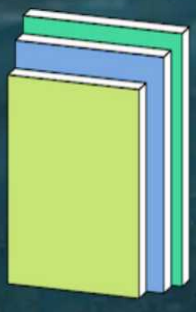
ESSENTIALLY IMPORTANT

Edo Nellz MW

AGRICULTURE

60

ESSAYS



Lyrical Felleny

AGRICULTURE ESSAYS

1.Explain any five factors that contribute to the success of agricultural cooperatives.

• The leadership of the cooperatives should have expertise ,be trustworthy and highly innovated.

• Enough capital or funds should be available.

• Efficient and effective organization.

• All members should be committed to work for the success of the cooperatives.

• Availability of adequate infrastructures e.g. staff houses, offices, storage facilities.

• Members should receive ongoing and relevant training to improve productivity and marketing skills.

2. Describe any five types of soil structures

•Crumb. Soil particles are always cemented together. Therefore they exist as collections. For example- clay soils.

•Platy Structures. Soil particles are flat lying on horizontal axis. They have a plate like shape. These produce small voids.

•Blocky Structure. Soil particles have many sides they appear as block/cubes.

•Prismatic Structure. Particles have prism shapes when packed together they leave large voids.

•Spheroidal Structure.Particles are arranged around a central point. They form up a structure like a sphere

•Granular. In this structure soil particle exist as single or individual grains. They are loosely parked with no cementing.

3. Describe any five factors that affect soil pH.

• Leaching. During continuous heavy rainfall plant elements such as calcium (Ca^{2+}) sodium ($Na+$) magnesium.(mg^{2+}) and potassium ($K+$) are leached down the soul profile. The ions are then replaced with hydrogen ions $H+$. This decreases soil pH making the soil more acidic.

•The use of acid farming fertilizer. The continuous and heavy application of sulphate of ammonia makes the soil acidic.

•Microbial activity. Microbial activity affect soil PH as hydrogen Ions are released during the decomposition of organic matter.Again the carbon dioxide which is produced by microbes dissolves in water and forms carbonic acids, which in turn increase soil acidity.

•Weathering of parent material. Parent material contains different mineral elements which, when weathered affect soil PH.For instance, if the parent material contains sulpher the soil pH gets acidic .This is due to the formation of sulphuric acid.

•Nutrient up take by plants. Plants absorb nutrients from soil to manufacture their own food. When the crops are harvested the nutrients absorbed by plants are also lost from the soil. These lost nutrients tend to be replaced by hydrogen ions.

•Type of vegetation.The type of vegetation growing in a soil affects the soil PH in several ways. For instance, the decomposition of organic matter influences soil PH through the release of nutrients.

4. Describe any five advantages of sexual propagation

Seeds are relatively cheap.

Seeds are easy to sow, handle and prepare for planting.

Seed are easy to store without loss of quality or quantity.

Seeds can remain viable for a long time as long as they are safely stored.

Seeds can easily be sown mechanically using drills.

Seeds minimise the risk of disease transmission from parents to offsprings.

Seeds offer the only way of propagating crops that can not be propagated vegetatively.

Seeds produce new plants that differ from their parents leading to crop improvement.

5. Describe five advantages of asexual propagation.

°It reduces the juvenile period of the plant as vegetatively propagated materials reach the age of their parent faster.

•It eliminates the problem of dormancy which is common in some seeds e.g. those that need scarification inorder to germinate.

•It ensures genetic uniformity since all offsprings will resemble their parents.

•It is the only way of propagating crops whose seeds are not viable.

•Vegetative organs are more hardy than seedlings from seeds i.e. they can withstand environmental hazards.

•Vegetative organs have sufficient food reserves for easy establishment of the young shoot.

•Vegetative planting materials are readily available to the farmer from the previous crop

6.Describe any five ways in which essential plant nutrients are depleted in the soil

•Crop removal. When crops are being harvested they take along with them absorbed nutrients.

•Soil erosion. This carries away essential plant nutrients which are usually found in the top soils.

•Leaching. This is where the essential nutrients are washed down to subsurface soil layer where plant roots are not able to reach them out.

•Volatilization. Essential nutrients , for instance nitrogen is used by plants as nitrates. Whenever a farmer burn crop residues the nitrates are converted into gas(nitrogen gas).

7.Explain any five impact of weeds

°Weeds smoother crop plants. As such suppress the growth of plants.

°Increase production costs through payment to labours who are employed to clear the weeds.

°Weeds reduce the value of agricultural land .This is because weeds are heavy feeders which lower the nutrient status of the soil, other weeds like wild onion taint the colour of milk if eaten by lactating cows.

°Weeds poison livestock e.g. thorn apple, katupe and lantana. These cause severe illness or death in animals.

°Weeds decrease the quality and quantity of crop yield.

°Weeds harbour pests and diseases of crop plants.

8.Describe any three methods of weeds control

ΔPhysical method.This involves uprooting weeds by hands. This becomes successful when all the roots are uprooted. This method is very applicable in ground nuts, rice field ,pastures, pumpkins, melons and sweet potatoes

ΔCultural Method. This involves the use of crop husbandry practices which help the plants to grow fast than the weeds.The crop husbandry practices include; burning, deep tillage, flooding in rice, crop rotation, early planting, correct spacing correct fertilizer application and mulching.

