

Q + R^h

Natural Dyes

INTRODUCTION & GUIDE

INTRO

Welcome to the world of natural dyes! In this brochure, we've outlined three sequential parts of the natural dyeing process: Scour; Mordant; and Dye. The first two parts are essential preparatory steps of the process needed for prepping your natural fibers and/or fabrics for taking (and holding) the natural dyes.

For more in-depth information and alternate methods for each process, we recommend reading *Intro to Natural Dye by Jeanine Ertl*. Before starting Part I of this three-part process, please make sure to review the sections below on safety, supplies, and weight of fiber (WOF). Enjoy!

SAFETY FIRST!

While the Natural Dyes and Mordants referenced in this guide are “natural” (derived from the natural world), they still need to be treated with care. For a safe experience using these dyes, we recommend the following:

Never mix your Kitchen Tools with Dye Tools; label your Dye Tools accordingly and never use them with food

Avoid direct contact while handling Mordants and Dyes by wearing gloves and a face mask. (Especially if you have sensitive skin, allergies or other medical issues.)

DYE SUPPLIES

- Mordant(s) — unless dye doesn't require one
- Natural Dye Packet — color of your choice
- Material(s) to dye— all natural yarns, fabrics, etc.

HOME SUPPLIES

Must-haves:

- Water source
for scouring, mordanting, dyeing and rinse
- Heat source
indoor/outdoor: stove top, burners, over a fire)
- Aluminum pot
to scour, mordant and dye in
- pH neutral soap
to scour fiber and fabric
- Stirring implement(s)
such as spoons, tongs, or chopsticks
- Cup or bowl
to mix/measure Mordant & Dye; to set wet items in
- Scale
to measure fiber/fabric and Mordant and Dye weights

Recommended:

- Gloves — *to protect your hands from coming into contact with Mordant and Natural Dyes*
- Face mask — *to avoid breathing in Mordant and Natural Dye as you pour, measure and cook*
- Apron and/or old clothes to wear
- Cloths/rags — *for cleaning as you go*
- Measuring cups + spoons
- Thermometer — *to accurately measure and monitor water temperature for scouring, mordanting, and dyeing*
- pH test strips — *useful for control of color response and results, but only necessary if you desire this control—see page 17 of **Intro to Natural Dye** for more details.*

WEIGHT OF FIBER/FABRIC (WOF)

Before you Scour, Mordant, then Dye, it's essential to measure the weight of the dry fiber/fabric (called WOF) that you intend to dye. If you're interested in getting consistent results, creating specific dye recipes for future use, and/or recording your results, we highly recommend taking this step before proceeding.

Since our Natural Dye Collection focuses on dyeing natural fibers (cotton and wool yarns), we recommend using a scale on hand that can measure the WOF in grams for each fiber type. You can record your measurements below for referencing later:

Weight of Fiber/Fabric (WOF): _____ grams

Please note: If you intend to dye multiple types of fiber/fabrics (e.g. cotton, wool, bamboo, etc.) all at once, and intend on using multiple mordant and dye pots, we highly recommend *Intro to Natural Dye* by **Jeanine Ertl** for more in-depth information.

For the sake of simplicity and consistency, we'll assume that you're dyeing with one fiber/fabric type for each part of this three-part process.

PART I: SCOUR

To Scour is to give fiber or fabric a thorough cleansing by applying very hot water (almost or at a full boil), a pH-neutral soap, and much agitation.

Scouring is a critical step before dyeing, as it transforms your fabric into a dyeable, penetrable, and even work surface.

HOW-TO: SCOUR

1. Heat a pot of water large enough for your fiber/fabric to freely flow and have space to move about.
2. Add a small quantity of pH-neutral soap (see options below) to the scour water to thoroughly cleanse.
3. Add fiber/fabric to pot of hot water, dependent on type:
 - a. **Cellulose Fibers** can take boiling water and are scoured efficiently and quickly in a pot of boiling water.

b. Protein Fibers should never be boiled. Wool will felt and Silk will lose its sheen. Instead, they should both be scoured at lower temperatures (180°F / 82°C).

