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News: Tea Fortification

- A recent study conducted in Maharashtra on 43 women to assess the impact of fortifying tea with folate and vitamin B12 has found a significant increase in Folate and Vitamin B12 levels. It also highlighted a significant increase in hemoglobin levels.

Tea Fortification

- Tea Fortification is the **injection of Folate and Vitamin B12 in the Tea dust to increase the intake of both by the rural women in India.**

Significance

- **Countering Anaemia and NTDs:** According to the new study, **fortifying tea with folate and vitamin B12 may help counter anaemia and NTDs in Indian women as tea is the most common beverage drunk in India.**
- **The majority of Indian women have a poor dietary folate and vitamin B12 intake resulting in their chronically low vitamin status, contributing to anaemia and the high incidence of folate-responsive neural-tube defects (NTDs) in India.**

- **Vitamin B12 and folate** are both important for the production of red blood cells in the body.
- **Vitamin B12** is necessary for the proper absorption and utilization of folate in the body; folate deficiency can cause severe birth defects (NTDs).

Issues with Tea Fortification

- **Limited Cultivation:** Tea is largely grown and processed in the highlands of only 4 states: Assam, West Bengal, Tamil Nadu and Kerala.
- **Lack of Infrastructure:** Many tea-growing areas lack adequate infrastructure for processing and packaging fortified tea.
- This includes facilities for blending and packaging tea, as well as transportation and storage infrastructure.
- **Dietary Constraints:** Around 70% of the population lives in rural villages, where cereal grain is more often grown, milled, and purchased locally. And diets vary considerably according to cultural, religious, and ethnic differences and beliefs.

Food 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.
- Food fortification is a **“complementary strategy”** and not a replacement of a balanced & diversified diet to address malnutrition.
- Department of Food and Public Distribution under the Ministry of Consumer Affairs recently approved **a centrally-sponsored pilot scheme on fortification of rice and its dispersal through the Public Distribution System (PDS)**.
- **Food Safety and Standards (Fortification of Foods) Regulations, 2018** has **prescribed standards for fortification** of various food products such as all fortified foods must not fall below the minimum level of micronutrients.

Mandatory food Fortification

- Some **food items are to be compulsorily fortified in India**.
- Last year, **FSSAI considered it mandatory to fortify edible oil with vitamin A and D ‘so that people of India can enjoy better immunity with good health’**.

- The country is also considering ‘compulsory’ fortification of **rice with Vitamin B12, Iron, and Folic Acid from 2024 to address malnutrition and anaemia crisis in the country.**
- The Union Government has also started **distributing fortified rice through the mid-day meal scheme and Integrated Child Development Scheme (ICDS) programme** citing widespread nutritional deficiencies.
- The central government has also **initiated a three-year pilot scheme on rice fortification and supply via public distribution (PDS) in 15 districts across the country.**
- Recently, **experts have flagged issues against mandatory food fortification.**
- In the letter, the signatories including Right to Food Campaign, a non-profit working for food rights, and the Alliance for Sustainable and Holistic Agriculture, an informal network working to strengthen food diversity and nutrition, pointed out that the **mandatory fortification is detrimental to health and “it would bring socio-economic impacts such as market shifts in favor of large corporations, loss of livelihoods for small and informal players, monocultures in diets and reliance on packaged foods.”**
- Experts also pointed out that **in undernourished populations such as India’s, the key problem is protein inadequacy** as a result of monotonous cereal-based diets along with low consumption of vegetables and animal source foods such as

meat, poultry, eggs, and fish. The fortification can lead to toxicity, including gut inflammation, they say.

Tea

- Tea is a high-land plantation crop which is cultivated in regions having moderate temperature with heavy rainfall.
- It thrives well in Monsoon type of climate.
- The tea plant is highly adaptable and can grow in a broad range of conditions.
- The tea plant can handle a light frost and even snow, but not heavy freezes or prolonged cold winters, and, unlike some plants, it does not require a period of cold dormancy.
- It can thus grow from subtropical climates to tropical climates, but generally requires a fair amount of humidity and rainfall during the growing season.
- Although it can grow in hot tropical climates if they are sufficiently humid, the highest-quality teas mostly come from subtropical climates with some seasonality.
- The seasonality of precipitation is important in influencing the quality of tea, and tea leaves harvested at different times will produce a finished product with vastly different characteristics.

- **Seasonality can include a simple wet-dry pattern** like the Asian Monsoon, or a bimodal precipitation pattern, with two distinct wet seasons and two distinct dry seasons in each year, like occurs in parts of Sri Lanka and Kenya.
- Tea, a water-loving plant, tends to be grown on the **windward sides of mountain ranges**.
- The tea plant can often only be grown within a certain range of altitudes.
- **The highest commercial tea operations are around 8000 feet** (about 2400m) in elevation.
- **Indian tea is among the finest** in the world owing to strong geographical indications, heavy investment in tea processing units, continuous innovation, augmented product mix and strategic market expansion.
- The main tea-growing regions are in the **Northeast** (including Assam) **and in north Bengal** (Darjeeling district and the Dooars region).
- Tea is also grown on a large scale in the Nilgiris in South India.
- **India is one of the world's largest consumers of tea, with about three-fourths of the country's total produce consumed locally.**
- As of 2019, India is the **second-largest tea producer in the world** with a production of 1,339.70 million kgs, **only behind to China**.
- India stands **fourth in terms of tea export after Kenya** (including neighbouring African countries), **China and Sri Lanka**.