# VEGETABLES GARDEN

# The vegetable growing:

- Can be done as open and under protected conditions (protected cultivation, greenhouses)

# For Open Vegetable Growing is done for

- Fresh consumption
- Industry
- Seed production or seedling production

# For Open Vegetable Growing

- Site selection is important.
- Ecological factors should be taken into consideration:
- The first and the last frost dates
- Days number under o°C.
- Yearly, monthly and daily average temperatures
- Differences between day and night temperatures
- Rainfall
- Humidity and wind

# Soil characteristics

- Hot
- Moist and strained
- Deep, loose (sandy), soft
- Rich in hummus and nutrient
- 4% lime, pH 6.5-7

# Protected cultivation

- They can be;
- 1. Covering of soil (mulching)
- 2. Plastic tunnels
- 3. Greenhouses

# Mulching:

- Early fruit ripening
- Prevention of soil-borned diseases
- Prevention dirty fruit.

# Plastic tunnels

# Soilless cultivation


wikiHow


Serada damla sulama


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# Seedling production greenhouses


7
6
4
5

# Advantages of producing of vegetable crops by seedlings:

- Seedlings provide early crop production.
- This production technique saves land and seeds.
- It decreases energy expenses.
- It offers healthy production
- It gives the opportunity to stimulate production efficiency.
- It obtains homogeneous production

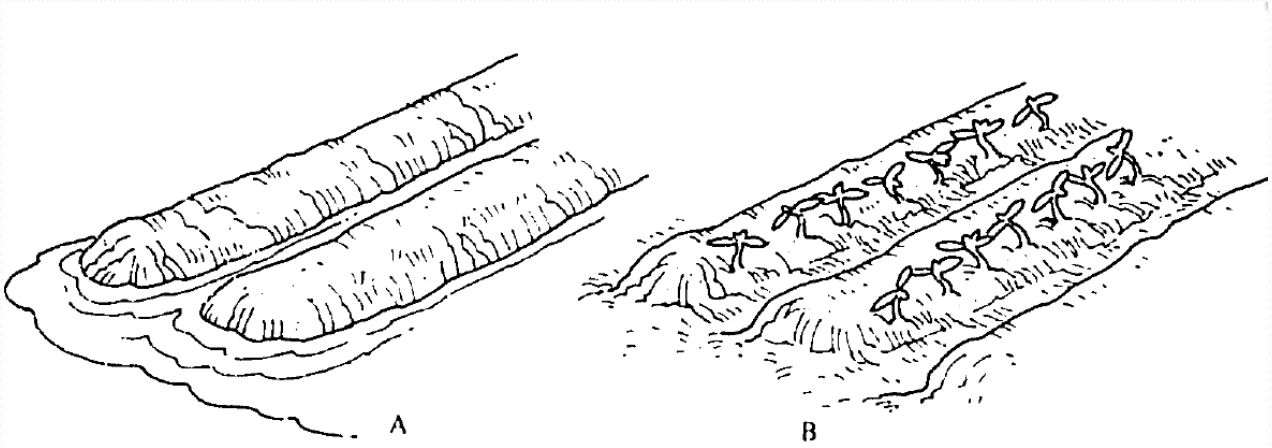
# Characteristics of a good vegetable seedling

- It is sound and healthy.
- It is alive and rich in dry matter.
- It is not too young and not too old.
- It should not be oversized, thick and strong.
- Its root system is intact.
- All seedlings must be of the same size and at the same development period.

# Planting Systems in Vegetables Preparation of Land

- Vegetable production has done mostly by using seedlings.
- If the field is dry, it must be irrigated thoroughly a few hours before transplanting.
- The irrigation is preferably localized along the plant rows, leaving the areas between the rows dry for the transplanting operation.
- This is possible with furrow and drip irrigation but not with sprinkler irrigation.
- Watering immediately before transplanting works with light sandy soil but not with clay soils. The latter tends to be sticky and difficult to manage during transplanting.
- Manure and fertilizer should be applied before transplanting.
- If mulch is to be applied, this must be spread before transplanting to prevent damage to the seedlings during mulch application.

- The field is Irrigated using the furrow method (a) before transplanting (b).



# Furrows:

- They are formed by raising the soil at certain intervals.
- They are water arcs with a width of 60-80 cm, a length of 6-10 m, and a height of 30-40 cm.
- There are water arcs between them.
- Since the products do not come into contact with irrigation water and mud, they do not rot.

Raised bed planting system


Furrow planting system

# Raised beds

- The place where the plants are grown is slightly raised.
- Width varies between 120x180 cm.
- Ideal for species that dislike water (onion, garlic).

- "Transplanting shock" refers to the temporary growth retardation or mortality of seedlings after transplanting.
- Seedlings can recover easily if watered frequently for one week after transplanting.

- **Direct seeding** can be done by drilling or broadcasting. The drill method is normally recommended under the following conditions: 1) when crops are widely spaced, such as White cucurbits; 2) for long-season crops, such as yard-long bean; 3) when weed problem is anticipated and mechanical weed control will be used; 4) when furrow irrigation will be used; and 5) when the seeds are expensive.


