dye gods—home made or store bought. (Really!)

I’ve tried to address most of the issues that have come up as part of this online series. However, I still get many requests for the original publication and have decided to include it here as a download. Just click on the cover design above to download the pdf version.

Salvation Through Soy

I originally published the booklet, Salvation Through Soy, in 2002 in preparation for a natural dye conference in Iowa that same year.

My paper was written and put to rest when I happen to come across a web site that claimed that soybeans are the food of the devil, as proven by the fact that Asian eat them (!). Well, I couldn’t leave that alone, could I? It prompted me to change the whole format of my talk.

