

CROP PRODUCTION III

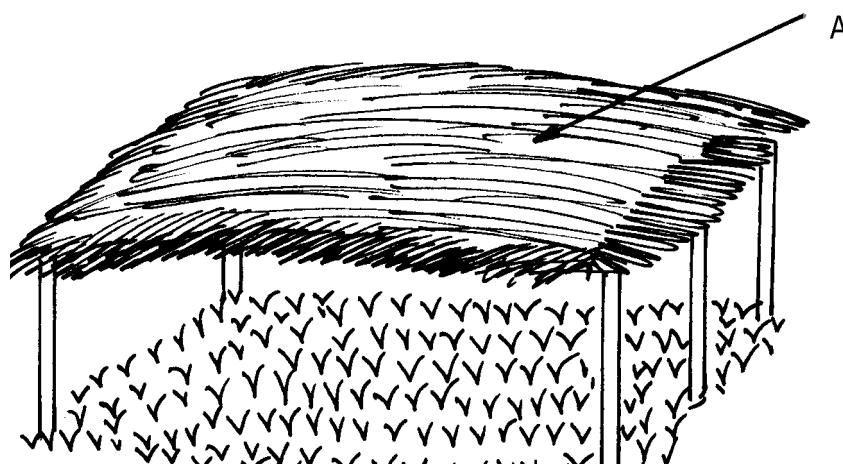
NURSERY MANAGEMENT PRACTICES

This topic entails the following:

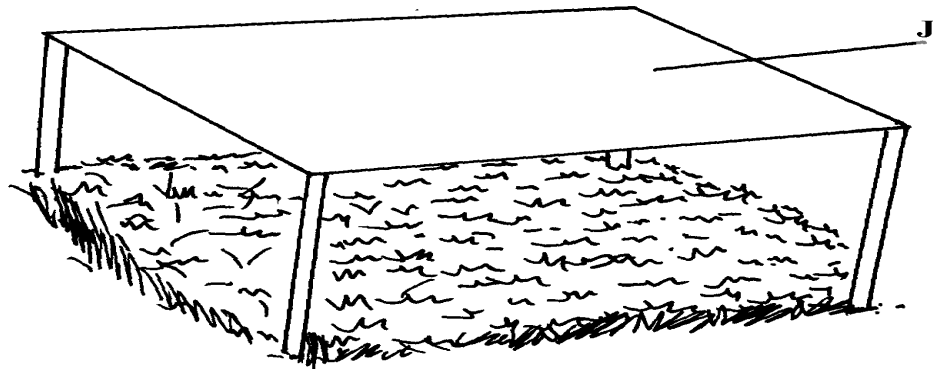
- A nursery bed
- A nursery bed and a seed bed
- Reasons of establishing nursery bed
- Suitable site for nursery bed
- Nursery bed preparation
- Nursery bed management practices
- Transplanting seedling crops from nursery bed
- Budding a seedling
- Grafting a seedling
- Reasons for budding, grafting and layering
- Tissue culture
- Damage caused by animals to a seedling and prevention.

The following relevant questions and their answers in this topic will greatly help and motivate the user to comprehend and understand the required concepts and practices.

1. Name **three** methods of grafting that are used in propagation of plants
2. State **two** practices done during hardening-off of seedlings in a nursery bed.
3. List **two** methods of budding used in crop propagation
4. List **four** management practices carried out on a nursery bed
5. Outline **two** importance of tissue culture in crop propagation
6. Differentiate between a nursery bed and a seedling bed
7. Give **four** advantages of under sowing in pasture production
8. Give **four** advantages of under sowing in pasture production
9. The diagram below shows a structure used in crop production:



- (a) Identify the structure above
- (b) Give a reason for carrying out each of the following practices in the structure shown above
 - (i) Pricking out
 - (ii) Hardening off
- (c) State three importance of the part labeled A in the above structure
10. (a) Describe the siting and establishment of a crop nursery
- (b) Explain management practices in a crop nursery
11. State **four** importance of thinning seedlings in the nursery bed
12. State the difference between a seedling bed and a seedbed.
13. Below is a diagram of a nursery for raising the seedlings



