

Food Adulteration in India

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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:

oNot 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:

1**Organ 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.

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040 Phone: **044 4353 9988 / 98403 94477** / Whatsapp : **09710729833**

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:

oStrict prohibition of non-permitted colours under Food Safety and Standards Act, 2006.

oPeriodic surveillance and testing drives by state food safety departments.

Challenges:

oFragmented enforcement and limited testing infrastructure.

oPoor traceability in spice supply chains.

oHigh informal market presence in states like Maharashtra, Andhra Pradesh, Tamil Nadu.

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