

Extracting Indigo Pigment from Dried Leaves

Indigofera tinctoria and all other types of indigofera leaves stay green when dried and can be used for extraction of pigment after drying. Woad (*Isatis tinctoria*) leaves may also be used but they must be dried as quickly as possible, in the shade, with a stream of dry air. Persicaria tinctoria leaves turns blue when dried and cannot be used for dry leaf extraction.

Dried and powdered leaves of indigofera tinctoria are used as a hair dye and are sometimes referred to as “black henna.”

1. Soak the dried indigo leaves, powdered or whole, in warm water (50°C /125°F) for 15-30 minutes. Cover the vessel to limit oxygen from entering the solution and to maintain the heat.
 - Use 100 grams of indigo leaves in 1 liter of water for a small, experimental batch
 - Use 1000 grams of indigo leaves in 10 liters of water for a larger batch
2. In the meantime, make lime water. Mix together 30 grams (or three generous tablespoons) of calcium hydroxide (slaked lime or pickling lime) in one and a half liters of cold water (you can also make a smaller amount of lime water by using this ratio if you plan to only make an experimental batch). Allow about 15 minutes for the lime to settle. Use only the clear liquid from the top of the solution after the lime has settled. Any extra lime water can be stored in a plastic bottle, clearly labeled.
3. Strain the liquid from the indigo plant matter through a polyester mesh or use a fine cotton filter cloth if you are working with powdered indigo. Squeeze out all the juice. Discard the indigo leaves in the compost or garden and preserve the clear liquid juice.
4. Begin to aerate the liquid from the soaked indigo to add oxygen and turn the indigo particles blue. You can pour the liquid back and forth between two vessels or use a whisk or electric hand blender to expedite the process.
5. Add lime water. The lime will help the indigo particle to turn blue.
 - Add 100 ml lime water for a small experimental batch
 - Add 1 L lime water for a large batch
6. Continue to aerate until all the bubbles turn blue.
7. Pour the liquid through a cotton filter cloth to separate the blue indigo particles from the liquid. Let the filter sit a few hours, or overnight, until a firm paste is formed. The yield of indigo paste will be:
 - approximately 10 grams from 100 grams of dried leaves.
 - approximately 100 grams from 1000 grams of dried leaves.
8. Scrape the indigo paste from the cotton filter cloth into a jar.
9. If the indigo pigment is to be used for printing, the lime must be neutralized. Add a small amount of apple cider vinegar to the jar of indigo paste and mix it well. The apple cider vinegar neutralizes the lime water added earlier. Any excess vinegar will float to the top and can be poured off. Use the paste immediately for printing or add a few drops of clove oil to preserve the paste if it will be stored.

Note: The indigo paste may be made with fresh leaves, but that will require more water and a longer soaking time. It is more efficient to work with dried leaves.