ΔMechanical Method.This involves the use of farm machinery or farm tools and implements For example use of slashes just to cut down weeds but not killing. Hoeing out weeds- this scrapes off the weeds from the soil and exposes it to the sun’s heat.

ΔBiological Method. This uses natural enemies of weeds to check the weeds population. Organisms such as animals, insect pests and plant pathogens are used to eat, kill or give them diseases.

ΔChemical weed control. This uses chemicals to control weeds.

9.Describe any five harmful effects of pests

•Transmit diseases. Pests piece plants. They therefore inject saliva and other substances In plants that cause disease to plants.

•Lowering the quality of yields. Pests lay eggs in fruits and also through piecing they cause damage.

•Reducing quantity of yields. Pests eat roots or cause root-rot which disturbs absorption of essential minerals. Pests cause boring in plant stems disturbing mineral uptake to different parts of the plant.

•Increases the cost of production. The farmer spends a lot of money to buy pesticides inorder to deal with the pests.

10.Describe any five legislative measures of controlling pests and diseases

+Prohibition. Laws and regulations are made country wide restricting entry of some agricultural materials suspected to be a source of infection. In air ports and migration points planting materials and animals are inspected before entry into the country and certified free of pests and pathogens.

+Quarantine. Imported seeds, plants and animals are put in isolation and observed in sealed compartments providing a period long enough for any disease to symptoms to appear. If these materials are observed to have any symptoms of any diseases, they are destroyed at the expense of the importer.

+Notification order. Notification orders ensure that serious pests and diseases are promptly identified and dealt with before they cause too much damage. The order requires that occurrences of notorious pests or diseases must be reported immediately to the appropriate authorities or police. Pictures of such pests and diseases are displayed country wide and in immigration points. Army worms and red locusts are notifiable pests.

+Closed season.This is the period where farmers are not supposed to leave some crop residues in the field to starve the pests so that they do not survive to the next growing season. For example, tobacco.• In Malawi the three regions observe different periods of closed season for tobacco because they receive rainfall at different times which dictate different growing periods of tobacco

+Seed certification. Seeds are inspected and certified before being sold or distributed to farmers by national seed company and the government. Farmers are not allowed by the low to plant uncertified seeds of tobacco and maize.

11.In what way is chemical weed control advantage, give five points

• Reduce early weed competition

• Reduces labour

• Enables cultivation of large plots

• Ensures timely control of weeds.

12.Describe any five importance of fruits

• Fruits are a source of raw materials to local industries for example juice from mangoes, oranges, guavas, pineapples, grapes etc

• Fruits provide people with income after selling

• Fruits are a source of valuable food nutrients such as Vitamins and Minerals, Carbohydrates, Proteins and Oils

• Fruits provide employment.Many people are self employed or offered paid Jobs when they are in fruit production in orchards.

• Fruits provide foreign currency. Although production level of fruits in Malawi is still low, fruits can provide a great deal of foreign currency if they are exported to other countries.

13.Describe any five factors which needs to be considered when feeding animals

Age and size of the animal. Young animals require less feed than old animals because their digestive systems are not fully developed.

The type of animal: Ruminants can digest roughages unlike non-ruminants. Exotic breeds also require quality feed.

The purpose for which the animal is kept. If they are kept for draught, they will require high-energy feed. Animals which are kept for milk, meat and egg production require a lot of concentrates.

The condition of the animal. Milk producers should not be allowed to starve to avoid milk reduction.

Quality of the feed. The feed should be easy to digest

Palatability. The feed should be appetising to the animals.

Digestibility.

The amount of feed. This will depend on quality and type.

Texture. This refers to coarseness or fineness of the feed

Cost of the feed. Feed should be given to the animals only when they are in production e.g. layers mash when the chickens are laying eggs.

14.Explain any five reason why a farmer keep records

• Helps the farmer to know the time for various farm activities

• Helps farmers in planning

• Helps farmers in budgeting

• Helps farmers to know whether they are making profit or losses.

• Help farmers to obtain credit or loans from lenders

• Help farmers in selecting the type of animals to keep because they have a record of production for each animal.

• Help farmers to check on their methods of production

• They provide history of farming activities and enable them to compare with other farmers

• They help farmers to calculate the amount of tax to pay.

15.Explain any five objectives of crop improvement in maize that would contribute towards ending world hunger

• To increase the biomass (adequate quantity of dry matter)

• To improve partition-ability to divert the biomass to the desired harvestable portion of the plant

• To increase resistant to diseases and pests.

• To increase seasonal adaptation to match growth with maturity.

• To increase tolerance to harsh environmental conditions Quality.

16.Explain any five ways in which the depth of soil affects plant growth and development

+High water retention. Deep soils hold a lot of water. This water helps in plant growth and development in the end.

+Deep soils contain a lot of organic matter with helps in plant grow.

+Deep soils have high nutrient content. These nutrients are essential for proper plant growth.

+Deep soils tend to have good temperature. This helps in seed gemination and development of the plant as a whole.

+Deep soils tend to have good aeration. This circulation of air is essential for plant grow.

+Deep soils have good number of useful microorganism that are essential in plant growth for instance the rysobium bateria which helps fix nitrogen into the soil.

17.Describe any five factors that affect milk yield in a dairy cow

• Age of the animal. Milk increases with each calving up to fifth lactation.

• Nutrition or feeding. Feed for both maintenance and production is essential.

• Character of the cow.Dairy cow should be docile.

