Why should preventive measures and biological control methods be preferred for protecting crops?

Answer: Preventive measures and biological control methods should be preferred for protecting crops because excessive use of chemicals can cause harm to the environment. These chemicals are also poisonous for plants and animals. These chemicals are absorbed by the plants along with water and minerals from the soil and are taken by aquatic plants and animals as well. Preventive method are those which can be done beforehand to prevent the loss. These measures include proper soil and seed preparation, timely sowing of seeds, intercropping and mixed cropping, usage of disease resistant crops, etc.

On the other hand, biological control methods involve the use of bio-pesticides that are less toxic for the environment as they are made from organic material. Therefore, both preventive measures and biological control methods are considered eco-friendly methods of crop protection.

Q.8. Give Reasons for the following:

Genetic manipulation is considered as useful agricultural practice. Why?

Answer: Genetic manipulation is a process of transferring (genes) characters that are desirable from one plant to another plant. In simple words it can see as changing the normal gene arrangement according to your desirable needs.

When the gene for a particular character is introduced in a plant cell, a transgenic plant is produced. These transgenic plants have characters of both the old and the newly introduced genes or just the new gene.

For example, let us assume there is a wild plant that produces small fruits. If a gene responsible for a larger fruit size is introduced in this plant, this plant becomes transgenic, and starts producing larger fruits. Similarly, genes for higher yield, disease resistance, etc. can be introduced in any desired plant. Therefore, gene manipulation plays an important role in agricultural practices. It helps in improving crop variety. It ensures food security and insect resistant crops. It also improves the quality and yield of crops.

Q.9. Give Reasons for the following:

Why are manure and fertilizers used in fields?

Answer: Manures and fertilizers are required in fields to enrich the soil with the desirable nutrients. Manure helps in enriching the soil with organic matter and nutrients as it is prepared by the decomposition of animal and plant wastes. This improves the fertility and structure of the soil. This involves increasing the water holding capacity in sandy soil.

● Crop diversity- Healthy cropping includes mixed cropping, intercropping and crop rotation.

Q.20. What is the composition of normal animal feed? What kind of feed promotes the health and milk output of dairy animals?

Answer: Animal feed needs to meet the requirements of the animal. For all animals it must contain dry matter, various groups of nutrients, minerals and trace-elements and should not be mixed with dirt and soil nor contain poisonous ingredients (for example pesticides or herbicides).

Generally, animals must have a ration containing:

● Energy (from carbohydrates and fats) to maintain the body and produce products (milk, meat, work). The carbohydrates and fats not needed for production are converted to fat and stored in the body.

● Protein is needed for body building (growth) and maintenance as well as milk production. Without protein there would be no body weight gain nor milk production. Excess protein is converted to urea and fat

● Minerals help in body building as well as in biological regulation of growth and reproduction. They are also a major source of nutrients in milk.

● Vitamins help regulate the biological processes in the body and become a source of nutrients in milk

● Water helps all over in body building, heat regulation, biological processes as well as a large constituent of milk production as well as eggs.

The cattle feed consists of two component- roughage and concentrate.

(a) Roughage: It largely contains fibers such as green fodder, silage, hay and legumes like berseem, cowpea.

(b) Concentrates: It is low in fibers but contains relatively high proteins and other nutrients. It includes cotton seeds, oilseeds, oats, barley, gram and their by-products like wheat, beans and molasses etc.

Cattle need balanced rations containing all nutrients in proportionate amounts. Besides such nutritious food material, certain feed additives containing micronutrients promote the health and milk output of dairy animals.

Comprehensive Exercises (MCQ)

Q.1. Find out the correct sentence:

(i) Hybridization means crossing between genetically dissimilar plants

Comprehensive Exercises (T/F)

Q.1. Write true or false for the following statements:

Animal feed includes vitamins and proteins mainly.

Answer: False

Animal feed includes carbohydrates, proteins, fats various groups of nutrients, minerals and trace-elements. They all are required for proper growth of animals. For example: The cattle feed consists of two component- roughage and concentrate.

(c) Roughage: It largely contains fibres such as green fodder, silage, hay and legumes like berseem, cowpea.

(d) Concentrates: It is low in fibres but contains relatively high proteins and other nutrients. It includes cotton seeds, oilseeds, oats, barley, gram and their by-products like wheat, beans and molasses etc.

Q.2. Write true or false for the following statements:

A healthy animal feeds regularly and has a abnormal posture.

Answer: False

A healthy animal feeds regularly cannot have an abnormal posture. Th posture disturbance is a result of genetic manipulation during breeding.

Q.3. Write true or false for the following statements:

The level vitamins C and D is kept high in the poultry feeds.

Answer: False

Vitamins A and K are kept high in the poultry feeds. Vitamin A provide proper fertility and K provides good bone health in poultry animals.

Q.4. Write true or false for the following statements:

The housing, nutritional and environmental requirements of broilers are similar to those of egg layers.

Answer: False

Broilers require maintenance of temperature and hygienic conditions to grow fast and low mortality. Their daily food requirement is rich in protein and vitamin A and K. The fat content also should be adequate.

But Layers require enough space and lighting during the growth and laying periods. They require restricted and calculated feed with vitamins, minerals and micronutrients.