- (a) State **two** advantages of having the part labeled J
- (b) State any **three** management practices that should be carried out on the nursery from the time seedlings emerge to the stage of transplanting

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1. three methods of grafting that are used in propagation of plants
 - Whip are tongue grafting
 - Side grafting
 - Approach grafting
 - Bark grafting
 - Notch grafting
2. two practices done during hardening-off of seedlings in a nursery bed.
 - Gradual removal of shade

- Gradual reduce of watering
3. two methods of budding used in crop propagation (1mk)
 - T-budding
 - Top budding
 - Paten budding
4. four management practices carried out on a nursery bed (2mks)
 - Watering
 - Shading
 - Pest and disease control
 - Weed control
 - Mulching
 - Hardening off
 - Pricking out (1/2x4=2mks)
5. Two importance of tissue culture in crop propagation
 - Propagate pathogen free plants
 - Appropriate soil depth
 - Soil looseness
 - Should be weed free
 - Soil moisture content improved
6. - A nursery bed is a portion of land specially prepared to raise seedlings before transplanting while a seedling bed is a specially prepared portion of land for receiving pricked out seedlings from the nursery bed Mark as a whole (1 mk)
7. Four advantages of under sowing in pasture production
 - Amino acids/protein synthesis
 - Formulation of enzymes and hormones
 - Increase oil content and hormones
 - Needed for formation of chlorophyll
 - Aid in nitrogen fixation in legumes
 - Needed in carbohydrate metabolism
8. Four advantages of under sowing in pasture production
 - Amino acids/protein synthesis
 - Formulation of enzymes and hormones
 - Increase oil content and hormones
 - Needed for formation of chlorophyll
 - Aid in nitrogen fixation in legumes
 - Needed in carbohydrate metabolism
9. (a) The structure is a nursery

(b) Reason for carrying out each of the following practices in the structure shown above is:-

 - Pricking out – to avoid overcrowding /allow seedling to grow strong and healthy transfer seedlings from one nursery to another

- Hardening off – To prepare seedlings to ecological conditions in the main field/reduce transplanting shock
- (c) Three importance of the part labeled A in the above structure (1/2 x 3= 1

½ mk)

- To reduce the amount of water through vaporization
- To modify nursery temperature
- To reduce the impact of raindrops/hailstones hence minimizing damage on seedlings
- Reduce splash erosion
- Reduce the scorching effect in the seedlings
- Reduce the scorching effect in the seedlings

10. a) - Sitting crop nursery

- Good soil fertility
- Security against destruction
- Accessibility
- Should be near source of water
- Topography should discourage water logging

(1x5=5 mks)

b)- Establishment

- Prepare fine filth
- Add manure or fertilizers to the nursery
- Sterilize soil against soil borne pests/ diseases
- Shade the nursery bed
- Ensure nursery is 1m wide
- Plant seeds in drills and cover with light soil layer (1x5=5 mks)

b) Management practices

- Mulch to conserve moisture and suppress weeds
- Water regularly in the morning and afternoon
- Pricking – remove excess seedlings and transfer to another nursery or use polythene sleeves
- Weed control – done by hand uprooting
- Pest and disease control – use clean seeds and apply chemicals as recommended
- Hardening off – Done by removal of shade
- 1 week to transplanting to make seedlings survive after transplanting

11. State four importance of thinning seedlings in the nursery bed

- To control spread of pests and diseases
- To create space for other seedlings
- To avoid competition for light, nutrients
- Allow rapid growth of seedlings/vigorous (1/2x4=2mks)

12. Seedling bed is where overcrowded seedlings from the nursery bed are transferred while

seedbed is the final land where planting materials are raised until they are ready for harvesting.

13. a) two advantages of having the part labeled J

- To reduce the amount of water loss through evapo- transpiration
- To modify the temperature
- To reduce the impact of the raindrops thereby minimize the damage of seedlings/ reduce splash
- Retaining water

b) Management practices carried out on the nursery from the time the seedlings emerge to stage of transplanting

- Proper watering
- Controlling weeds
- Hardening off
- Pricking out