SUBJECT: AGRICULTURAL SCIENCE

TOPIC: ENVIRONMENTAL FACTORS AFFECTING AFRICULTURAL PRODUCTION

CLASS: SS2

WEEK: WEEK 10

TERM: 1ST TERM

Environmental factors affecting agricultural production

These factors are grouped into three,

1. Climatic factor
2. Biotic factor
3. Edaphic factor

Climatic factors affecting agricultural production

Climate is the average weather condition of a pace over a long period of time. The element of climate is rainfall, humidity, light, temperature, drought, wind, sunlight, humidity etc.

RAINFALL

Rainfall is defined as the release of excess condensed water vapor in the atmosphere into the earth.

1. It determines the distribution of crops and animals
2. It is necessary for seed germination.
3. Excessive rainfall leads to leaching
4. It determines the types of vegetation in an area.
5. It determines seasons in Nigeria.

DROUGHT

This is defined as lack of or insufficient rainfall in the area.

1. It causes a delay flowering and flower abortion.
2. Poor crop establishment
3. It leads to a reduction in leaf area.
4. A decrease in the production of green matter.
5. Reduction in photosynthesis

TEMPERATURE

This is the degree at hotness and coldness of a place.

1. Temeperature is necessary for germination of seeds.

2. It affects the distribution of crops and animals.
3. Too hot or too cold temperature does not favour plants and animals growth.
4. High temperature affects evapotranspiration and reduces the performance of livestock.
5. It affects the wilting of field crops, ripening and maturity of crops.

WIND

Wind is defined as air in motion

1. High wind velocity may cause wind erosion
2. It aids seed and fruit dispersal
3. It can aid pollination and spread of diseases
4. It helps in the distribution of rainfall and changes in seasons.
5. High wind velocity cause damage to cops

SUNLIGHT

Sunlight is the amount of heat and the period the sun rays are received at a place.

1. Sunlight is necessary for photosynthesis
2. It affects the productivity of crops due to the length of ray
3. Light affects the rising and roosting of animals.
4. It affects the rate of production in poultry.
5. Solar radiation is a source of farm power.

RELATIVE HUMIDITY

Relative humidity is defined as the amount of moisture in the atmosphere.

1. It results in the formation of rain.
2. It affects the performance of plants and animals.
3. It causes moldiness of feeds and liters
4. It determines the type of crops grown in an area.
5. It affects feed and water intake in animals.

BIOTIC FACTORS AFFECTING AGRICULTURAL PRODUCTION

SOIL ORGANISMS

1. These include bacteria, fungi, earthworms' rodents, and termites.
2. Bacteria and fungi can diseases.
3. Some aid aeration of the soil
4. Root nodules of bacteria can fix nutrient directly to the soil
5. Helps in the decomposition of plants materials to form humus.

PEST

1. These include insects, rodents, birds ,and some mammals.
2. They reduce the yield of crops and animals.
3. They reduce the quality of crops and animals.
4. Some are vectors or carriers of diseases.
5. They reduce the income of farmers.

PARASITES

1. They include tick, liver fluke, tapeworm, dodder, mistletoe and like.
2. Some transmit diseases.
3. They reduce the quality or yield of production.
4. They cause the death of plants and animals
5. They reduce the production capacity of livestock crops.

EDAPHIC FACTORS AFFECTING AGRICULTURAL PRODUCTION

SOIL PH

1. It affects the growth of plants
2. It also affects the availability of soil nutrients to plants.
3. It affects the presence of soil microorganisms.
4. It causes toxicity to plants and animals in the soil.

SOIL TEXTURE

1. It determines the type of soil in an area.
2. It determines the level of soil fertility
3. It determines the type of crop to be grown.
4. It affects the level of leaching and erosion.

SOIL STRUCTURE

1. It determines the fertility of the soil
2. It determines the water holding capacity of the soil.
3. It determines the level of soil aeration and percolation.

TOPOGRAPHY

This is the shape of the land in relation to the underlying rocks of the earth surface.

1. Steep gentle slope gives rise to soil erosion.
2. Even or flat shape leads to accumulation of soil.
3. Even and flat slope can be better sites for intensive farming

SOIL FERTILITY

1. Fertile soils aid the production of food and cash crops.

2. Fertile soil produces better forage crops.
3. It minimizes the use of fertilizer
4. It leads to multiplication of beneficially soil organism.

SOIL TYPES

1. The type include sandy ,clay and loamy soil
2. Loamy soils is the best for agriculture
3. Sandy soil does not contain enough nutrients; hence it cannot support plant growth.
4. Sandy soil encourages leaching
5. Clay soil prevents leaching encourages waterlogging

ASSIGNMENT

1. List five edaphic factors affecting agricultural production.
2. List five biotic factors affecting agricultural production.