

Testing your tincture: Plant Pigments: Paper Chromatography Test

This experiment will allow you to separate some of the pigments hidden in your plant. The following information may help you identify some of the compounds you see:

Chlorophyll A = bright green

Chlorophyll B = dull or khaki green

Carotenoids = lemon yellow to orange

Anthocyanin = pale pink, red, purple or blue

Xanthophyll = yellow

Materials you will need:

- Black marker
- Your plant tincture (suggestions: spinach, carrot, red cabbage, or colorful flowers)
- Pieces of coffee filter paper cut into strips 1 cm wide and 12 cm long
- Test tubes
- Solvent made of 20 ml water, 20 ml rubbing alcohol, and 5 ml vinegar
- Metric ruler
- One medicine dropper for each tincture you will test
- Pencil
- Test tube holder

Lab activity:

1. Make a tiny pencil mark 2 cm from the bottom of each of the filter papers. This is where you will place your pigments.
2. With the marker make a dot, about the size of a pencil eraser, on the tiny pencil mark you made on one of the filter strips.
3. For each plant tincture you wish to test, use a separate medicine dropper and strip of filter paper. Now place a drop of the plant tincture on the tiny pencil mark of another filter strip. Let the drop of tincture dry, then place more tincture directly over it. Repeat this step 4 times.
4. For each of the filter papers, prepare the test tube by pouring the solvent until it reaches 1 cm high.
5. Place each of the marked filter papers into separate test tubes. Press the papers down to the bottom of each tube so the solvent can be absorbed by the paper. The solvent should not touch the pigment. Keep the test tubes upright in a test tube holder.
6. Observe the filter paper as the pigments begin to separate in each test tube. It usually takes 20 to 60 minutes for the pigments to fully separate.

Once the pigments have fully separated, take them out of the test tubes and place them on a sheet of paper or a tray to dry.