

Tests Reveal Heavy Metals in Organic Turmeric Powder

Non-organic brands perform better in tests

Organic foods are becoming increasingly popular in the country. However, are they safe? How true are their health claims? Why are they so expensive? In India, there are no quality standards for organic foods. How can a consumer be sure that the product he is purchasing is genuinely organic?

Consumer Perceptions

Consumer Education and Research Centre (CERC) conducted a consumer survey and found that:

- 99% respondents were aware of the term 'organic foods'.
- Most thought they were 'natural', 'lacking pesticides' and 'good for environment'.
- Incorrect perceptions included food that was 'traditional', 'herbal' or 'without antibiotics'!
- Only 10% bought organic foods regularly or occasionally.
- Organic vegetables and fruits were the most popular products followed by powdered spices.
- People did not buy organic foods because they were expensive, not easily available and they had doubts about the origin/source of product.
- 17% respondents purchased online.

What is organic food?

According to the National Programme for Organic Production (NPOP), which certifies process standards in India, "organic products are grown under a system of agriculture without the use of chemical fertilisers and pesticides with an environmentally and socially responsible approach".

Our Tests

We tested six brands of organic turmeric powder for safety, especially for the presence of heavy metals, namely lead, copper, tin, zinc, cadmium, arsenic and mercury, and pesticide residues. The brands tested were *Asal*, *24 Mantra Organic*, *Fabindia Organics*, *Morarka Organic Down to Earth*, *Sattvic Organic* and *Natural* and *Vikalp Organic Product*.

We also tested two brands of non-organic turmeric powder - *Everest* and *Golden Harvest* - for the purpose of comparison.

The samples were tested against the values set by the Food Safety and Standards (Contaminants, Toxins & Residues) Regulations, 2011 for non-organic turmeric powder.



High Copper and Arsenic

Three organic brands had higher than permissible levels of Copper. **Fabindia** had the highest level of 7.20 mg/kg as against the limit of 5.0 mg/kg. Arsenic was also found to be beyond the safe limit in four organic brands. While the standard limit is 0.1 mg/kg, **Asal** had the highest level of 0.52 mg/kg.

Interestingly, the two non-organic brands were not only free of pesticides but had heavy metals within limits as well.

These results were startling, to say the least, since they indicate that despite the touted health benefits of organic foods, it is the non-organic brands of turmeric powder which fared better in the tests than the organic brands.

Free of Pesticides and Lead

No pesticide residues were detected in any of the organic brands. The six brands were also free of lead and tin. Zinc, mercury and cadmium were within the limits.

Highly Priced

You may be paying as much as 270% more for organic turmeric powder! (See table). Organic turmeric powder brands purchased from the Indian market are priced between Rs. 25 and Rs. 85 per 100 g. Non-organic brands are priced between Rs. 21 and Rs. 25 per 100 g.

Adverse effects of heavy metals

Long-term exposure to excessive amounts of Copper could cause male infertility, liver damage, kidney failure, coma and death. Long-term exposure to Arsenic from food can cause cancer, skin lesions, developmental effects, cardiovascular disease, neurotoxicity and diabetes.

Why should there be such a difference in price for such a commonly used item when non-organic brands are also devoid of pesticides and have heavy metals within safe limits? Isn't it better for consumers to buy non-organic brands if this is the case?

Lack of Labelling Information

All brands gave incomplete information as per the Food Safety and Standards (Packaging and Labelling) Regulations, 2011. **Asal** was the worst performer and flouted all norms. The **Asal** product was packed in a plastic packet with handwritten weight information.

No Ecomark: All brands used polythene bags for packaging. To reduce the adverse effects on the environment, manufacturers should follow the norms of Ecomark. No brand had Ecomark certification.

High on Heavy Metals and Price

		Organic						Non-organic	
Parameter (mg/kg)	Std. Limits* NMT	Asal	24 Mantra	Fabindia	Morarka	Sattvic	Vikalp	Everest	Golden Harvest
Lead	10.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.20	N.D.
Copper	5.0	4.38	5.47	7.20	3.49	5.71	4.31	4.57	4.51
Zinc	25.0	7.04	9.11	19.8	5.02	6.48	13.22	14.80	8.83
Arsenic	0.1	0.52	0.25	0.18	N.D.	0.44	N.D.	0.08	0.05
Tin	Nil	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium	0.1	N.D.	0.07	0.08	N.D.	0.07	0.05	N.D.	N.D.
Mercury	1.0	N.D.	N.D.	N.D.	N.D.	N.D.	0.05	0.15	0.17
Price in Rs/100gm		25.0	35.0	85.0	65.0	46.0	33.0	22.0	25.0
How much more you are paying for organic brands** (%)		8.7	52.2	269.6	182.6	100	43.5		

N.D. = Not Detected (Detection limit 0.050 mg/kg), * As per the Food Safety and Standards (Contaminants, Toxins & Residues) Regulations, 2011, NMT = Not more than, Failing brands shown in red, ** Average price of non-organic brands taken as Rs. 23.

Manufacturers' Response

CERC wrote to manufacturers of organic brands to get their views. They responded as follows:

Asal: “We have received FSSAI (Food Safety and Standards Authority of India) certificate and have initiated the process for meeting labelling norms.”

