IBEKWE GIVENS

15/MHS02/052

Question

1. List and explain the types of food fortification?

2. Enumerate FIVE advantages and disadvantages of food fortification

Answer

1. Types of food fortification

 BIOFORTIFICATION:  is the process by which the nutrient density

of food crops is increased through conventional plant breeding, and/or

improved agronomic practices and/or modern biotechnology without

sacrificing any characteristic that is preferred by consumers or most

importantly to farmers.

 MICROBIAL BIOFORTIFICATION AND SYNTHETIC

BIOLOGY: Plant growth promoting microorganisms are known to

fortify micro- and macro-nutrient contents in staple food crops

through various mechanisms such as siderophore production, zinc

solubilization, nitrogen fixation, phosphate solubilization, etc.

Inoculation of potential microorganisms along with mineral fertilizers

can increase the uptake of mineral elements, yield and growth.

 COMMERCIAL AND INDUSTRIAL FORTIFICATION:

Industrial food fortification refers to adding micronutrients and

minerals to industrially processed and widely consumed edible

products. One advantage of industrial food fortification is that it

requires limited changes in consumer behavior compared to other

micronutrient interventions.

 HOME FORTIFICATION: is an innovation aimed at improving diet

quality of nutritionally vulnerable groups, such as young children. The

term Micronutrient Powders (MNP) refers to sachets containing dry

powder with micronutrients that can be added to any semi-solid or

solid food that is ready for consumption.

2. Advantages of food fortification

 Food fortification does not require people to change their eating

habits, thus it is socially acceptable.

 The effects are both fast and broad.

 It does not affect organoleptic properties.

 Providing nutrients through the regular food supply and

distribution system reduces cost.

 It is the safest strategy as the added nutrients provided in the diet

are low but in constant amounts.

Disadvantages of food fortification

 While fortified foods contain increased amounts of selected

micronutrients, they are not a substitute for a good quality diet that

supplies adequate amounts of energy, protein, essential fats and other

food constituents required for optimal health.

 A specific fortified foodstuff might not be consumed by all members of a

target population. Conversely, everyone in the population is exposed to

increased levels of micronutrients in food, irrespective of whether or not

they will benefit from fortification.

 Infants and young children, who consume relatively small amounts of

food, are less likely to be able to obtain their recommended intakes of all

micronutrients from universally fortified staples or condiments alone;

fortified complementary foods may be appropriate for these age groups. It

is also likely that in many locations fortified foods will not supply

adequate amounts of some micronutrients, such as iron for pregnant

women, in which case supplements will still be needed to satisfy the

requirements of selected population groups.

 Fortified foods often fail to reach the poorest segments of the general

population who are at the greatest risk of micronutrient deficiency. This is

because such groups often have restricted access to fortified foods due to

low purchasing power and an underdeveloped distribution channel. Many

undernourished population groups often live on the margins of the market

economy, relying on own-grown or locally produced food.

 Technological issues relating to food fortification have yet to be fully

resolved, especially with regard to appropriate levels of nutrients,

stability of fortificants, nutrient interactions, physical properties, as well

as acceptability by consumers including cooking properties and taste