

SUBJECT: AGRICULTURAL SCIENCE

TOPIC: CROPPING SYSTEMS

CLASS: JSS2

WEEK: 7 AND 8

CROPPING SYSTEMS

Cropping system refers to how various crops grown by the farmer are combined in his farm, that is, whether they are planted singly, one after the other or mixed.

There are five major cropping systems, namely,

Monocropping system

Mixed cropping system

Continuous cropping system

Multiple cropping system and

Rotational cropping system

- (a) Monocropping : this is otherwise known as sole cropping. It involves the growing of only one type of crop on a piece of land at any given time. This practice is common with large scale farmers who produce cash crops.

Advantages of monocropping system

1. It helps the farmer to specialize in the production of a particular crop
2. Identification and control of weeds, pest and diseases is easy.
3. It also encourages the adoption of mechanization.

Disadvantages of monocropping system

1. There is high risk of crops failure due to adverse weather, pest and diseases attack.
2. The land may be exposed to erosion since all plants are harvested almost the same time
3. The farmer may have to depend on other farmers for food crops

- (b) Mixed cropping: this is the practice where the farmer grows more than one type of crop on a piece of land at the same time .this is mostly practiced by small scale farmers or subsistence farmers.

Advantages of mixed cropping

1. It guards against crop failure since the farmer can easily fall back on other crops should one fail
2. The mixture of crops makes for a lower incidence of pest and diseases

3. Soil nutrients are better utilized due to variation in the feeding habits of the crops, while some are shallow feeders, others are deep feeders.
4. It saves labour

Disadvantages of mixed cropping

1. There is usually competition among the crops for water, nutrient, sunlight and space.
2. The system does not encourage mechanization.
3. It makes difficult for the farmer to determine the fertilizer requirements of the crops.

Mixed cropping may further be divided into three types as stated below;

- i. Inter-cropping: this involves the planting of two crops on a piece of land; however that last crop is harvested first .for instance, inter-cropping yam with maize.
- ii. Inter-planting: this is the opposite of intercropping, meaning that the first crop is harvested before the second crop in this case, for instance, and inter-planting maize with cassava.
- iii. Relay cropping: this is where a crop is planted and harvested just before the second crop is planted and continues growing in the same place.

Continuous cropping: this involves the continuous cultivation of a piece of land. Year after for five or more years. This is best suited for areas with very fertile soil.

Advantages of continuous cropping

1. it is suitable for areas where there is scarcity of land
2. It is also adopted where environmental conditions limits the types of crops that could be grown

Disadvantages of continuous cropping

1. Soil nutrients are easily depleted
2. Continuous cultivation could lead to destruction of soil structure, exposing the land to erosion.
3. May also result in heavy build-up of pest and diseases

Multiple cropping: this involves the growing of two or more crops on the same farm ,in the same year.it is further divided into two ;relay cropping and inter- cropping.

Advantages of multiple cropping

1. Growing of different crops increases total income for a peasant farmer
2. There is maximum usage of land under this system
3. Crops mixture provides a kind of insurance to the farmer against crop failure.

Disadvantages of multiple cropping

1. There is always competition for which can affect crop yield.
2. Farm mechanization is difficult to achieve in this system.
3. Application of some agro-chemicals is also difficult due to the mixture of crop

Crop rotation: this is the growing of different crops on a piece of land ,year after year in a planned sequence.

Advantages of crop rotation

1. It facilitates efficient and economic use of land from year to year
2. It helps to reduce risk of serious diseases and pest infestation.
3. Reduces soil depletion due to variation in the feeding habit of the crops

Disadvantages of crop rotation

The major disadvantage of crop rotation is that it can lead to nutrients exhaustion in the soil and low productivity especially when not well planned.

Principles of crop rotation

1. A crop with higher requirement for a particular nutrient should be followed by one with a lower requirement for the same nutrient.
2. Shallow rooted crops should be alternated with deep rooted crops .this makes a more effective use of soil nutrient and preserves the soil structure.
3. Crops requiring different cultivation practices should follow each other.
4. Crops attacked by similar pest and diseases should never follow each other.
5. A good rotation plan should include a fallow period of at least one year, during which the soil gets the chance to replenish lost nutrients.

Assignment

1. Briefly explain the five cropping systems