

- Include more diagrams and illustrations
- Use clear and concise language
- draw diagrams and graphs clearly
- Provide detailed explanations and examples
- Organize answers with headings and subheadings"

Part II

Q. NO 4-

Q. 1. Explain Fertilizers and its types:

Fertilizers are the organic or inorganic substances or materials that are added in soil to supply essential nutrients needed for its growth & development.

There are 16 essential elements and the most important of these are Nitrogen, Phosphorus and potassium.

Types of Nutrients:

Macronutrient:

These nutrients are required by the plant in larger amount and are called macronutrients.

These are nitrogen, Phosphorus, and potassium. These nutrients are always

lacking in the soil because these are consumed by the plant in large amount for growth and survival. Fertilizers are added in soil to supply these nutrients to plant.

Micronutrients:

These are the nutrients that are required for the growth of plant but in minor amount.

These are known as Micronutrient.

These nutrients are boron, zinc, copper, sulphur, manganese, molybdenum.

Types of Fertilizers:

Direct Fertilizers:

Those fertilizers that are absorbed by the plant directly are known as direct fertilizers.

Sulphur nitrate are example of direct fertilizers.

Indirect Fertilizers:

These substances are dissolved in other material and then these are absorbed by the plant.

Complete Fertilizers:

These fertilizers contain all the (NPK) nutrients needed for plant growth and survival these are called complete fertilizers. Zorawar, Zarkher by angro fertilizer are example of complete fertilizers.

Incomplete Fertilizers:

These fertilizers contain two or more essential nutrient (NP) or (NK) for plant growth.

Types:

Nitrogen Fertilizers

Phosphorous Fertilizers

Monophosphate fertilizer

Diphosphate fertilizer

Triphosphate fertilizer

Potassium Fertilizers.

Effects of Fertilizers:

Leakage from Agricultural Sources:

Fertilizer released in large amount from the agriculture farms. Manure and Agricultural waste that is rich in "Nitrogen and phosphorus" are the primary source of fertilizer from Agriculture farms.

Eutrophication:

Fertilizers increase the growth of Phytoplankton in water where they released. These Phytoplankton increase the growth of algal blooms. These algal blooms block the sunlight and oxygen level in water. Hence, they cause the death of aquatic organism that cannot survive without oxygen. These algae also block

the sunlight that can't reach the photosynthetic plants in the bottom of water due to which they also start dying, and it results in unpleasant smell in water bodies and make the water unfit for drinking.

Spread by spray and vapours:

Spray of fertilizers can impact a large area where they are sprayed. These fertilizers sprays can reduce the quality of water and food.

Food Residue:

These fertilizers can contaminate the food and crops on which are sprayed and can make them unfit for eating.

Health hazards of fertilizers:

Fertilizers cause many health problems. They can cause short-term health problems like headache, nausea, and long-term problems like cancer, respiratory system problems, kidney damage, liver damage etc.

Impact on the labour:

Fertilizers can cause serious impacts on the working persons. It can cause skin cancer, and skin burn.

Solutions:

Protect our children:

We should protect our children because our children are the most vulnerable population to the fertilizers. So it should be ensure that fertilizers should be sprayed on the

those areas that are away from schools, parks etc.

Keep the manure & livestock away from water:

We should keep our livestock and animal manure away from the water because these are the primary source of fertilizers that can contaminate the water.

Question No 5

(d)

Antioxidants:

Human body has positive and negative charges. The human cell is neutral means it has equal pairing of bonds. When the cell reacts with other chemicals then its charges become free from each other then these are called free radicals. The main problem arises when

The free radicals try to achieve their original state of stability by converting other stable cells into free radicals. and these free radicals have several serious impacts on human health,

such as:

- weakening the immune system
- damaging the nerve cells,
- damage DNA and cause mutation.

→ Body uses various means to protect it from these free radicals. These are called Anti-oxidants.

These Vitamin A, B, Zinc, biotin etc.

Process:

Antioxidants are the most important defence system against these free radicals.

These are simpler compound and they contain carbon as their main component.

These antioxidants play a very important role in preserving the food item.

lays chips, nuts, packed foods and other fat containing food are only preserved by these antioxidant.

Q No 5

(b)

Global Warming.

The Global potential determines that how much gases enter the atmosphere and atmospheric lifetime determine that how much gases remain in the atmosphere.

When the sunlight reaches the earth surface, some of it is absorbed by earth and some is reflected back into atmosphere.

when the sunlight reaches the earth surface then few planets release some of energy back into atmosphere.

Greenhouses like CO_2 , absorb all the heat released from the plants and prevent the escape of the heat back into atmosphere.

These Greenhouse gases act as a blanket and never let the heat to escape through it. This process is called Greenhouse effect.

These gases increase the temperature of the earth than the normal average temperature of earth.

But without these gases the temperature of earth remain balanced because without these gases the temperature of earth would be -19°C than the current average temperature of earth that is 15°C .

This process of increasing the earth temperature than the normal temperature of earth is called **global warming**.