• Health. Diseases such as mastitis and milk fever affect the quality and quantity of milk produce

• Season /time of the year. Availability and quality of pasture is important for milk production.

• Period of lactation.The cow dries off 305 days after calving therefore milk production begins to decrease. This is called lactation curve.

• Milking frequency. The recommended frequency is twice a day.

• Treatment of the cow: Gentle treatment is required to avoid holding up the milk.

• Milking techniques: Overmilking damages the teats while undermilking can make the cow to dry up quickly

18.Describe any five factors that should be considered when mechanizing a farm.

• Size of the farm holdings: It requires large farms.

• Accessibility of the land: Machines such as tractors should easily reach the farm.

• Topography of the land: It is easier to mechanise on a flat land.

• Capital availability: It should be enough to buy machinery and spare parts.

• Technical know - how: There should be skilled labour to operate, maintain and repair the machines.

• Value of the crop: The crop should be of high value to recover the cost of mechanisation.

• Market demand should be high.

• Infrastructure: It requires good roads, electrification and water supply.

• Availability of fuels and oils: These should be accessible and affordable.

• Availability of labour: They are needed to perfect the work done by machines.

• Land tenure system: Some systems like customary may limit mechanisation since it would not be possible to combine small farms to create a bigger one.

• Land for animal feed: Where ox - drawn implements are used, there must be sufficient land for pasture production

19.Describe any five characteristics of soil that makes it suitable for crop production.

* Soil depth. Deep soils provide anchorage for plants and high nutrient retention.

* Soil aeration. Soils with good aeration tend to support plant growth in a sense that air is used for root respiration and microorganism respiration.

* Nutrient retention. Soils that have high nutrient content are suitable for plant growth.

* Salinity. Good soils are salt free. Salt free soils tend to support plant growth.

* Soil's Ph. Good soils have a moderate Ph of 5.5 which support a wide variety of crops.

20.The development of the technique of artificial insemination has been very beneficial to the livestock farmers in Malawi. Explain some of the obstacles that prevent some farmers from making use of this technology.

• It is expensive to set up and maintain A.I programme

• Difficult for A.I administration because it is not easy to detect when cows are on heat

• Collection and administration of A.I requires trained personnel

• Communication problems between farmers and A.I headquarters because of distance and this delays time on serving the animals.

• A.I does not achieve 100% results as the success rate of conception is 80 %.

21.It is important to prevent soils degradation rather than attempting to cure it after the damage has been done. Explain how farmers in your area use physical methods of conserving soil.

1. Afforestation. Afforestation is the planting of trees where they did not exist before. This will help to reduce water and wind erosion It will also improve the soil structure.

2. Good farming practices. They reduce soil erosion, maintain the soil structure and restore soil nutrients

3. Mulching and planting cover crops. Mulching is the process of covering the ground surface with materials such as plant residues, manures and plastic sheets.Cover crops are crops that

are grown to protect the ground from wind and water erosion.They help to conserve soil and water

4. Proper disposal of industrial wastes. Chemical waste from industries should be disposed of properly and not in water. This will reduce water pollution which in turn will reduce soil pollution since farmers use the same water for irrigation.

5. Controlled use of chemicals. The use of chemical fertilizers and pesticides should be reduced to prevent acidification of the soil .Acidic soils should be restored through liming.

22.“Evidence shows that the use of agricultural technology in Malawi is biased towards

males.”Explain any five cause for this.

°Lack of early socialisation to technology. In Malawi, boys are exposed to technological innovations early in their lives as compared to girls and this prepares the boys to deal with the technology in future.

°Lack of technological information.Men are favoured in acquisition of information.Our culture gives free mobility to boys and not girls as a result, boys can seek information from many sources.

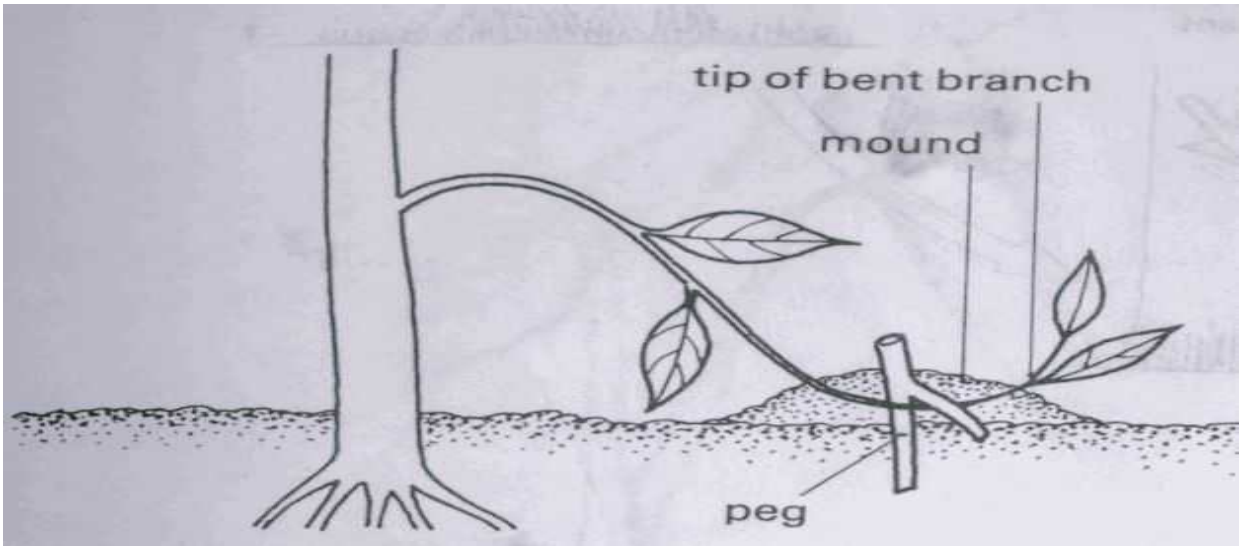
°Lack of access to capital. Culturally, males assume control over capital items and this makes it easy for them to buy technological items.

