**(Cucurbitaceae) (Gourd Family)**

**Cucumber: (*Cucumis sativus* L.)-1**

**Family: (Cucurbitaceae) (Gourd Family)**

**Plant description**: Cucumber is an annual crop consists of the following parts:

**-Roots:** The primary roots are strong and grow vertically to about 120 cm depth. Secondary roots distribute on the surface covering an area of about (60-90) cm wide**.**

**-Stem**: The stems of the cucumber are prostrate, angular, and covered by rough hairs. The length of the main stem may be (2-3) m.

**-Leaves**: The leaves are large, simple, and alternate with dark green color and have a slightly rough texture.

**-Flowers**: Flowers of most cultivars are unisexual and monoecious. Few cultivars are andromonoecious (bears both hermaphrodite and stamen (male) flowers in the same plant).More other cultivars are gynoecious (bears female flower only) which used in protected planting. The yellow flowers have 4-5 calyxes. Male flowers are single or borne in clusters, Smaller than female flowers .Female flowers are solitary

**-Fruits:** The fruit is cylindrical, solid and succulent berry with many seeds. The length of the fruit is ranging between (8-40) cm according to the variety. Fruits change color from pale green when young to white, yellow or brown when ripened depending on the color of fruit spines**.** Eachplant produces up to 25fruit**.**

**-Seeds**: Seeds are light yellow and the weight of 1000 seeds is about 20-30 gm.There are about 150 - 500 seeds per fruit.

**Cucumber varieties:** Cucumber varieties can be classified according to the following characteristics:

**1-Classification according to the purpose of use:**

 **A-Slicing varieties**: Moderate to long cylindrical fruits covered with small white hairs like Beit-Alpha.

**B-Pickling varieties:** Short to medium cylindrical fruits with black hairs like Sampson variety.

**2- Classification according to their content of seeds:**

**A-Parthenocarpic varieties which do not needs pollination:** Which are usually female cultivars free from seeds if it not pollinated, used in green houses.

**B-Varieties need pollination to form the fruits and it contain the seeds.**

**3- Classification according to the flowering habit:**

**A-Monoecious:** Produce both male and female flowers on the same plant.

**B-Gynoecious:** Produce female flowers only. These hybrids are early maturity and give high yield quantity compared with the monoecious varieties

**4- Classification according to the fruit shape:** Fruits may be global, cylindrical and may be thick or thin, short like pickle varieties, moderate or long or very longfruits like American varieties.

**Reproduction method:** Cucumber is reproduced sexually by seeds every donum needs about 800 gm of seeds.

**Planting method:** The cucumber is cultured directly by seeds in uncovered fields in wide rows separated by 1.25 m from each other only on one side or in two sides the distance between the rows must be (2-3) m and between the plants must be 30 cm. Every halls need 3-5 seeds then it thinned to 2 plants in every halls after germination. Cucumber also cultured in wide areas inside green houses, plastic houses and low tunnels in order to obtain cucumber fruits along the year. **The bitter taste in cucumber is appeared because of the presence of an alkaloidal substance called cucurbitaceous sometimes this substance is produced as genetic feature in a variety. Also some cultural process like lake of irrigation caused this problem.** Cucumbers require frequent irrigation during the growing period. Too little moisture will affect fruit shape whereas water soaked fields can lead to mildew and other disease problems.

**Harvesting:**

The time from planting to harvest can be relatively quick in as few as 36 to 40 days from planting depending on variety and weather conditions. Cucumbers are harvested as immature fruit when reached their full length. At suitable harvest maturity, a jellylike material has started to form in the seed cavity. Cucumber production will be reduced if the fruit are left on the plant for too long.

**Quantity of yield is about:** 12.5 ton/hectare .

**- Watermelon (*Citrullus lanatus* L.) 2**

**Family: Cucurbitaceae**

 **Description:**

 **Roots:** Watermelon features a highly branching taproot extending up to 1 m deep into the soil. Many lateral roots branches from the main root.

 **Stem**: The stem is a long, trailing vine reached to 5 m and more in length, highly branched; forming secondary side shoots which, in turn, branch out. The vines, especially the younger shoots, are covered with long, woolly hairs protecting the plant from overheating.

 **Leaves**: Watermelon leaves are heart shaped with three to seven lobes per leaf and are produced on trailing vines.

**-Flowers:** Watermelon vines like squash, pumpkin and cucumber have separate male and female flowers on the same plant. Plants are **monoecious** with yellow flowers that are approximately 3 cm in diameter

**Fruit**: The fruit is a 'pepo' - a fleshy fruit protected by a thick leathery rind. Fruit shape and appearance are quite varied, ranging from round to cylindrical and a single color to various striped patterns on the fruit surface. The edible flesh is usually pink with many flat, oval, black seeds throughout. Seedless varieties also exist. Watermelons weigh 3 kg to 4 kg.

**Watermelon Varieties:**

**1-Klondine:** Sweet , bright red watermelon variety. Typically weighing 9-15kg.

**2-Jubilee:** It is thick and pinkish red .Weighing between 10-15kg.

**3-Party:** It is one of the sweetest variety because of it is high sugar content, dark green with lighter green strips, between 9-11kg.

**4- Crimson Sweet:** Very sweet, yellow with green stripes.

**Planting**: Watermelon can be directly seeded in areas with a long, warm growing season but in more Northern climates it should be sown indoors and transplanted. If direct seeding, seeds should be sown after the last frosts and when the soil has warmed to at least 18.4°C . Allow 90–120 cm between seeds in a row and 150–180 cm between rows. If transplanting, seeds should be sown approximately 3–4 weeks before the last frost date in your area and transplanted after the plants develop their first set of true leaves. Seeds sown both indoors and outdoors require lightly moist soil for germination, care should be taken to avoid overwatering as seeds are prone to rotting. Seeds should germinate in 3–10 days depending on the soil temperature**.**

**Harvesting:**

Harvesting occurs **11-17 weeks after planting**. One field can be harvested several times, 2-3 days apart. Watermelon is harvested at **full maturity** and typically does not develop in internal color or increase in sugar after being removed from the vine.

**Quantity of yield:** 25- 30 ton/hectare.

**Watermelon maturity can be determined by a combination of indicators*:***

1-External fruit rind color

-Buttery-yellow color of the ground spot.2

3-Various stages of floral bract (leaf) and tendril drying out near the fruit peduncle.

-Dull sound when thumped.4

-Slight cracking sound internally, when whole fruit are pressed

**Diseases and insects:**

 **Disease:**

Damping off, Fusarium Wilt, Alternaria blight, White Mold, Cucumber mosaic virues, Scarb)

**Insects:** Cut worm, Whitefly, cotton thrips, Aphids)