WestFest

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Biodegradable Paint Recipes

From the Living Art & Ecology Lab at The Ohio State University

Materials

Fruits, vegetables, peels, seeds, leaves, or roots	Cooking pot and stove (for dyes)	Electric coffee grinder (for dry pigment)
Agar powder or gelatin	Mortar & pestle	Small bowl and spoon
Strainer and/or coffee filter paper	Measuring spoons, if desired	Small jars with lids to store your product

Note: Adult supervision/assistance is strongly recommended for these recipes

Instructions for Dye

1. Wash your plant materials and chop into small pieces.
2. Place chopped plant materials in a pot and add just enough water to cover.
3. Simmer on low heat for at least 15 minutes, then turn off stove and allow the mixture to steep overnight for 12-18 hours.
4. Strain out the plant matter, and you have dye! This can be used in dye baths or thickened with agar powder to create ink.
5. For higher extraction, you can freeze or puree your plants before cooking, and then filter through paper coffee filters when finished. You can also give your dye a second round of cooking on low heat if you want to evaporate out extra water and create a more concentrated dye.

Instructions for Pigment

1. Clean your plant materials and chop into small pieces.
2. Dehydrate them thoroughly, either in the oven on low heat for a few hours, or in the sun for a day or two. If using the oven, check regularly so they don’t burn!
3. When fully dehydrated, grind in an electric coffee grinder until you have a very fine powder. If it feels gritty, it is still too coarse. NOTE: it is recommended to wear a dust mask/KN95 mask when working with fine particulates of any kind. Plant dust may be organic, but it still doesn't belong in your lungs!

Store your pigment or dye in a sealed jar when not in use. Dehydrated pigment can last for months to years. Dye may need to be kept in a cool dark place (fridge or cellar) to avoid bacterial growth depending on the chemical composition, but some dyes made from peels or pits will contain natural anti-microbial properties. You can also add a couple drops of clove or thyme oil as a preservative.

How to Mix Paint

There are a variety of binders you can use to mix your pigment or dye depending on the viscosity and texture you are looking for. These are just a few options! For more recipes and ideas, see the links below.

Watercolors

You can mix your pigment or dye directly with filtered water to the desired color. I recommend starting with about 1/8 teaspoon (or less) of color, and half or equal amounts water. If it is too thin, it can be thickened with agar powder or gum arabic to the desired consistency.

Honey Watercolors

Mixing honey into your watercolors will improve pigment suspension and add a nice gloss to your finished painting. You can experiment with ratios. I find one part honey to two or three parts water works well. Honey is naturally antimicrobial and antifungal, which will help your painting last a long time.

Oil Paints

Linseed (flax) oil or walnut oil are good choices. Start with a small amount of pigment and add oil a couple drops at a time until you reach the desired consistency. I use a mortar and pestle for this, you can also use a palette and glass muller. It is recommended to add a drop of clove, thyme, or peppermint oil as a preservative. NOTE: Water-based dyes will NOT mix with oil!

Egg Tempera

This is a professional medium pre-dating oil paint that holds its color and gloss very well and can last for hundreds of years. To start, carefully separate an egg yolk, leaving the whites. Dry the egg yolk by carefully rolling it across your palms or rolling it on a paper towel. When all the white is removed, hold the yolk over a dish and break the skin, allowing the contents to flow into the dish. Discard the yolk membrane. Now you're ready to mix in your pigment! It dries quickly and does not store well when fresh, so only mix what you will immediately use. You can store egg yolk in a closed container in the fridge for up to several days.

Sources

OSU Living Art & Ecology Lab

Natural Earth Paint. (2022). *Recipes*. Retrieved from https://naturalearthpaint.com/blog/tag/recipes

USEPA. (2023). *Composting at Home*. Retrieved from https://www.epa.gov/recycle/composting-home