° Discriminatory attitudes and gender stereotypes. Malawian society is generally biased towards females in the use of various technologies e.g. it is strange to see a woman driving a tractor.

°Lack of confidence. Most females are not confident to use the technological equipmentmostly because they have not been in contact with them in the early days.

°Lack of exposure to role models. There are few older women in technologically challenging positions who young female farmers can copy

23.With the aid of well labelled diagram explain how fruits can be propagated by layering



+A branch of a tree is bent and pegged into the ground while still attached to the mother plant.

+The pegged branch is watered regularly until it develops roots of it's own.

+When roots are developed , the branch is cut off from the mother plant and planted elsewhere.

24.Explain any five seed treatments done In pasture establishment.

•Hulling. Hulling is the process of removing the outer covering or husks of a seed It is usually done in legume seeds.It ensures that the seeds grow quickly after they have been planted.

•Scarification.Scarification is a method used in weakening the seed coat or husks of the pasture seeds before planting them. However there are three methods of doing this which are mechanical treatment , hot water treatment and acid treatment.

•Inoculation. Seed inoculation is the introduction of nitrogen fixing bacteria into a legume seed to help fix nitrogen in the soil.

•Pelleting.Pelleting is the process of coating seeds with materials or substances that are inert or lifeless to make them uniform in size and shape.

25.Discuss any five signs of heat in a cow.

•The vulva becomes red.

•There is frequent urination.

•The cow mounts other cattle and stands still when mounted.

•There is mucas discharge from the vulva.

•The cow becomes restless.

•Milk production declines in lactating cows.

26. Explain any five factors to consider before choosing an irrigation system.

•The cost of buying and setting up the irrigation unit. It is of high importance to consider the cost of the requirements for a particular irrigation system.

•Topograpy of the land. Surface irrigation requires a slightly slanted land since water moves along by gravity.

•The value of crop under the irrigation system. An irrigation system like overhead / sprinkler for example is expensive to maintain or set up hence requires crops that will bring maximum profit to incur the cost.

•Availability of water. Water must be available in vast amount near to the farm.

•Demand of the crop to be put under irrigation. The crops under irrigation must be of high demand to ensure that the farmer gets maximum returns or ptofit.

27.Explain any five factors that affect enterprise combination.

1. Availability of farming resources. For instance land, labour , these are farming resources.

2. Farmer's food requirements. Food production is a priority.

3. Profitability of enterprises. Can be determined by deducting expected costs from the expected income

4. Nature of enterprises (relationship between enterprises) whether Competitive Complementary or Supplementary.

5. Opportunity cost. The return that is given up (returns that are lost from an enterprise due to stopping engaging in it)

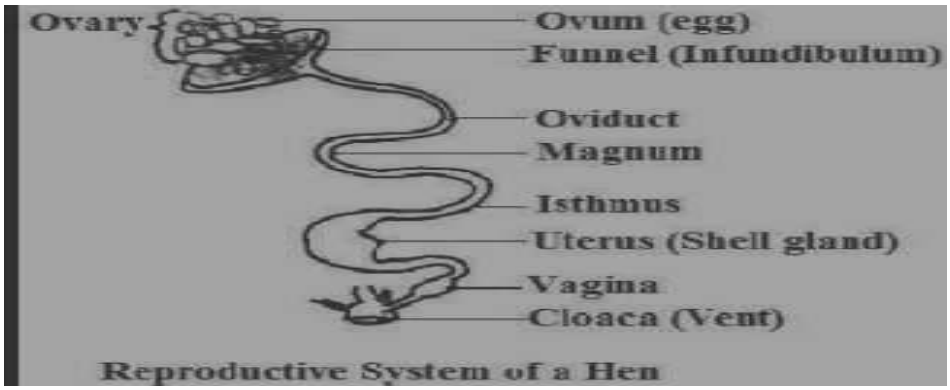
6. Comparative advantage

7. Price changes

8. Changes in technology

9. Risks and uncertainty

28. With the aid of a well labelled diagram, describe egg production process in a hen.



• The egg is formed both in the ovary and the oviduct.

• When a hen matures some of the ova develop into mature York inside a productive follicle.

• When the York is released from the follicle, it goes to the infundibulum.fertilization of an egg is done in the infundibulum because this is where sperms from a cock are stored.

• Magnum is also a part within the oviduct where albumen of an egg is added.

• Isthmus is below the magnum where mineral salts, water, and shell membrane get added to the egg. From the isthmus the egg goes and stays in the uterus for 18-21 hours

• Uterus is where egg shell is added to the egg.

• It takes 24 hours from ovulation in the ovary to the laying of an egg.

• The pores are sealed in the vagina.

• The egg is laid through the cloaca (vent) from the vagina.

