

Natural Color Extraction Method for Turmeric

Goal:

Extract a **bright yellow pigment** rich in **curcumin** that can replace **FD&C Yellow No. 5 (Tartrazine)** in food, cosmetics, and textiles.

Method 1: Aqueous-Alcohol Extraction for Liquid Use

Method 2: Dry Powder (for high stability and export)

Method 1: Liquid Extract (For local food/cosmetic use)

Materials:

- Fresh or dried **turmeric root**
 - **Ethanol** (food-grade 70% alcohol or white overproof rum)
 - **Distilled water**
 - Blender or grater
 - Fine mesh filter or cheesecloth
 - Amber glass bottles
 - Gloves (turmeric stains)
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Extraction Steps:

1. Preparation

- Wash and peel turmeric roots.
- Grate or chop into small pieces.
- Ratio: **200g turmeric : 1L extraction solvent** (ethanol:water = 70:30)

2. Maceration

- Place turmeric in a glass jar.
- Pour over ethanol-water mixture.
- Seal and **let soak for 3–5 days** in a cool, dark place.

- Shake once per day.

3. Filtration

- Strain using cheesecloth or fine sieve.
- Filter again through coffee filter for clarity.

4. Concentration (Optional)

- Evaporate part of the alcohol using **low-heat (under 50°C)** or a fan in a ventilated space.

5. Storage

- Store in amber glass bottles at room temp or refrigerate.
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Resulting Product:

- Bright yellow extract, **oil-soluble**
 - Suitable for:
 - **Curries & marinades**
 - **Lip balms, creams**
 - **Textile dye (with mordants)**
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Shelf Life:

- With alcohol: **6–12 months** at room temperature
 - Without preservative: 2–4 weeks refrigerated
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Method 2: Turmeric Powder (Best for food/dry mixes/export)

Materials:

- Fresh turmeric roots
 - Knife, grater, tray, dehydrator or sunlight
 - Grinder (spice or coffee mill)
 - Airtight containers
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Drying & Powdering Steps:

1. **Wash, peel, and slice** turmeric thinly.
 2. **Dry** using:
 - Solar dryer (3–4 days)
 - Electric dehydrator (55°C for 6–8 hrs)
 3. Ensure turmeric is **bone-dry and brittle** before grinding.
 4. Grind to **fine powder** using spice grinder.
 5. Sieve for uniform texture.
 6. Store in **dry, airtight glass containers**.
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Quality Tips:

- Protect from light and moisture.
- Use silica gel packets in storage for commercial packaging.
- You may standardize curcumin content for export by partnering with a lab.

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