4. Cook (but do not boil) for 30-40 minutes.
5. Remove from heat. Let cool. Rinse with fresh water.
6. Proceed to Part II: Mordant, or hang dry then store scoured fibers and/or fabrics for mordanting at a later date.

** pH NEUTRAL SOAP OPTIONS:*

blue Dawn dishwashing soap, washing soda, sodium carbonate, soda ash, sal soda, or dyer's favorite—Synthropol.

PART II: MORDANT

After you have scoured your natural fibers and/or fabrics, it's time to mordant! Natural dyes will only make a proper bond to mordanted natural fibers. Without a mordant, most natural dyes have nothing to grip onto and will rinse out and fade quickly.

Two of the most popular mordants are:

Alum (100g) — brightens colors for clear, colorful results

Iron (25g) — saddens colors; adds gray to the hue (used as a color shifter)

DETERMINING QUANTITY OF MORDANT:

For Alum:

Weigh dry fiber/fabric to dye on scale.
(This is your weight of fiber, or WOF)

Alum needed is 15-20% of WOF.

Example:

For 50g fiber/fabric
 $0.15 \times 50g \text{ fiber/fabric} = 7.5g \text{ Alum}$

Measure that quantity of ALUM to mordant with.

For Iron:

Weigh dry fiber/fabric to dye on scale.
(This is your weight of fiber, or WOF)

Iron needed is 2-4% of WOF.

Example:

For 50g fiber/fabric

$0.02 \times 50\text{g fiber/fabric} = 1\text{g Iron}$

Measure that quantity of IRON to mordant with.

Natural Dyes are a beautiful mix of art and science; you may choose to be as exact or spontaneous as you like in the results you yield—it all depends on your approach. Measuring how much Natural Dye is needed is never an exact science (unless you are replicating a recipe). Instead, how much dye is needed is full of options and choices a Dyer must make as they determine how deep a color they are looking for and what fiber/fabric type is being dyed.

NATURAL DYE RATIOS

DYE : WOF | to achieve rich, dark color

Below are dye ratios for all the Natural Dyes included in the Starter Kit (along with a few more sold separately) to get you started. Note that how much is needed is a fluid answer. If less Natural Dye is used, color will still be found, just in lighter shades. Additionally, as a dye bath is exhausted, it will continue to dye items, just in increasingly lighter shades. With this in mind, place items you want in the deepest hues in the dye first. Save items you want in lighter shades for later dyeing.

Determining Quantity of Natural Dye:

1. Weigh the dry fiber/fabric to be dyed to determine WOF.
2. Determine the natural dye's ratio & the desired shade.
3. Multiply WOF by ratio (see table below) to determine how much dye is needed.

Example: Your WOF for a skein of cotton yarn is 50g and you want to use the Cochineal dye (dye : WOF ratio is 0.05 : 1).

50g fiber x 0.05 = 2.5g Cochineal dye needed for your 50g skein

HOW-TO: MORDANT

This quick process is an active one that uses heat for speed. For alternate methods, please refer to *Intro to Natural Dye* by Jeanine Ertl.

1. Weigh your dry fabric/fiber to determine the amount of mordant to use (see above section 'Determining Quantity of Mordant' to calculate this measurement). Dampen fiber with water after weighing.
2. Wearing gloves and face mask, measure mordant according to its type.
3. Fill your pot with enough water to allow item(s) to freely float and move around.
Heat till 180°F / 82°C.
4. Dilute and mix mordant with warm water in a cup or bowl before adding to the pot of hot water.
5. Add mordant to the pot of water and mix until dissolved.
6. Add damp fiber and heat until the pot is 180°F / 82°C.
7. Stir occasionally and cook for 1 hour.