29. Explain any five ways of conserving water.

1.Physical measures of water conservation

• Constructing storm water drains which divert water from up land into a natural or artificial water way.

• Constructing tie or box ridges which help to hold water in furrows, allowing water to soak into the soil.

• Constructing contour (Ridges across the slope)

• Construction of dams as an artificial water reservoir

2. Biological measures of water conservation

• Planting trees and grasses to maintain soil cover

• Planting close growing cover crops such as groundnuts and sweet potatoes

• Practice strip cropping to reduce run-off

• Practicing agro forestry

• Practicing crop rotation

• Controlling bush fires

• Reducing the stocking rate to prevent overgrazing

• Practicing rotational grazing

• Practicing family planning to control high population growth hence reducing pressure exerted on land and soil resources

30.Discuss disadvantages of asexual propagation.

+ High risky of disease transfer.

+ Some methods in asexual propagation require specialized skills.

+ Vegitative planting materials can not stay viable for a long period of time.

+ Vegitative planting materials tend to be bulky.

+ Some processes involved in asexual propagation are long and makes the whole process boring.

31.Explain any five differences between marketing and trading of agricultural commodities

°Marketing is concerned mainly with the satisfaction of the consumer whereas trading is concerned mainly with the local sales

°Marketing Involves numerous processes hence very wide whereas trading Involves only buying and selling hence not wide.

°Marketing produces after thorough research to determine what the consumer wants Whereas trading uses resources to buy and then sell at a profit

°Marketing produces to the market demand and make some profit Whereas trading aims at making profit by disposing any surplus commodity

°Marketing uses selling as means of communicating with consumers and understanding their needs whereas trading uses selling as a means to an end

°Marketing directs resources of the farm to produce the commodities consumers need Whereas trading directs resources to bring about a sale/purchase.

32.Describe any five agricultural technologies which ensure food security.

°Fertilizer technology. Fertilizers contain mineral ions which improves soil fertility. This ensures that crops grow well enough. This ensure food security in the end.

°Irrigation technology. Irrigation systems help to save crops from drying in dry seasons or dry spells. It ensures food security since crops can be grown through out the whole year.

°Mechanisation. Use of farm machery help farmers caltivate huge tracts of land faster than they would if they were using holes. This technology ensures food security since farming is done at a huge scale and more yields are made available

°Use of improved seeds. This technology is essential since it combines characters/ traits of so many crop varieties. For instance high yielding crop but prone to diseases crossed with low yielding crop that has high disease resistance. This ensures food security in a sense that farmers will sow seeds that are disease resistant and high yielding.

°Storage and processing technology. The use of sacks and good storage facilities ensures that food is made available to everyone through out the year. Processing food for instance mango to make mango juice helps in times where mangos are not available.

33.Describe five Causes of Soil Salinity

i. Fertilizer application.The continuous application of soluble salt containing fertilizer results into build up of such soluble salts in the soil hence soil salinity.

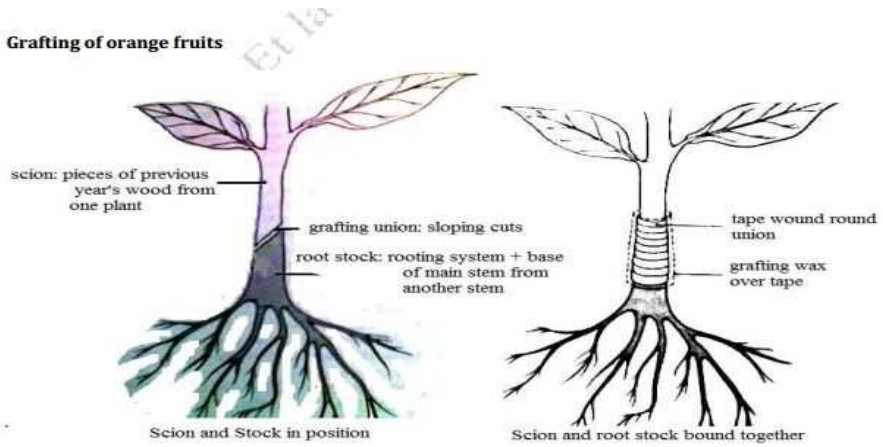
ii. Poor drainage. Poor soil drainage has a superficial layer of water above them where soluble salts have dissolved in the soil leading soil salinity.

iii. Irrigation. Irrigating crops using poor quality (salty) water increases the concentration of soluble salts onto the soil.

iv. Parent rock material. An underlying rock material containing soluble salts will exude the soluble into soil

v. Low rainfall but high evaporation. Low rainfall areas usually associated with high evaporation. .The little water that dissolves soluble salts quality evaporates leaving salt crystals on the top soil.

34 describe the process of grafting with the aid of a diagram where necessary.



This involves joining a scion to a stock so that one plant can have good qualities of two different plants.

The two plants must be of the same species and same thickness .i.e. lemons and oranges

The cambium layers must be matched.

The cut should be slanting or v-shape and the union be neatly fitted and tapped

35.Outline five factors that influence the adoption of crop rotation program.

Alternating tap (deep) rooted crops with fibrous (shallow) rooted crops

Alternating leguminous crops (beans, groundnuts, peas) with non leguminous crops (cereals, cotton, tobacco)

Alternating heavy feeders (soil exhausting crops) with light feeders

Alternating crops that are resistant to specific diseases with susceptible crops to those diseases

Alternating crops with good soil cover with those having little soil cover

Crops with similar nutrient demands; growth characteristics; disease pest and weed attacks, should not follow each other

Crops which are easy to weed should alternate with crops which are difficult to weed

Select the crop sequences which produce the highest yields first and allow for easy control of weeds, pests and diseases.

