

SUBJECT: AGRICULTURAL SCIENCE

TOPIC: ANIMAL IMPROVEMENT

CLASS: SS3

WEEK: THREE (3)

TERM: 1ST TERM

MEANING OF ANIMAL IMPROVEMENT

Animal improvement is the process of transferring an inherited superiority from one domestic animal to another of the same species. It is also known as the process of upgrading the performances of animals through the science of genetics.

AIMS OF ANIMAL IMPROVEMENT

1. To make animals to new climatic condition.
2. To produce animals those are resistant to disease and pest.
3. To produce early maturing breed animals
4. To produce animals that have high feed conversion efficiency
5. To produce animals with high growth rate
6. To produce animals for a particular purpose
7. It can also be used to upgrade local breed.
8. To produce animals with an overall improved performance.

METHODS OF ANIMAL IMPROVEMENT

Animal improvement can be carried out using the following processes ;these are;

1. Introduction
2. Selection
3. Breeding

INTRODUCTION METHOD:

This is the physical transfer of animals from their country of origin to another country. Such transferred animals are known as exotic breeds.

ADVANTAGES OF INTRODUCTION METHOD

1. It brings about breeding animals with better quality
2. Animals which were originally alien could be reared successfully in a country
3. Diseases and pest can be controlled since animals must pass the quarantine test.
4. Animals newly introduced will produce more than the local breeds.

DISADVANTAGES OF INTRODUCTION METHOD

1. The performances of animals in terms of quality and quantity may reduce with time
2. Animals may not be able to adapt to the prevailing climatic condition of the new area
3. Certain diseases which were not discovered at the quarantine stage may later evolve.
4. It is expensive to practice.
5. There may be severe losses during transportation.

SELECTION METHOD

This is the system of picking an animal from a group, based on those phenotypic features exhibited by the animals .the features may be;

1. Fertility rate
2. Mortality rate
3. Growth rate
4. Size
5. Milk quality and quantity
6. Fat and meat quality
7. Colour of egg shell
8. Colour of feather or coat

NATURAL SELECTION

This is based on Charles Darwin theory, the nature selects those trait or characteristics that are useful to it and reject those that are not .it is based on survival of the fittest and elimination of the weak.it also stressed earlier by jeans larmark in his theory of use and dis-use' natural selection is the ability of an animal (individual or group) to wade through unfavorable condition and survive to reproduce.

ARTIFICIAL SELECTION

This is based on man's intelligence and experience on what he wants. Examples of artificial selection are;

1. Individual or mass selection
2. Progeny testing or selection
3. Selection by show winning
4. Pedigree or family selection

INDIVIDUAL OR MASS SELECTION

This are selected bases on the performance of their offspring's, while the mothers of such other animals which cannot meet the set standard are culled or discarded.

SHOW WINNING SELECTION

This is the system of selecting animals that has won an agricultural show. Such animals must have passed through several tests and some of them may be genetic.

PEDIGREE OR FAMILY SELECTION

This is the selection of animals based on the performance of their ancestors.

ADVANTAGES OF SELECTION

1. The spread of diseases can be reduced.
2. Only animals with desirable characteristics are selected.
3. Only the best naturally available animals are selected.
4. Best quality breed of animals can be selected
5. Parasites spread can also be reduced.

DISADVANTAGES OF FAMILT SELECTION

1. Selection is based on phenotypic features
2. Certain desirable features may not be expressed in the animals due to express to change in climatic and environmental conditions.
3. New desirable traits are not introduced.
4. It is tedious to carry out.
5. It wastes time.

BREEDING METHOD

This is the system of producing offspring with desirable qualities. There are three major types breeding .they are;

1. Inbreeding
2. Out breeding
3. Cross breeding

ADVANTAGES OF BREEDING METHOD

1. It results in the production of pure breeds or pure (in breeding).
2. The new offspring produced can adapt to environment (cross breeding).
3. The mating of superior animals from two different breeds produce an offspring that is superior to the average of either parent ,this is called hybrid vigor or heterosis (cross breeding)
4. Offspring grow more rapidly and they are more.
5. It helps to concentrate and preserve specific qualities in an animals

DISADVANTAGES OF BREEDING

1. Continuous breeding can result in breeding i.e. reduction in vigour and performance.
2. It can later result in susceptibility to diseases.

3. Production of milk, egg, meat, can result in slow growth rate and loss of fertility.

MEANING OF ARTIFICIAL INSEMINATION

Artificial insemination is a special techniques in which semen is that contain living sperm is collected from a male animal and introduced into female reproductive tract at proper time with the aid of special instrument. Artificial insemination has been found to give rise to normal offspring.

METHOD OF COLLECTING SEMEN

They are methods of collecting semen from time to time.those unsatisfactory methods have been gradually replaced with new are three common methods namely;

1. Use of artificial vagina
2. Use of electro stimulation method
3. Massaging of male sexual organ

ADVANTAGES OF ARTIFICIAL INSEMINATION

1. Artificial insemination prevent spreading of certain diseases and sterility due to genital abortion
2. The progeny testing can done at an early age
3. Artificial insemination helps in determination of sterile males by checking the fertility of their semen.
4. The semen of a desired male can be used even after the death of those particular male animals.
5. It encourages mating of animals with great difference in size without injury to both animals involved.

DISADVANTAGES OF ARTIFICIAL INSEMINATION

1. These techniques require well trained personnel and the use of special equipment.
2. More time is required compared to natural mating.
3. Low fertility may arise due to improper cleaning of instrument and poor sanitary
4. This might lead to spreading of genital diseases by the animal if not properly or thoroughly tested.

THE REACTIONS OF ANIMALS TO DISEASES

The following are the reaction or animals to diseases.

1. Susceptibility: animal is said to be susceptible, if it is unable to react against agent.
2. Tolerance: animals that overcome the adverse effects of disease are said to be tolerant.
3. Resistance: a situation whereby a casual organism is unable to affect the health condition, then the animals is said to be of resistant to diseases.
4. Immunity: animal is said to be immune if is not susceptible to disease causal agent.

ASSIGNMENT

1. What do you understand by animal improvement?
2. State five aims of animal improvement.