

There is definite merit in using **waste or by-products** from other sorrel and turmeric processes as **raw material for natural food color production** — especially if our goal is **low-cost**, **sustainable**, and **value-added** manufacturing. Here's a breakdown:

Why Use Sorrel & Turmeric By-products?

Benefits:

Advantage	Explanation
Low or zero cost input	Waste or pomace is often discarded or sold cheaply
Sustainability	Reduces agro-waste and supports circular economy goals
Pigment-rich residue	Even after juice or oil extraction, much color remains
Marketing appeal	“Upcycled” or “zero waste” food products are in demand
Eligible for grants	Many green and agro-processing grants support upcycling initiatives

Sorrel Waste (Calyx Pomace)

Common Source of Waste:

- Sorrel beverage makers (juice factories, holiday drink bottlers)
- Tea manufacturers (flower infusion residues)

What's Left in the Waste:

- **Residual anthocyanins** (red pigment)
- Dietary fiber, antioxidants

How to Use:

- **Dry and powder** the calyx waste for:
 - Herbal teas
 - Soap colorants
 - Natural pigment for sauces and jellies
 - **Aqueous re-extraction** using warm acidified water still yields usable color
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Turmeric Waste (Press Cake or Dregs)

Common Source of Waste:

- Turmeric oil extraction (CO2 or steam distillation)
- Juice or curcumin extraction plants

What's Left in the Waste:

- **Bound curcumin**
- Fiber and trace oils

How to Use:

- **Dry and micronize** into fine powder
 - Still retains yellow color for dry blends, spice rubs, or dye
- **Alcohol or alkaline re-extraction** can recover leftover curcumin



Considerations for Use

Factor	Note
Hygiene	Ensure waste is fresh and not moldy or fermented
Drying method	Use low heat or solar drying to preserve pigments
Residual solvent/oil	If waste is from solvent extraction, ensure no harmful residues
Food-grade approval	Must meet local standards (BSJ, MOHW) if used in consumables

Real-World Examples

- **Upcycled beetroot and carrot pulp** used in natural baking color powders
- **Spent hibiscus calyces** reused in tea bags and chutneys
- **Turmeric fiber cake** added to vegan capsules and pet food



Next Step:

- Contact sorrel processors during Christmas production runs

- Ask turmeric oil or beverage companies about leftover press cake
- Partner with juice bars or farms to collect, dry, and test waste

Prepared by Quality Solutions Limited (QSL)