**Summer Vegetable crops Production (2) (practical)**

**Solanaceae Family**

**C.N: Potato**

**S.N : *Solanum  tuberosum***

**Family: Solanacea**

**Plant description:**

 Potato plant **is** an erect, perennial, aromatic herb belong to the solanaceae family, it grows to (50-120) cm tall and it consist of the following parts:

**Roots:** The roots are numerous, fine, fibrous and adventitious. The depth of the root may reach to about 150 cm and the adventitious roots extended horizontally to about 40-60 cm before it grows down vertically.

**Stems**: Erect, succulent , winged and branched. It reach to about30-90 cm tall. Stems are generally green, but sometimes it may be red-brown or purple.

**Stolons:** Morphologically**,** potato stolons are lateral stems which grow horizontally from buds of the underground part of stem after 7-10 days from the appearance of the arial stems . