**CROP PRODUCTION I (LAND PREPARATION)**

1. three factors that determine depth of ploughing during land preparation

* Crop to be planted
* Implement available

Type of soil

2. Four reasons for cultivating land before planting.

- To improve soil aeration.

- To improve germination.

- Destroy weeds.

- Destroy weeds.

- Incorporate organic matter in the soil.

- Increase water infiltration.

3. (a)Is a situation in which least possible cultivation operations are carried out in crop

production.

(b) - Clearing the land / bush clearing.

- Using appropriate chemicals to kill the existing vegetation.

- Weeding using herbicides.

- Planting / drilling seeds directly into the stubble of previous crop.

4. (a) - Harrow the land to a fine filth;

- Harrow during the dry or before the rains;

- Make the seed be weed – free / ensure clean seed bed;

- Firm the seed bed using rollers after sowing;

- Select a desirable variety of seed for the ecological zone,;

- Sow seeds at the onset rains/ early planting;

- Apply phosphatic fertilizers at appropriate rate of 200 – 300 kgs/ ha at planting time;

- Drill or broadcast the seeds evenly;

- Use a recommended seed rate for the variety / seed rate of 1.5 – 2.0 kh/ha pure seeds;

- Bury seeds at 2 ½ times their diameter;

- Control weeds by uprooting/ apply a suitable herbicide;

- Apply nitrogenous fertilizers about 6 weeks after germination in split application.

- Avoid grazing when the pasture is too young.

- Practice light grazing in the field phase of pasture establishment. (10 x 1 = 10 mk)

(b) - Select seeds of the same size, variety, age and free from pests and diseases.

- Plant seeds at the same time.

- Prepare the whole field to required uniform tilth.

- Plant at the right moisture content of the soil / irrigation uniformly.

- Treat seeds before planting i.e. break dormancy.

- Plant at the correct depth. (5 x 1 = 5 mks)

(c) - Soil moisture content.

- Type of soil.

- Cost of operation.

- Size of seed/ type of planting material/ type of crop.

- Type of machinery available / use of tractors.

- Topography / gradient of the land/ liability of soil erosion.

- Skills of the operator.

- Initial conditions of the land/ the cropping history of the land.

- Time available to carry out the operation before planting.

5. Four physical conditions of the seedbed that need to be changed to facilitate

Germination

* Size of soil clods (clods (made small or medium size
* Appropriate soil depth
* Soil looseness
* Should be weed free

- Soil moisture content improved

6. Four importance of sub soiling as a tertiary operation

* Brings leached nutrients to the surface
* Breaks hard pans
* Promotes aeration of the soil
* Promotes water infiltration

- Ensures better root penetration

7. Four advantages of rolling in seedbed preparation are:

* Press the seeds against the soil moisture
* Controls soil erosion
* Ensure uniform germination
* Controls removal of small seeds by wind
* Breaks large soil cods

8. four disadvantages of minimum tillage

* The less porous surface increased soil erosion especially in heavily sols
* Difficulty in weed control
* Speed of planting to reduce due to large amount of residues in the soil and big clods

Leads to accumulating of soil borne pests and diseases

9. a) - ridging

b) (i) Encourage tuber expansion

* Allow easy harvesting of crop roots

(ii) Rolling

* + Leveling

10.

* Leads to timely planting
* Weeds are appropriately controlled especially the perennial such as couch grass
* Farmers take advantage of availability of labour reducing the cost of labour
* Control of soil borne pests

Gives time for better organic decomposition

11. - By repeated cultivation at the same depth;

- Cultivating the soil when wet using heavy machinery;

12. - Type and size of planting material;

- Topography/slope f land;

- Soil moisture content;

- (Initial) condition of land/amount of vegetation on the land;

-Capital available

- Type of implement used;

13. It is the least number of cultivation operations either during preparation of the seed bed or

during the management of the crops.

14.

* Market demand
* Type of crop to be planted
* Moisture condition of the soil and rainfall pattern
* Prevalence of pests and diseases
* Prevalence of weeds

15. two factors that determine the number of cultivation on a field before it is ready for planting

* purpose of crop
* moisture content
* concentration of desired chemical
* weather
* market demand

16. - Enables crop to benefit maximumly from available moisture

-Crops make use of nitrogen flush available at that time

-Crops fetch high market prices

-Crops escape from pests and diseases

-There is high vigour in crops that resist diseases

-Ensures timely harvesting

17. - type of crop to be planted

-Implements available

-Type of soil

-Climatic conditions