- **Direct seeding can be done by drilling in rows (a)or broadcasting (b).**

- Seeds should be placed deeper in light (sandy) soils to prevent them from drying up.
- Shallow planting is required in heavy soils.
- As a rule of thumb, the soil cover after settling should be about five times the diameter of the seed.
- The soil should be irrigated immediately after sowing to create a favorable condition for germination.
- It should be kept moist until the seedlings are established, by which time water can be applied less frequently.

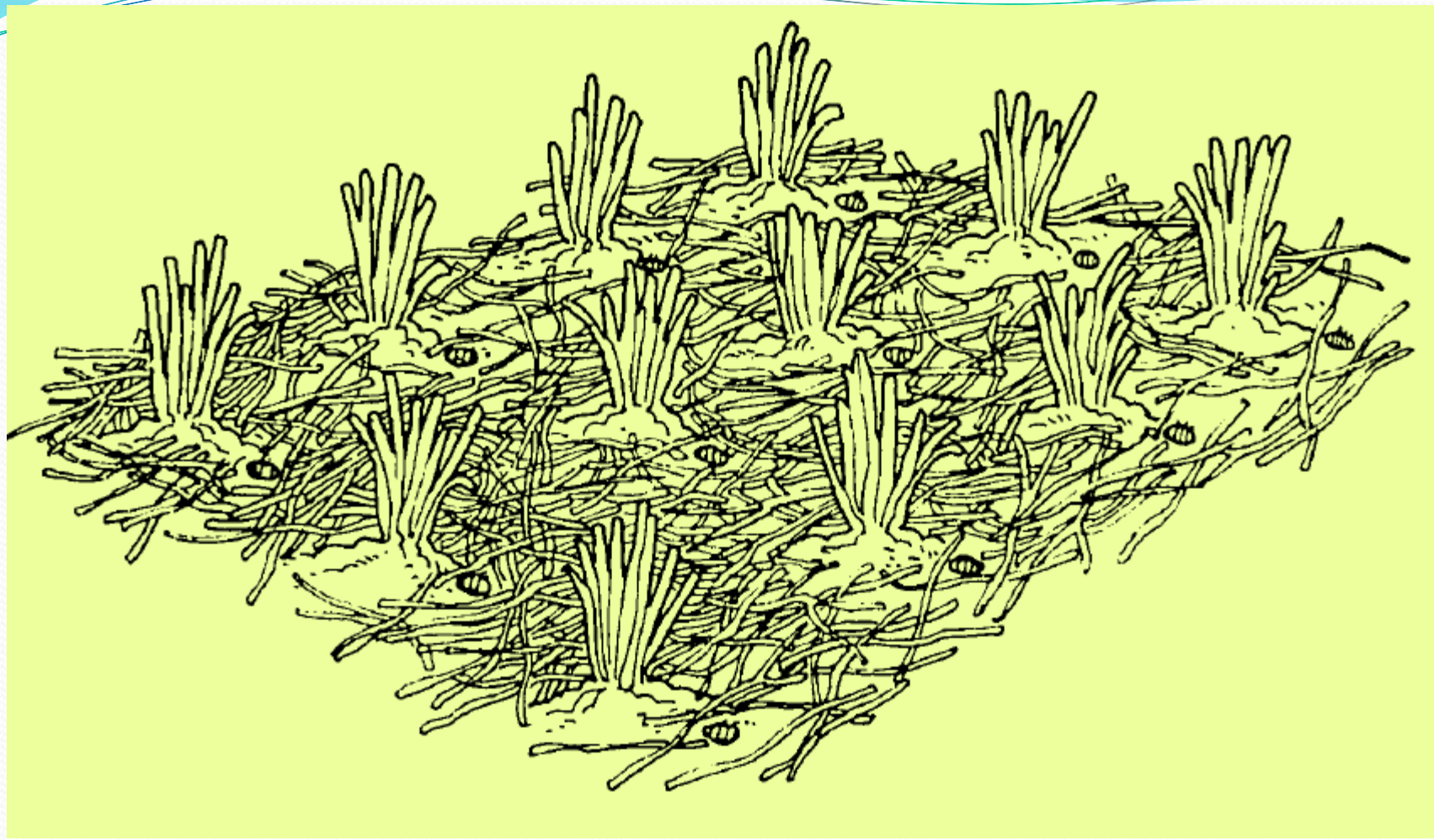
# Land preparation

- It is dons to create favorable conditions for seed germination, seedling establishment, and subsequent management of the crop. Properly done, it eliminates most of the weeds and soil-borne pathogenic microorganisms.
- It also improves the water holding capacity, drainage, and aeration of the soil. Likewise, it facilitates field operations, such as furrow irrigation and mechanized weed control.