36.Factors to Consider when Establishing an Orchard

The fruits should be resistant to local diseases and pests

Fruits should have good internal and external quality

It should mature early while other should be late maturity to extend mango period

It should have high yield

37. Write an essay on the importance of mushroom production

Mushrooms provide us with valuable nutrients. Eg. Proteins, vitamins, minerals

Creates employment opportunities. eg. Self and to others

Source of income to farmers after sales

Source of foreign exchange if done at large scale

Helps in cleaning up the environment as it makes use of waste products of the forest and animals

Assists in crop diversity

+Source of medicine.

38.Explain the Importance of agricultural cooperatives

Carry out all marketing functions on behalf of the farmers.

Provide short-term credit facilities to their members. These are in terms of inputs or cash loans payable by the end of the production period.

Negotiate for fair prices for both input purchase and sale of farmers produce.

Distribute farm inputs to their members.

Provide extension services and machinery hire services to their members.

Advise their members on new and better methods of production.

Keep records on all activities of the cooperative and inform the members accordingly during annual general meetings.

Pay dividends to their members.

Some provide banking services to their members.

Some invest money on behalf of their farmers.

Easy for farmers to secure or obtain loans from commercial banks

39.Outline Challenges in running agricultural cooperatives

Inadequate financial capital

Lack of infrastructure, equipment, transport

Poor leadership and management

Lack of equity and equality among members

Lack of social responsibility and self-help spirit

Lack of motivation and expertise among managers and staff

Limited experience and knowledge

40. With the aid of a well labeled diagram describe stages of the law of diminishing marginal returns.

Stages of the law of diminishing marginal returns

Amount of seed (kg/ha)	Marginal yield (kg/ha)	Stage of marginal returns
0	0	Increasing marginal returns
1	11	
2	20	
3	22	Diminishing marginal returns
4	19	
5	13	
6	7	Negative marginal returns
7	-1	
8	-8	

1. Stage of increasing marginal returns.The addition in input causes the marginal output to rise .There is availability of other productive resources held constant but relatively abundant for the amount of seed used.

2. Stage of diminishing marginal returns.The additional input causes the marginal output to lessen (but still positive).The plant population is becoming greater and greater.The competition between plants for fixed resources becomes higher and higher.

3. Stage of negative returns.The additional input (seed) becomes too excessive (too much) compared to the fixed resources.This causes the marginal output to negative (less than zero)the plant population becomes too much for the available fixed resources Leading to severe competition for soil nutrients, water, space, oxygen and light .Plants develop deficiency diseases, shade one another or even suffocate Due to poor air circulation or insufficient oxygen.

41. explain the importance of the principle of diminishing in marginal decision making.

It helps the farmer to understand the relationship between level of input and level of production.

It helps the farmer to identify the point (stage) when diminishing returns set-in

It helps the farmer to deal with increasing marginal costs that would otherwise arise from increasing levels of inputs.

It helps the farmer to avoid waste of farming resources

It helps the farmer to understand that there is a point or stage where benefits of doing something will slowly decrease.

It helps the farmer to understand that spending and investing more and more in a product

where other factors remain the same mean that the returns will eventually begin to diminish in the long run.

42 . Preparation of different materials to be used as substrates for mushroom production

1. Maize stalks, rice straws and banana leaves. finely chop the stalks, straws or leaves. pre-wet the chopped material by soaking them in water overnight. drain them or incubate them on a cemented platform or a plastic overnight. supplement them with rice or wheat bran, water hyacinth or calcitic lime to improve mushroom yield (mass)then pasteurise the content

2. Cotton wastes.cotton waste is soaked or wetted for a few hours in water to which a detergent has been added as a softener and a detergent.l the water is squeezed out and the cotton waste loosened. supplement with lime and other materials to improve pH and aeration . then pasteurise the content

3 Saw dust .Saw dust must be obtained from hardwood, e.g., M'bawa, Muwanga or other broad-leaved trees.saw dust is wetted. incubate the wetted saw dust overnight. supplement with different materials. then pasteurise the content

4 Corn (Maize) cobs. cobs are shredded into 1 to 2 cm pieces .cobs can be moisturised and incubated for 1 to 2 days .then pasteurise the content Sometimes the immersion in hot water method can be used.

43. In an essay form describe Ways through which farmers can safeguard themselves against risks and uncertainty

Selecting a more reliable enterprise (one that is unlikely to fail).

Producing several crops (diversification). This ensures the farmer that if one crop fails the farmer can relay on the other crops.

