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COURSE CODE: NTD 404

COURSE TITLE: NUTRITION PLANNING AND POLICY

**Assignment**

**QUESTION 1:** list and explain the types of food fortification

Food fortification is the process of adding micro nutrients to food.it can be carried out by manufacturers or by governments as a public health policy which aims to reduce the number of people with dietary deficiencies within a population.

As defined by WHO (World Health Organization) and the Food and Agricultural Organization(FAO), fortification is the practice of deliberately adding or increasing the content of an essential micronutrient i.e. vitamins and minerals including trace minerals in a food, so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health.

**TYPES OF FOOD FORTIFICATION**

1. **Market driven fortification**: It refers to an opportunity for food manufacturers to contribute to the fight against the major global public health problem of micronutrient deficiencies.it is a situation where the food manufacturer takes the initiative to add one or more micronutrients to processed foods usually within regulatory limits. Market driven fortification applies to situations whereby a food manufacturer takes a business oriented initiative to add specific amounts of one or more micro nutrient to processed foods. Market driven fortification can also improve the supply of micro nutrients that are otherwise difficult to add in sufficient amounts through the mass fortification to staple foods and condiments because of safety or cost constraints. This type of fortification is more widespread in developed countries and however their importance is likely to be greater in the future because of increasing urbanization and wider availability of such foods.

Examples include some minerals e.g. iron and calcium and sometimes selected vitamins like vitamin C and B2.

1. **Targeted fortification:** For example, it is used to tailor human milk for the individual preterm infant’s milk prior to fortification. By knowing the macronutrient composition of human milk it becomes easy to identify if fortification is needed. It refers to the fortification of foods designed for specific [population sub groups such as the example stated above.in target fortification food programmes, foods aimed at specific subgroups of the population is fortified, thereby increasing the intake of that particular group rather than that of a population in whole. Other examples include special biscuits for children and pregnant women and rations (bended foods) for emergency feeding of displaced persons, complementary foods for infants and young children and foods developed for school feeding programs.

In some cases, the foods provide the daily micro nutrient requirement. Other sources of micronutrients may need to be provided. When possible, fresh fruits and vegetables should be added to the diets of displaced persons (especially infants and pregnant and lactating mothers) relying on blended fruits.

1. **Mass fortification:** this refers to the addition of micronutrients to foods commonly consumed by the general public such as cereals and condiments which is instigated, mandated and regulated by the government sector. Mass fortification is generally the best option when the majority of the population has an unacceptable risk, in terms of health of being or becoming deficient in specific micronutrients.in some cases, the deficiency may be demonstrable, as evidenced by unacceptably low intakes and/or biochemical signs of deficiency and in other cases, the population may not be actually be deficient according to usual biochemical or dietary criteria but are likely to benefit from fortification.

**QUESTION TWO**

List five advantages and disadvantages of food fortification.

**ADVANTAGES**

1. If consumed on a regular and frequent basis, fortified foods will maintain body stores of nutrients more efficiently and more effectively than will intermittent supplements.
2. They lower the risk of multiple deficiencies, an important advantage to growing children who need a sustained supply of micronutrients for growth and development and to women of fertile age who need to enter periods of pregnancy and lactation with adequate nutrient stores.
3. It is highly sustainable and does not require people to change their eating habits, thus it is socially acceptable.
4. The effect is fast and abroad and it is the safest strategy as the added nutrient is provided in the diet is low but constant amounts.
5. It improves plant and crop quality and increases variability in germplasm.

**DISADVANTAGES**

1. To health

* It may cause allergies or fail to perform desired effect.
* Supply does not provide a substantial quantity as the recommended daily intake.

1. To environment

* Loss of biodiversity, it may become a gregarious weed and endanger the existence of natural rice plants.
* Genetic contamination of natural, global staple foods.

1. Culture

* Some people prefer to cultivate and eat only white rice based on traditional values and spiritual beliefs.

1. High production costs and loss of wild-type rice varieties.
2. Poor rural population have limited access to purchase bio fortified rice.