# Paddy field

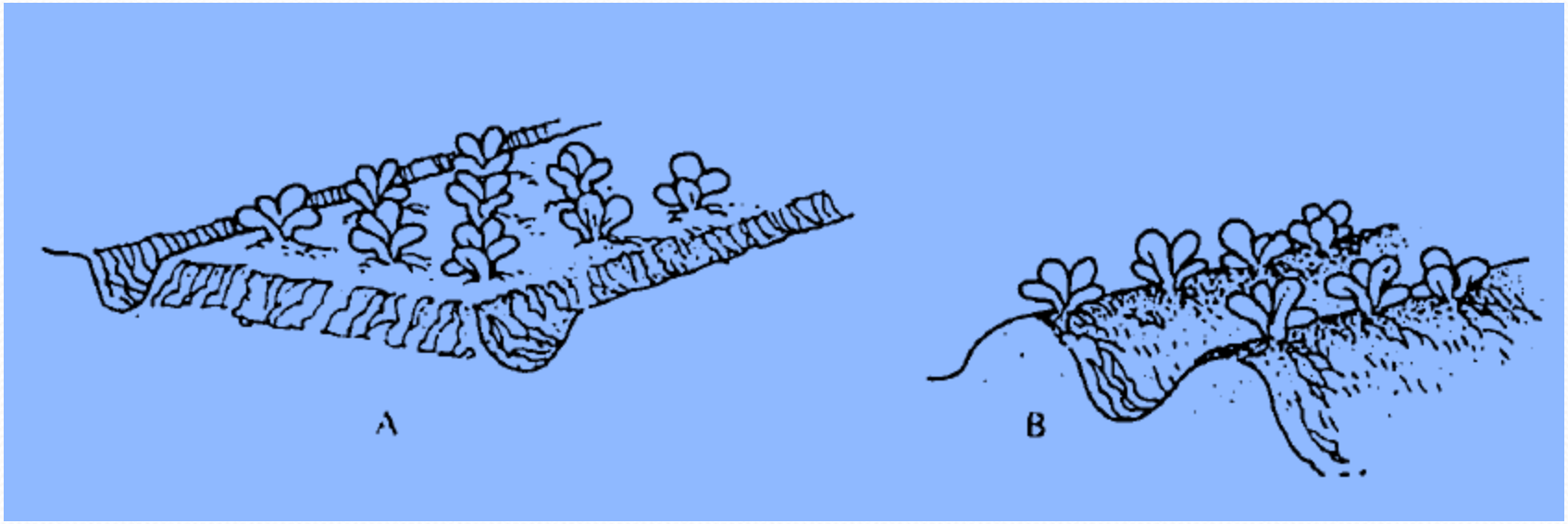
- In the tropics, a large number of commercial vegetables are grown during the cool, dry season immediately following the wet-season flooded rice crop.
- Under this condition, weeds and soil-borne diseases are minimal because of the prolonged anaerobic condition of the rice paddy which is unfavorable to the survival of weed seeds and pathogenic microorganisms. Consequently, the need for land preparation is diminished.
- Under rainfed conditions, land preparation may actually cause more harm than good because the soil tends to dry faster.

- Moreover, puddled condition of the soil may cause difficulty in land preparation, particularly in heavy clays.
- In difficult soils, land preparation is sometimes not practiced as in garlic production or done partially, as in watermelon production.



- Traditional way of planting garlic in Northern Luzon (Philippines) in paddy field after the rice crop, without land preparation. The field Is flooded after rice harvest, mulched with rice straw before planting.

# Different planting systems in vegetables




- Multiple-row bed (a)is preferred for dry season crop In non-mechanized farm with sprinkler irrigation. Single row bed (b) is preferred for wet season crop and for mechanized farms.

# Manuring, liming, and fertilizer application before planting

- If manure, lime, and fertilizers are needed, these can be applied through appropriate tractor-mounted machines. Lime is applied approximately one month before planting (after primary tillage) to allow enough time for it to react with the soil.
- Manure can be applied immediately before planting if the material is sufficiently dry and decomposed. Fresh manure tends to generate heat and ammonia during decomposition, and may directly harm the plant. Furthermore, decay microorganisms which are active in the decomposing manure may compete with the plant for nutrients, causing mineral deficiency.
- Chemical fertilizer may be broadcast like manure and lime or applied along the crop row during planting. The latter is preferred because it allows a more efficient utilization of fertilizer. However, it is not easy to mechanize application of fertilizer in this manner. Some seeding machines, however, are equipped with fertilizer applicators that put the fertilizer in precise location relative to the seed.

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# When we should do planting of vegetable seedlings???

- A cloudy, cool weather and moist but not wet soil are ideal for transplanting.
- During sunny days, transplanting is best done in the late afternoon to give time for the seedlings to recover at night.
- However, seedlings that are adequately hardened with slightly damaged roots recover well when transplanted in a well-irrigated field, even on a hot day.

# Planting time during year

- It changes based on:
- 1. Climatical conditions
- 2. Vegetable species
- 3. Harvest time
- Planting density changes based on vegetable species and cultivar, ecological conditions, cultivation asystem, production aim (for fresh consumption or industrial usage), mechanization technique.