Vikalp shared their views on telephone. The manufacturer said: “We do not believe in certification. Our business works on mutual trust with farmers. We are a very small organisation. Hence certification and







labelling requirements are difficult to follow.”

Sattvic shared their views on telephone. The manufacturer said: “The farmers are certified and we trust them. We have not tested the product so far but plan to do so in future. We will take up the issue of presence of heavy metals with the farmers. We will look into the matter of proper labelling.”

Morarka said FSSAI should take the lead in notifying standards for organic foods. It claimed that all its products conform to APEDA (Agricultural and

Multiple Logos Confuse Consumers

All organic brands had multiple certification logos, often from different countries. In fact, one brand **Sattvic**, had five logos - two Indian and one each of US, South Asia and Netherlands!

Brands	Logo	What does it mean?
<ul style="list-style-type: none"> • Morarka • Fabindia • Sattvic • 24 Mantra 		‘India Organic’ certifies that a food product conforms to the National Standards for Organic Products established in 2000.
<ul style="list-style-type: none"> • Morarka • Sattvic • 24 Mantra 		‘USDA Organic’ is a certification mark provided by the U.S. Department of Agriculture.
<ul style="list-style-type: none"> • Morarka • 24 Mantra 		The ‘organic leaf’ symbolises the unique set of EU rules organic products are complying with.
<ul style="list-style-type: none"> • Morarka 		OneCert verifies compliance with multiple international standards including: US, Europe, and Japan. OneCert Asia is accredited by NPOP in India.
<ul style="list-style-type: none"> • Sattvic 		This is the logo of Agricultural and Processed Food Products Export Development Authority (APEDA) of India giving a seal of approval for quality.
<ul style="list-style-type: none"> • Sattvic 		The International Competence Centre for Organic Agriculture (ICCOA) logo is applicable in South Asia.
<ul style="list-style-type: none"> • Sattvic 		This Netherlands based organisation is engaged in inspection and certification.
<ul style="list-style-type: none"> • Fabindia 		The Swiss SGS Organic Production Standard is a worldwide programme for organic production and processing.
<ul style="list-style-type: none"> • Fabindia 		Fabindia’s website says “Products displaying our Green logo are ‘Fully Certified’ Organic. All processes, from growing to preparing to packing have been done according to National and International standards, verified by accredited agencies.”
<ul style="list-style-type: none"> • Fabindia 		Fabindia’s website says “Products displaying our Yellow logo are ‘Natural’. This category contains products produced by small farmers who use purely organic techniques, but who have decided to not yet register for certification.”
<ul style="list-style-type: none"> • Golden Harvest • Everest 		AGMARK is a certification mark on agricultural products in India, assuring consumers that they conform to a set of standards approved by the Directorate of Marketing and Inspection, an agency of the Government of India.



Manufacturers' Claims & the Facts

Organic brands make claims that their products are organic, natural and free of chemicals and improve quality of life, but our test report contradicts these. Their claims misguide consumers and take them for a ride.

Organic Brands	Claims	Facts
<i>Sattvic</i>	Organic and natural, free of harmful chemicals, improves quality of life	No pesticides but Arsenic and Copper beyond the safe limits.
<i>24 Mantra</i>	Reduce health risks with organic purity	No pesticides but Arsenic and Copper beyond the safe limits.
<i>Fabindia</i>	Organic	No pesticides but Arsenic and Copper beyond the safe limits.
<i>Vikalp</i>	Organic	No pesticides. No logo or certification that product is organic
<i>Asal</i>	Organic	No pesticides. No logo or certification that product is organic.
<i>Morarka</i>	Organic	No pesticides. Heavy metals within safe limits.

Processed Food Products Export Development Authority) standards for organic products.

Fabindia asked for details. We provided the test findings and details of samples. The company had not responded to our queries till the time of going to press.

24 Mantra did not respond to our query on presence of heavy metals.

AREAS OF ACTION

Need to Create Awareness

- Consumers interpret the term 'organic' in a variety of ways. This indicates that they do not have a correct understanding of the term.
- 65% respondents were not aware of organic certifications and logos. Consumers should look at the labels carefully and check for certification.

Appeal to Regulatory Authorities

- Give a clear and detailed definition when a manufacturer can claim a product to be organic.
- Bureau of Indian Standards (BIS) should set specific mandatory standards for organic foods.
- *In response to our appeal, we received a letter from FSSAI saying that BIS has constituted a committee to formulate standards for organic foods. Once the standards are finalised by BIS necessary action would*

be taken by FSSAI for their adoption under the Food Safety and Standards Regulation, 2011.

- Inclusion of organic foods under the Food Safety and Standards (Contaminants, Toxins & Residues) Regulations, 2011.
- Manufacturers should be made to follow labelling norms.
- Regular monitoring of organic food quality.
- To make Ecomark certification for packaging mandatory.
- There should be one certification mark for products sold in India.
- There is a need to monitor organic products sold online.
- Advertising claims should be monitored.
- Efforts should be made to increase public awareness.

Appeal to Manufacturers

- Ensure your products meet the standards and get your products certified.
- Follow norms for labelling.
- Use eco-friendly packaging and get Ecomark certification.
- Get ECOMARK certification for packaging.
- Don't confuse consumers with multiple logos.

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