



Species: Cochineal (*Dactylopius coccus*) - a scale insect which lives on various Opuntia cacti. It produces carminic acid, red-crimson dye, as a defense mechanism. Used extensively in dyeing, food, and cosmetics historically and exported from its native south and central America all over the world.

Type of dye: Anthraquinone

Colors: pink, colder pink (+ alkali), red (+ acid), orange (++ acid), purple (+ iron),

Textiles:

Mordanted Wool (Alum), Silk (Alum) and Cotton (Aluminum Acetate)
(Don't waste the cochineal dye bath on un-mordanted samples. Maybe try a small piece of an un-mordanted material just to see the difference, will not dye much.)

Modifiers: Citric Acid (Acid), Soda Ash (Alkali), Iron Sulfate

Process

In the field April 26

1. Pick cochineal from cactus leaves using stick. Put in zip lock bag.

Dyeing in the lab May 3

1. We will place all collected cochineal in a nylon strainer bag.
2. We will put the bag in a pot with warm water.
3. With a spoon or fingers squeeze the cochineal.
4. Heat up the water. Simmer at around 180f for 20 mins. IMPORTANT do not overheat!
5. Pull up the bag(s) with cochineal. Squeeze the liquid out of it into the pot.
6. Add fabric samples. Make sure they have room to move around.
7. Leave samples simmering for 10-50 mins.
8. Rinse or dip in an afterbath.

Afterbaths with modifiers

1. Make acidic, alkaline and iron solutions. Use $\frac{1}{4}$ - $\frac{1}{2}$ tablespoon of chemical to start with, mix it with hot tap water in a jar.
2. Put your un-rinsed samples in acidic, alkaline and iron solutions. Experiment with different pH levels.
3. Rinse