



## Fortification of Rice

**For Prelims:** Sickle-cell anaemia, Thalassemia, FSSAI

**For Mains:** Issues with Fortification of Food and way ahead

### Why in News?

According to the recent findings, the Union government's plan to **distribute subsidised iron-fortified rice may do more harm than good to Adivasis, or indigenous populations**, who suffer from [sickle-cell anaemia](#) and [thalassemia](#) and are genetically prone to these ailments.

### What is Food Fortification?

- **Fortification:**
  - Fortification is the **addition of key vitamins and minerals** such as iron, iodine, zinc, Vitamin A & D to staple foods such as rice, milk and salt to improve their nutritional content.
  - These nutrients may or may not have been originally present in the food before processing.
- **Fortification of Rice:**
  - According to the Food Ministry, **fortification of rice is a cost-effective and complementary strategy** to increase vitamin and mineral content in diets.
    - **According to FSSAI norms**, 1 kg fortified rice will contain iron (28 mg-42.5 mg), folic acid (75-125 microgram) and Vitamin B-12 (0.75-1.25 microgram).
  - In addition, **rice may also be fortified with micronutrients**, singly or in combination, with zinc, Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3 and Vitamin B6.

### What is the Need of Food Fortification?

- **India has very high levels of malnutrition** among women and children. According to the Food Ministry, every second woman in the country is anemic and every third child is stunted.
- India has slipped to **101<sup>st</sup> position in the [Global Hunger Index \(GHI\) 2021](#)** of 116 countries, from its 2020 position of 94<sup>th</sup>.
- The deficiency of micronutrients or micronutrient malnutrition, also known as “hidden hunger”, is a serious health risk.
- **Rice is one of India's staple foods**, consumed by about two-thirds of the population. Per capita rice consumption in India is 6.8 kg per month. Therefore, fortifying rice with micronutrients is an option to supplement the diet of the poor.

### What are the Issues with the Fortification of Rice?

- **Inconclusive Evidence:**
  - Evidence supporting fortification is **inconclusive and certainly not adequate** before major national policies are rolled out.
  - Many of the studies which FSSAI relies on to promote fortification are **sponsored by food**

**companies** who would benefit from it, leading to conflicts of interest.

▪ **Hypervitaminosis:**

- According to some studies published in the medical journal Lancet and in the American Journal of Clinical Nutrition which show that both anaemia and Vitamin A deficiencies are overdiagnosed, meaning that mandatory fortification could lead to hypervitaminosis.
  - Hypervitaminosis is a condition of abnormally high storage levels of vitamins, which can lead to various symptoms such as over excitement, irritability, or even toxicity.

▪ **Toxicity:**

- One major problem with chemical fortification of foods is that **nutrients don't work in isolation but need each other for optimal absorption.**
- Undernourishment in India is caused by monotonous cereal-based diets with low consumption of vegetables and animal protein.
- **Adding one or two synthetic chemical vitamins and minerals will not solve the larger problem,** and in undernourished populations can lead to toxicity.
- A **2010 study that showed iron fortification causing gut inflammation** and pathogenic gut microbiota profile in undernourished children.

▪ **Cartelisation:**

- Mandatory fortification **would harm the vast informal economy of Indian farmers and food processors** including local oil and rice mills, and instead benefit a small group of multinational corporations who will have sway over a Rs.3,000 crore market.

▪ **Decrease Value of Natural Food:**

- Dietary diversity was a **healthier and more cost-effective way to fight [malnutrition](#).**
- **Once iron-fortified rice is sold as the remedy to anaemia,** the value and the choice of naturally iron-rich foods like millets, varieties of green leafy vegetables, flesh foods, liver, to name a few, will have been suppressed by a policy of silence.

## Way Forward

- The **right to informed choices about one's food is a basic right.** The right to know what one is consuming is also a basic right. In the case of rice fortification, it is seen that no prior informed consent was ever sought from the recipients.
- There is a **need for precision because no nutrient taken in excess will do you good.**
  - Universal fortification is not the answer for nutrition deficiencies.

**[Source: TH](#)**

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