

Ethnobotanical Leaflets

Native Dye Plants of the United States

By Kathy J. Ogg

The first to use native dye plants in the United States were the Native Americans. Their culture was totally dependent on what the land produced. This is reflected in the wealth of information Native Americans possessed about useful plants, from medicinal to ceremonial and dye plants. This is reflected in the types of houses they built and the names of places (often after the plants that grew there). Early European colonists foolishly ignored the wisdom of the Native Americans and modern Americans are not much wiser. Americans need to learn about the plants and animals in our own country and how they can be useful to mankind. Instead of bringing non-adapted species of Europe to North America we need to learn what native adapted species can fulfill our needs and wants (Gilmore 1977). For example, we spend thousands of dollars feeding, sheltering, and caring for European cattle when we have native bovines, bison which are naturally adapted to the climate and environment. Melvin Randolph Gilmore sums this idea up well in the following quote:

"The country can not be wholly made over and adjusted to a people of foreign habits and tastes. There are large tracts of land in America whose bounty is wasted because the plants which can be grown on them are not acceptable to our people."(Gilmore 1977). Native Americans learned about the plants in their environment through general trial and error and through communication with other tribes (Gilmore 1977). Some of the dyes used by Native Americans of the Missouri River region are discussed below. Far more plants were used for medicines, shelter, and tools than dyes. Various green dyes came from pond scum probably *Protococcus*, *Ulothrix*, *Chaetophora*, and *Spirogyra*. Another green dye that was used for bows and arrows came from lamb's quarter, *Chenopodium album*. Yellow dyes came from a variety of places including smooth sumac, *Rhus glabra*, roots, the lichens *Parmelia borrieri* and *Usnea barbata*, and young cottonwood (*Populus sargentii*) leaf buds collected in early spring; this particular yellow dye was used for coloring arrow feathers and quills. An orange dye also used as a feather dye was boiled out of the vines of dodder (*Cuscuta paradoxa*). Red dyes came from pokeberry (*Phytolacca americana*) and were used to paint horses and people. The familiar bloodroot (*Sanguinaria canadensis*) was also used as a skin dye or to dye articles that were boiled with the roots. A black dye was made from the root of the black walnut (*Juglans nigra*) tree (Gilmore 1977).

With the coming of European settlers much in the way of native plant dyes was lost. Some European settlers brought European dye plants for private use or to grow commercially. Indigo, which is native to India, was the first dye plant early settlers tried to grow, but because of the strict timing involved with harvest and treatment and competition with British production, growers led to its rejection. High tariffs on dye stuffs placed on American grown indigo by the British made it more profitable for settlers to grow other crops. After the Revolutionary War, Thomas Jefferson and Dolly Madison urged the growth of dye stuffs such as madder, indigo, woad, and weld, again all European or Asian plants (Adrosko 1971). Settlers preferred European manufactured dyes because homemade dye colors and fastness are variable. With improvements in

chemistry more people were able to use home-grown dye plants but still the majority of the recipes were hodge-podge copies from European books and non-natives (Androsko 1971). In the late 18th century it was discovered that coal tar compounds could be made into reliable dyes and the synthetic dyes were on their way. Natural and native dye making is now the labor of crafts people and those wishing to use more Earth-friendly materials. The fact that the colors of natural dyes vary and require a certain knowledge is what has made dye making popular again (Androsko 1971).

So how does one become a dyer? And how can people who live in the city obtain dyestuffs? The first task is to collect plant stuffs for dyeing. While collecting in the country is easier and one is more apt to find native wild plants growing here, sources of dyestuffs are available for those living in urban areas. In the summer one may contact a local botanical garden manager and ask them to save plant materials such as bark, leaves, and flowers left from trimmings. Another good source is one's local florist or grocery store produce manager. They most likely will not mind someone cleaning up flower and vegetable scraps. In winter, again the florist may be willing to part with spent flowers and foliage. Power companies often remove limbs from trees and bushes at this time and one may ask to come later and collect the branches. Produce warehouses also are likely to allow one to pick up greens. It is important to be courteous and to ask permission first. Also bring your own equipment and do not ask for special favors (Casselmann 1980). Summer in the country always supplies an abundance of wildflowers and plants. Almost anything can be used for dyeing : weeds, wildflowers, garden plants, mushrooms, bryophytes, and lichens. Ask neighbors and local farmers for permission to collect on their land. Farmers will often know what plants are on their land (Casselmann 1980). In winter, vegetable scraps, late flowering wildflowers, lichens, Christmas tree needles, and jack-o-lanterns can be used for dye stuffs. The soot from the jack-o-lantern serves as a mordant.

