PIPER'S PLANT-DEV RECIPE

For orthochromatic negative film — make adjustments as needed depending on your stock. Check the specs of your film to see what safelight to use. A red safelight should work for these:

Kodak Hi Con 7363
Kodak 3378E
FOMA Cine Ortho 400

This recipe is flexible (and a bit vague) on purpose! It's just a suggestion. It's meant to be tested out more than once, and adjusted to fit your needs. If something doesn't work, tweak your recipe and try again!

I find that I'm able to use each batch of solution about 2 times in a row, but as the solution cools, the processing time will increase, and the solution exhausts with age. It will likely be dead within the day, or even within hours. So use right away, or freeze for later!

Make sure you go over your method of chemical disposal before making your chemistry. If you're working in a darkroom, set up two separate hazardous material disposal sites for your developer solution and fixer. Or, contact your local waste management authority to find out where to properly dispose of your film chemistry.

Ingredients:

- Water: 1 gallon
- ~8 fistfuls of plant material (leaves, flowers, etc.)
  - Aromatic plants, herbs, and flowers are particularly potent!
- Washing soda: 6 spoonfuls, plus more as needed
- Vitamin C powder (ascorbic acid): 2-4 spoonfuls
- Sodium hydroxide a.k.a Lye (optional): Just a sprinkle. Available as Drain-O Kitchen Crystals.
- Other darkroom chemicals: Fixer solution, plus water for wash

Equipment:

- Large pot and stove or hot plate
- Darkroom, with four bins
- Red safelight
- Gloves and goggles
- Spoon for measuring

Preparing your solution:

First, shoot film — orthochromatic negative film, to be specific. As opposed to panchromatic film, orthochromatic film is not sensitive to the full spectrum of light. When we develop the film later, we're able to use a red safelight and see the whole process, rather than developing in total darkness. The most popular choice for film is Kodak Hi Con 7363, but there are other options: Kodak 3378 is the sound film version of hi-con, and is also orthochromatic. I've also been using a lot of FOMA cine ortho 400. You can also do this process on Tri-X, but it has to be done in total darkness, and development will take longer.

For one gallon of developer, collect around **8 big fistfuls** of fresh plant material. Plants are going to be most potent in the springtime. Herbs, flowers, and aromatic plants are especially strong — avoid water plants that are hydrophobic. Mash up the plants with a mortar and pestle (or - something else, like a big rock if you're outdoors!) This breaks down the cell walls, to allow the active developer compounds to be extracted more readily when the plants are boiled.

Take **1 gallon of water** and bring it to a boil in a large pot. Once the water is boiling, add your plants, and let the mixture simmer for at least 30 mins to an hour. Cover with a lid to avoid losing water.

Once the plants have steeped for an hour, strain the plants out of the concentrate. This helps avoid scratches on your film via contact with plant matter. Let the concentrate cool to about **80 F.** (You can freeze the solution to use later!)

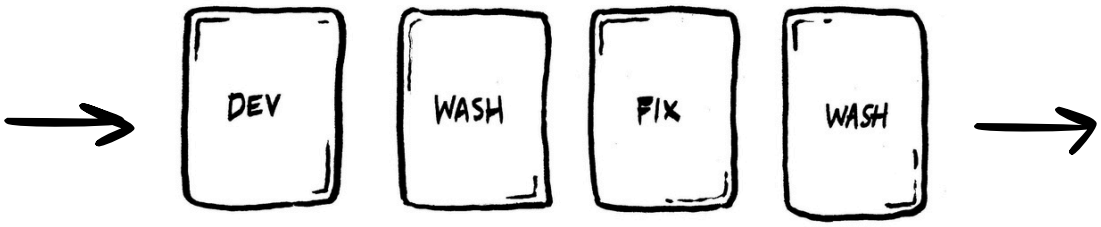
At this point, make sure you're wearing proper PPE, including gloves and goggles. The solution is less harsh than normal darkroom chemicals, but will still damage the skin, so work with caution.

Now, add washing soda as a buffer (to increase pH). The amount of washing soda that you need is going to depend on the potency of your plant solution — I like to use a pH meter to test the solution on its own to start. Start by adding about **6 spoonfuls of washing soda,** and test the pH again. Aim for a pH of **10.4.** To reach that point, I will incrementally add more washing soda — one or two spoonfuls at a time.

You can also use lye as a buffer — commercially available as Drain-O kitchen crystals. Use with caution because this is quite caustic. You will only need a sprinkle of this to increase the pH.

Next, add **2-4 spoonfuls of vitamin C powder**.This is going to be your secondary developing agent, and will help make your developer more efficient, improve contrast, and reduce fog. For potent plant concentrates (strong-smelling, with lots of herbs or flowers), use less Vitamin C. The solution will fizz when you add the Vitamin C powder.

Then it's time to develop. Work with 30 feet (or less) at a time to avoid scratching your film.

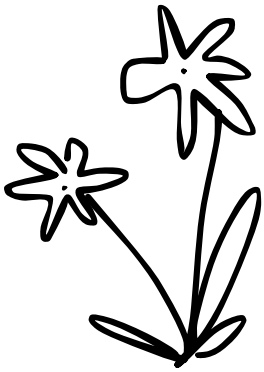


Develop —submerge your film in the plant developer, and agitate for 5-10 seconds every 30 seconds. The developing time is going to vary depending on the composition of your solution, which is why it's really helpful to work with a safelight so you can see the images appear in real time. Shoot for 7-10 minutes, but keep a close eye on your images.

Wash in a lukewarm water bath for 2 minutes.

Fix in your usual fixer solution for 3-4 minutes (or as long as your fixer calls for). After fixing, it is safe to turn on the lights.

Wash in lukewarm water for another 2 minutes. Add some drops of Photo Flo per L of water to your wash if desired, and gently agitate. Dry the film on a rack or in a drying closet.



Informed by the work of David Bendiksen, Phil Hoffman, Katherine Bauer, and Dr. Scott Williams