Natural Dye SPECTRUM + RATIO CHART

NATURAL DYE	COLOR	DYE : WOF
<i>Cochineal</i>	red to magenta purple	0.05 : 1 ratio, up to 0.1 : 1
<i>Sappanwood</i>	bright red	0.5 : 1 ratio, up to 1:1
<i>Red Sandalwood</i>	terra cotta to orangey peach	0.5 : 1 ratio, up to 1:1
<i>Osage</i>	bright golden yellow	0.75 : 1 ratio, up to 1:1
<i>Annatto</i>	yellow to peach	0.5 : 1
<i>Henna</i>	tan to olive	0.75 : 1 ratio, up to 1:1
<i>Cutch</i>	tan to brown	0.5 : 1
<i>Madder</i>	rusty pink to red	0.5 : 1 ratio, up to 1:1
<i>Logwood</i>	purple to black	0.5 : 1 ratio, up to 1:1

Cochineal: red to magenta purple. This is a very generous dye. 20 grams will dye a varied quantity of items, depending on the weight of those items and what shade of color you are looking for (dark, medium, lighter tones). To achieve a rich, dark color, use approximately 5-10% the weight of the dry fabric (WOF).

Sappanwood: bright red. Sappanwood can be used at .5 : 1 ratio, up to 1 : 1 weight for the richest color. This means that 50 grams will dye approximately 50-100 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue of pink.

Red Sandalwood: terra cotta to orangey peach. Red Sandalwood can be used at .5:1 ratio with the richest and darkest colors presenting when using a 1:1 weight ratio. This means that 40 grams will dye approximately 40 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue. Additionally, for the best color, pre-soak the dye in alcohol before dyeing.

Osage: bright golden yellow. Osage can be used at .75:1 ratio to 1:1 weight for the richest color. This means that 40 grams will dye approximately 40 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue of gold or yellow.

Annatto: yellow to peach. A little of this dye will go a long way. 50 grams will dye double its weight in fabric/fiber. The dye will continue to give color in gorgeous lighter shades at a lower ratio, depending on what shade of color you are looking for (dark, medium, lighter tones). To achieve a rich, dark color, use approximately .5 : 1 (weight of Annatto Seeds : weight of Dry Fabric).

Henna: tan to olive. Henna can be used at .75:1 ratio, up to 1:1 weight for the richest color. This means that 50 grams will dye approximately 50 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue.

Cutch: tan to brown. A little of this dye will go a long way. 20 grams will dye a varied quantity of items, depending on the weight of those items and what shade of color you are looking for (dark, medium, lighter tones). To achieve a rich, dark color, use approximately 1:5 (weight of Cutch : weight of Dry Fabric).

Madder: rusty pink to red. Madder Root can be used at .5 : 1 ratio, up to 1 : 1 weight for the richest color. This means that 50 grams will dye approximately 50 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue of red.

Logwood: purple to black. Logwood can be used at .5 : 1 ratio, up to 1 : 1 weight for the richest color. This means that 50 grams will dye approximately 50-100 grams (dry weight) of fiber/fabric. It will continue to dye in lighter shades till the dye has been used up. Use less for a lighter hue of purple.

HOW-TO: NATURAL DYE

1. Heat a pot of water large enough for the fiber/fabric to float freely. Wearing gloves and a face mask, add natural dye and stir, breaking up any clumps.
2. (OPTIONAL: For some natural dye (especially fine powders), mixing dye in a cup of hot water before adding is helpful for getting the dye to more easily disperse.)
3. Bring the dye pot to a low simmer and heat for a minimum of 30 minutes (or more ideally, a full hour), to ready the dye.
4. When the dye pot has been simmering for 30-60 minutes, place the damp fiber/fabric in the dye and stir to move freely and evenly. Continue to stir occasionally, throughout.
5. Every 5-10 minutes, stir and check on the fiber/fabric.
6. Let the fiber/fabric simmer for at least 30 minutes, but more ideally closer to an hour. Watch as the color deepens.
7. When items are the preferred color, remove from the dye pot and let set for a few hours or overnight before rinsing. Once rinsed (and dried) you're ready to enjoy your naturally dyed object!