Flexibility in methods of production

Practising input substitution

Keeping food in reserve to ensure food security during bad seasons

Rationing the inputs to adjust uncertainty

Insuring their enterprises

44.Describe the procedure for propagating plants using leaves

water the plant before collecting the leaf.

select a healthy, mature succulent (juicy) leaf from the parent plant.

remove the petiole (leafstalk) with a sharp knife.

cut the leaf across several of the larger veins with a sharp knife or scissors.

dust the cut veins with a rooting hormone to encourage the production of new roots.

place the prepared leaf into a pot field with damp soil as soon as possible, when the leaf cutting is still fresh.

pin the leaf flat, bottom-side-down, to the surface of the soil using thorns, toothpicks, or sharpened matchsticks to pierce the leaf. to ensure that the leaf stays in contact with the moist soil at all times.

place the pot with the cutting into a transparent plastic bagto prevent the leaf cutting from wilting as the bag provides humidity and to allow the leaf cutting to get sunlight for photosynthesis.

water the cutting (when necessary) while it is inside the bag.

remove the cutting from the bag when new leaves or shoots are seen beginning to form.

when each of the shoots (new tiny plants growing from the original leaf) has two sets of leaves, separate the new shoots by cutting the leaf apart with a knife or scissors into separate sections.

transplant each of the new plants into separate small pots or polythene tubes filled with soil.

45. Describe five ways of managing saline soils

- Irrigating soil by flooding with salt free water. Salts are flushed out and become leached

-Drainage.To carry some salts away.

-Application of gypsum. Helps to convert insoluble carbonate salts into sulphates (readily soluble and easily leached through irrigation)

-Preventing or reducing evaporation. Minimizes build up of salts in the soil

-Growing salt tolerant crops.That can successfully survive in saline soils

46. Outline the Importance of water harvesting

It helps to reduce soil erosion from run-off

It is a source of water supply during dry periods

It ensures that the water demand in areas with inadequate water supply is met

It helps to mitigate the flooding in low lying areas

It reduces demand on wells which may lead to ground water to be sustained

47. Explain the Importance of land drainage

It enables human beings to reclaim land from low productivity areas, e.g., swamps, marshes and waterlogged areas for agricultural use

It helps to improve a particular area and increase its efficiency and productivity when used for crop production

It reduces pollution and accumulation of chemicals and industrial wastes in water

It reduces the spread of water-borne diseases

It facilitates entry and circulation of air in the soil

It makes the soil easy to work with. Soils that contain excessive water stick to farming implements.

It helps to prevent flooding

48.Outline factors affecting pasture seed rate

=Size of the seed.pTiny seeds will require lower seed rate as compared to bigger seeds

=Soil tilth.Tilth refers to the condition of the soil in relation to its ability to support pasture growth. A seed bed with better tilth promotes better germination rate hence requires lower seed rate as compared to soil with poor tilth

=Growth habit of pasture method of sowing.Pasture species which spreads or produces more shoots or tillers should have lower seed rate

=Type of pasture.A mixed pasture should have lower seed rate as compared to pure stand pasture.To avoid over-competition for soil nutrients

=Method of sowing. Broadcasted seeds have higher seed rate than drilled seeds

=Purity percentage. Pure seeds require lower seed rates than those that are contaminated with foreign materials and dirty

=Germination percentage.Seeds which are suspected to be of a lower viability will require higher seed rat.

49. Describe the Procedure for inoculating legume seeds

Pour the legume seeds into a clean polythene

Sprinkle drops of clean water or milk on the seeds to cover every seed

Scatter the inoculant evenly over the heap of moist seeds and mix thoroughly with clean sticks. So that the inoculant covers every seed

Spread the seeds on a flat surface to dry for one or two hours under a shade

After the seeds are dry, plant them using a suitable method.

50. outline the Procedure for silage making

(i) Cut the crop at the correct maturity stage or maximum nutrient content

(ii) Allow the crop to wilt to acceptable moisture level

(iii) Chop the forage to reasonable sizes and fill in the silo

(iv) Spread the material in the silo evenly and compact well with heavy equipment

(v) Fill the silo up to about 1 metre on the first day

(vi) On the second day, make sure the temperature in the material is about 32.2 C before starting filling.p Higher temperature shows that more pcompaction is needed

(vii) Complete the filling on the third or fourth day and cover the silo to ensure that no air gets in

(viii) Dig a trench around the silo to keep surface water away Molasses can be added to the silage material to encourage fermentation of lactic acid.

51 extrapolate the Procedure for making hay

(i) Cut the crop at its highest nutrient value. avoid using mature crops as they are too succulent

(ii) Allow the crop to dry in the field for 24 hours depending on the weather condition

(iii) Spread out the cut forage on a dry surface to allow further drying up to 48 hours before baling or making bundles.baling should be done 72 hours after cutting

(iv) Stacking the dry material into bales or bundles.

52 Extract Factors that affect quality of conserved pasture

Leafiness of pasture. Pasture that is very leafy after growth produced good quality hay or silage. Pasture that is woody produces poor quality hay or silage

Age at which pasture is cut. When cut at high nutrient value, the hay or silage will have high nutrient content dry matter content

Moisture content.Hay and silage with high moisture content will turn mouldy and will decompose Very dry hay will break during handling leading to low quantity

Presence of foreign materials.Stones and twigs in conserved pasture lowers its quality

Method of storage.Poor storage lowers the quality of hay or silage

Weather conditions. It is more difficult to prepare and keep high quality hay when the weather is very wet than when it is dry

Pasture species used.A pure stand of legumes or a mixed grass-legume pasture will produce high quality feed than using grass alone. Some grass species are also more nutritious than others