Equipment for collecting includes plenty of bags (too many is better than not enough), scissors, knife, spoon, gloves and a basket or box to protect crushables such as flower blooms and mushrooms. Store these in a dry well ventilated place to prevent mildew (Casselmann 1980). Once collected the various plant parts used in dyeing must be treated to release the dye. Most all must be boiled. Also note that the color of the flower is not necessarily the color of the dye. Flowers must be shredded, soaked in water and cooked down. Different colors can be added to the same pot to give more color or different combinations of color. Frozen flowers may give darker colors than fresh and faded flowers may give lighter colors. Using the greens with the flowers will add a darker more greenish tinge to the dye. Beware of mixing colors among species because the color turns dull. Flowers left longer in an open bath will smell but produce brighter colors (Casselmann 1980).

Soft yellow-greens can be made from just mature leaves. Picking leaves or flowers on wet days often speeds up the leaching of pigments into dye bath. Shred the leaves and boil at a low temperature. Fall blackberry and raspberry leaves produce brown and greys. Whole plants are less wasteful and will give a different shade than using just the flowers (Casselmann 1980).

Lichens can be boiled in water or fermented with ammonia after being torn up, then given a long soak at a low simmer for better color. Lichens collected in the summer yield better color than those collected in the winter. Materials dyed in lichens will have a distinct odor (Casselman 1980).

One must be able to correctly identify mushrooms for dyeing, they can be very poisonous! Spoiled mushrooms will still make good dyes. Mushrooms must be chopped up or torn up, soaked overnight, cook out the next day, and strain in cheesecloth to be ready for dyeing (Casselman 1980). Bark and roots may also be used for dyeing though they require a long cooking time. Tannin which is found in many woods can make the dye dull colored but this can be avoided by processing at a 200 F (95 C) simmer. Do no harm to a living, healthy tree! It is more ecologically sound to use deadfalls or diseased trees when collecting inner bark or roots. Spring is the easiest time to peel bark and the inner bark is usually more concentrated. Collecting bark from twigs is less damaging. Remove mosses and lichens if you want a pure color. Chop bark or roots into one square inch sizes and soak for about three to four days. Nuts are processed in a similar way: clean and crush, then put into a long soak. It will take twice the amount of nuts per dye amount needed. Berries and fruits are of course good dyes (or stains). Dead ripe berries are best. Casselman believes berries and fruits are too valuable for food to waste making dyes from. They can be combined with flour and sugar to make more permanent. A less wasteful way to use berries or fruit is to use the excess leftover from jelly making. Keep the temperature below a simmer and use a wet cloth to strain. Wetting the cloth will prevent the dye to be lost dyeing the straining rag instead of the intended material (Casselman 1980).

The following list is just some of the dye plants found in southern Illinois. Many other plants can be used in dyeing along with various mushrooms, bryophytes, and lichens. Before collecting learn your plants especially your mushrooms since they can be poisonous. Invest in a good field guide and a dye book the author recommends any of those listed on the literature cited page.

Collect responsibly, do not strip an area bare or take the lone plant. Be sure not to collect endangered plants. Always ask for permission from land owners and respect their property. However tempting it might be do not collect in national or state parks or preserves.

Browns

hemlock--*Tsuga canadensis*
 red maple--*Acer rubrum*
 black walnut-- *Juglans nigra*
 butternut--*Juglans cinera*
 alder-- *Alnus* sp.

Yellows

black oak--*Quercus velutina*
 smartweed--*Polygonum persicaria*
 white ash--*Fraxinus americana*
 barberry--*Berberis vulgaris*
 dock--*Rumex* sp.

goldenrod--*Solidago virgaurea*

hickory--*Carya tomentosa*

sassafrass--*Sassafrass albidum*

Reds

alkanet-- *Alkanna tinctoria*/*Anchusa tinctoria*

bloodroot--*Sanguinaria canadensis*

pokeberry--*Phytolacca americana*

Blues

blueberry--*Vaccinium* sp.

Elderberry--*Sambucus canadensis*

Greens

horsetails--*Equisetum arvense*

carrot--*Daucus* sp.

Rust

apple--*Malus* sp.

Beech--*Fagus grandifolia*

Literature Cited

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