

FAQs

on

Edible Oil Fortification



FORTIFIED

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**FOOD SAFETY AND STANDARDS
AUTHORITY OF INDIA**

Inspiring Trust, Assuring Safe & Nutritious Food
Ministry of Health and Family Welfare, Government of India



FAQs on Edible Oil Fortification

Q: What is Edible Oil Fortification?

- A. When vitamins are added externally to edible oil to enhance its nutritional value, it is called edible oil fortification. Any type of oil like Soybean Oil, Palmolein Oil, Groundnut Oil, Cotton Seed Oil, Mustard Oil etc. can be fortified.

Q: Why fortify edible oils and fats?

- A. Recent National Nutrition Monitoring Bureau (NNMB) survey and a Report of the expert group of ICMR in 2012 has stated that India has very high burden of Vitamin A and D deficiencies, amongst both young children and adults particularly in urban areas are physically less active and have a very limited exposure to sunlight.

Since oil is consumed by all population groups, fortification of oil with certain micronutrients is a good strategy to address micronutrient malnutrition.

Q: What is the feasibility of edible oil fortification in India?

- A. Oil fortification technology is simple. Equipment are readily available and the concept, technology and quality control procedures are well established for sustained production within India. Hence, appropriately and adequately fortified oil can be made available through the regular open market commercial channels or through the public funded programmes like the ICDS, MDM and PDS.

Q: What are the micronutrients which can be used as fortificants to fortify edible oil?

- A. Micronutrients are the nutrients which are required in miniscule amount by body but have important role to play in the body functions. Vitamins and minerals are classified as micronutrients. Micronutrients help in formation of hormones and enzymes.

Various micronutrients like Vitamin A, D, E, omega 3 fatty acids etc., which are fat soluble, have better stability in edible oil than other food vehicles and can be uniformly distributed in oil, are used as fortificants to fortify edible oil.

Q: Is the micronutrient or premix used of vegetarian source?

- A. Yes, premix is manufactured from vegetarian sources. Vitamin A in the form of Retinyl Acetate/Retinyl Palmitate/Retinyl Propionate and Vitamin D2 (Ergocalciferol) is added.

Q: How safe is fortified edible oil for consumers?

- A. Experiences in countries that are already fortifying edible oil (United States since 1930, Bangladesh, Nigeria, Morocco, Yemen, Pakistan, Tanzania, Indonesia, Uganda) show that fortified edible oil is completely safe for consumers and the benefits are enormous.

Govt. of India mandated fortification of “Vanaspatti” or the Hydrogenated oil fats and margarine, with vitamin A in 1953. Madhya Pradesh, Gujarat and Rajasthan have been fortifying edible oil. The amount of vitamins added to oil is usually set at a proportion of the individual's daily requirement and is usually less than one third of the total Recommended Dietary Allowances (RDA).. By applying strict monitoring and supervision measures, companies can ensure that there is no excessive intake of any vitamin.

Q: What are the levels of vitamin A and D in fortified edible oil?

- A. Level of vitamin A is 25000 IU per liter while it is 2000 IU per liter for vitamin D2. Based on the estimated consumption level of edible oil between 20g and 30g per person per day, the following levels of fortification with vitamin A and D2 would provide 25% - 30% of the RDA.
- Vitamin A : 25 IU per gram of oil
(as Retinyl acetate, Retinyl Palmitate, Retinyl Propionate)
 - Vitamin D2 : 4.5 IU per gram of oil
(as Ergocalciferol)

Q: How does fortification affect the shelf life of edible oil?

- A. Fortification has no impact on the shelf-life of any kind of edible oil. The vitamins have a shelf life of their own although they do become less active over time.

Q: Does fortification change appearance, taste, texture and flavor of the edible oil?

- A. No. When deciding on the appropriate premix for edible oil fortification, only those vitamins are considered, which will not change the appearance, taste, texture and flavour of the oil/food. The concept is based on the fact that the consumer buying behavior should not be affected by the fortification process.

Q: Is edible oil fortification costly?

- A. Fortification of oil is relatively inexpensive and affordable. The cost of fortification per se is just about 8-10 paise per kg., depending upon the type and number of micronutrients added. Micronutrient premixes for oil are made within India and are readily available at competitive price, depending on the type and number of micronutrients added.

Q: Are there any international regulations and specifications for edible oil fortification?

- A. Food Safety and Standards Authority of India (FSSAI) has specified standards for levels of oil fortification in India. These are:
Vitamin A: 25 IU/g of oil (Retinyle acetate, Retinyle plamitate, and retinyle propionate)
Vitamin D2: 4.5 IU/g of oil (Ergocalciferol)

WHO has released the guidelines for fortification of staple foods, in which it recommends edible oil fortification.

Q: What is the process for storing premix used for fortification of edible oil?

- A. Premix should be stored at 20-25 degree centigrade temperature, in a cool, dry place, preferably in an air conditioned room.

Q: Can the premix used for edible oil fortification be consumed directly?

- A. No, never. Premix has micronutrients in the range of million grams or million international units, which is toxic for the body if consumed directly.

Q: Will there be any loss of micronutrients after heating the fortified edible oil?

- A. As per various scientific evaluations, heating does not destroy vitamins completely, though frying can destroy vitamins (A, D and E) to some extent. The loss of vitamin A, D and E depends on the number of times the same oil is used for frying. There is an estimated loss of just about 20-25% of the vitamins originally added as fortificants. After 4 repeated frying, about 60% of the original levels of added vitamin are lost. have similar stability properties to heat and light.

Q: What claims is a company allowed to make to market their fortified edible oil?

- A. Oil producing and packaging companies can state that their product (edible oil) is fortified with vitamins. But they need to indicate levels of added micronutrients on the label, as is required by the Ministry of Health and Family Welfare, (Food Safety and Standards Authority of India) Notification, New Delhi, dated the 1st August, 2011, F.No. 2-15015/30/2010

Q. Is there any Financial Assistance / Technology Up-gradation / Modernization of Food Processing Industries

- A. Government of India, Ministry of Food Processing Industries, provides financial assistance to entrepreneurs for setting up food processing industries, including up-gradation/ modernization of food processing industries for fortification. Following link provides all details: <http://mofpi.nic.in/ContentPage.aspx?CategoryId=233>

For more information, please contact



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