53.Out out five factors to consider when constructing a milking parlour

It should have a resting area

It should have an area for the animal to do exercises

It should have adequate feeding and water space

Separate the milking area from the feeding, watering and exercise areas

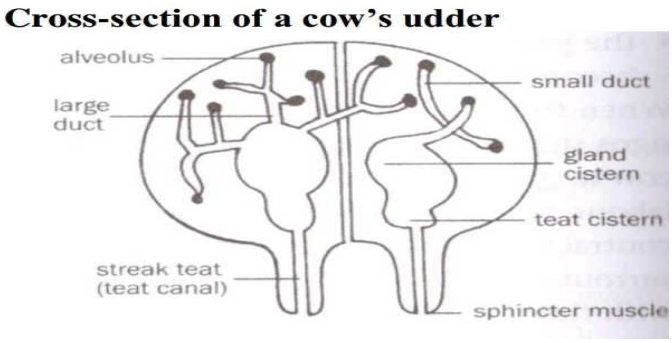
It should have feed, milking equipment and drugs stores

Calf pens must be near the dairy shed

Provision for proper waste disposal

It should have concrete floor in the milking section, feeding, watering and exercise areas

54.With the aid of a diagram describe the process of milk letdown



When the dairy cow hears the sound of milking churns or cry of a calf the pituitary gland secretes a hormone oxytocin which is released into the blood stream. As oxytocin reaches the udder region, it causes the basket cells (myo epithelial cells) to contract, hence squeezing milk from the lumen of alveoli secretory cells into the smaller ducts. From smaller ducts, milk flows into large ducts and is stored in the cistern gland and then into teat cistern. Upon milking the cow, the milk is then squeezed through the teat canal and is let out through the sphincter muscle

55.Outline five signs of complications during the process of parturition

A long delay in the appearance of the calf once the water bag breaking

If calving is taking more than 3 hours after some parts of the calf appear

In case of breech presentation (rear parts trying to come out first)

If the cow is in distress such that there is no sign of water bag after many hours of straining

Only one limb appearing after the water bag has burst

Discharge of smelly fluid indicating death of the calf

56.Describe 4 types of farm structure.

1. Production structures.These are farm structures used for crop and livestock production, e.g. spray race, cattle crush, milking parlour.

2. Storage structures.These are farm structures used for proper storage of farm produce, inputs and implements, e.g. warehouses, silos, granaries, crib

3. Transportation structures.These are farm structures that are used for or aid in transportation of farm produce, inputs and implements, e.g. roads and bridges, trailers, oxcarts, vehicles bicycles

4. Miscellaneous structures. These are farm structures used for other functions, e.g. fence, farmer's houses, farmer's offices

57.Explain the Importance of agricultural research

Coming up with high yielding varieties of crops and breeds of livestock in order to increase food production, thereby reducing hunger

Coming up with better storage facilities in order to reduce post-harvest storage losses

Farmers can sell excess harvests for cash

Due to increased productivity, the other land can be used for other agricultural activities, e.g. livestock production

58.Describe how you would make compost manure.

+ Gather plant residues

+ Pile them on a heap or in a pit in layers

+ Add a source of nitrogen to the material in form of nitrogen fertilizer or already decayed farmyard MANURE

+ Vary drying materials such as maize stalks need to be added with water to facilitate decomposition

+ Turn the material occasionally in order to promote decomposition by allowing air to penetrate into the pit or heap

+ If compost is done in the wet season, find a place where soil is free draining

+ Cover up pit/heap with a layer of soil once full.

59. Discuss ways of controlling predators of chickens

Keep the chickens in complete confinement so that they are not exposed to any of these predators

Where chickens are raised in a house with a run (open space), wire mesh should be put above the open space. So that no predator enters the open space through the top

Keep the house well illuminated. So that the farmer can see the inside clearly

Vents should be filled with wire mesh. To avoid snakes, wild cats from using them to enter the house

60.Describe various methods of randomizing treatments

√Use of a coin. Since a coin has two sides, it is used where there are two treatments only. Each treatment is assigned either Head or Tail.A coin is tossed and observe the side facing up.Then

allocate the treatment for that side in that plot.

√Use of a dice. A dice has six sides, hence it is used where the maximum number of treatment is six. Each treatment is assigned a number .The dice is then thrown and a side isobserved. Then, the treatment for such a side is allocated to that plot.

√Using secret numbered pieces of paper.Here treatments in form of numbers are written on pieces of paper and then folded. The number of pieces of paper corresponds to the number of treatments.The pieces are put in a container, preferably a box and shaken.The pieces are picked one at a time until all of them are picked and then the treatments are allocated to the plots according to the sequence of picking of pieces of paper.

√Use of random number tables.Random numbers are sets of digits (i.e., 0,1,2,3,4,5,6,7,8,9) arranged in random order.Random number tables can be used to allocate up to nine treatments to experimental plots. When allocating the treatments a column is chosen. Where the experiment has less than nine treatments (e.g. six) seven, eight and nine are disregarded.

Edo Nellz MW

THE FUTURE IS IN YOUR HANDS YES YOU HARVEST WHAT YOU SOW IN THE END. YOU GOTTA GO HARDER GOTTA MOVE SMART. HOPE THIS HELPS EVERY AGRICULTURE STUDENT ON THE ESSAYS

WISHING EVERYONE A SUCCESS IN THEIR ACADEMIC PROCESSIONS. "REMEMBER" YOU NEVER FAIL UNLESS YOU STOP TRYING.

LOVE YOU ALL IT'S YA BOY "EDO NELLZ"

Malawi National examinations

Around the Corner N*ggaz prepare thoroughly well

TO GOD BE THE GLORY


HALO
PRODUCTIONS