



Food Adulteration in India

Published On: 24-11-2025

Context

India continues to report recurring cases of **chemical adulteration in food products**, particularly through the illegal addition of **non-permitted synthetic dyes**. Among these, **Auramine O** has emerged as a major contaminant, especially in spices such as turmeric and in coloured food items.

About Auramine O

- **Chemical nature:**

oA **bright yellow, odourless crystalline powder**, industrially produced as a synthetic dye.

- **Industrial Uses:**

oDyeing of **paper, textiles, leather**

oUsed as an **antiseptic and fungicide**

- **Regulatory status:**

o**Not approved** for use as a food colour in **India, European Union, and United States**.

oFalls under the category of **industrial dyes**, not meant for ingestion.

Health Risks

Auramine O poses significant toxicological risks:

1Organ Toxicity

oCauses **liver damage, kidney impairment, and splenomegaly** (enlarged spleen).

2Mutagenic Effects

oAlters **genetic material**, raising long-term health risks.

3Carcinogenic Potential

oClassified by the **International Agency for Research on Cancer (IARC)** as

Group 2B: Possibly carcinogenic to humans.

4Behaviour in Food Chains

oPersistent in the body; cumulative exposure increases health hazards.

Why It Is Used in Food Adulteration

- Low cost compared to natural or approved food colours.
- Produces a **bright, uniform yellow appearance**, making products look ‘high quality’.
- Easy availability in chemical markets and weak enforcement mechanisms.
- Commonly detected in:
 - **Turmeric (whole and powder)**
 - **Pulses**
 - **Sweets and condiments**
 - **Pickles and masala mixes**

Regulatory and Governance Issues in India

FSSAI Regulations:

- o Strict prohibition of non-permitted colours under *Food Safety and Standards Act, 2006*.
- o Periodic surveillance and testing drives by state food safety departments.

Challenges:

- o Fragmented enforcement and limited testing infrastructure.
- o Poor traceability in spice supply chains.
- o High informal market presence in states like Maharashtra, Andhra Pradesh, Tamil Nadu.