

JSR IAS ACADEMY

GENERAL SCIENCE

CHEMISTRY

Fertilizers and Pesticides



Based on the kind of biological material used, manure can be classified as follows:

i) Compost & Vermi Compost:

Vermicompost is manure prepared by using earthworms to speed up the process of decomposition of plant and animal waste.

ii) Green Manure :

- ❖ Green manure is prepared by using leguminous plants like **sunhemp and soyabean**.
- ❖ Green plants add nutrients and organic matters like nitrogen and phosphorous to the soil.

Types of Fertilizers	Examples
Nitrogenous Fertilizers	Urea, Ammonium Sulphate, Ammonium Nitrate
Phosphatic Fertilizers	Single Super Phosphate, Triple Super Phosphate
Potassic Fertilizers	Potassium Nitrate, Pottassium Chloride
Complex Fertilizers	Nitrophosphate, Ammonium Phosphate, Diammonium Phosphate (DAP)

Manure	Fertilizers
1. Manure is a natural substance obtained from the decomposition of cattle dung, human waste and plant waste.	1. Fertilizer is a mineral or chemical compound containing nutrients like sulphur, phosphorous and nitrogen.
2. Manure contains organic substances.	2. Fertilizers are inorganic compounds.
3. Manure can be prepared in fields.	3. Fertilizers are manufactured in factories.
4. Manure contains all nutrients but in small quantities.	4. Fertilizers contain more quantities of one specific nutrient or more.
5. Manure adds plenty of humus to soil and improves the texture of the soil.	5. Fertilizers do not contribute to the addition of humus to the soil.
6. Manure is not easily absorbed because it is less soluble in nature.	6. Fertilizers are soluble in water and it is easily absorbed.
7. Manure is less soluble; it is not easily washed away from the soil and hence its effect is long lasting.	7. Fertilizers are easily washed away by water and hence their effect is of shorter duration and require repeated application.

INSECT PESTS

insect pests are classified into three types:

i) Chewing Insects:

They cut and chew the root, stem and leaves of the plants. **e.g. grasshoppers and caterpillars.**

ii) Sucking Insects:

They suck the cell sap from different parts of the plants. e.g. leaf hoppers and aphids.

iii) Borer Insects:

They make holes and enter different parts and feed on plant tissues. **e.g. sugarcane borer.**

Insecticides:

Chemical substances which are used to kill insects are called insecticides.

e.g. DDT (Dichloro diphenyl trichloro ethane), Malathion.

Fungicides:

Chemicals used to kill fungi are called fungicides.

e.g. Bordeaux mixture.

Weedicides:

Chemical substances which are used to kill weeds are called weedicides.

e.g. 2, 4-D. (2, 4 - Dichloro phenoxy acetic acid)

Rodenticides:

Chemicals used to kill rodents like rats, mice and squirrels are called rodenticides,

e.g. Zinc Phosphate, Arsenic.

- ❖ Most seaweed based fertilizers are made from kelp(brown algae) which grows to length of 150 metres.
- ❖ Liquid seaweed fertilizer is not only organic but also eco-friendly.
- ❖ The alginates in the seaweed that reacts with metals in the soil and form long, crosslinked polymers in the soil.
- ❖ These polymers improve the crumbing in the soil, swell up when they get wet and retain moisture for a long time.

- ❖ They are especially useful in organic gardening which provides carbohydrates for plants.
- ❖ Seaweed has more than 70 minerals, vitamins and enzymes.
- ❖ It promotes vigorous growth. Improves resistance of plants to frost and disease.
- ❖ Seeds soaked in seaweed extract germinate much rapidly and develop a better root system.

**NPK Fertilizers**

It consists of nitrogen, phosphate with potassium in different proportions. The number labelled on the bags as 15-15-15 indicates N, P & K in equal proportions.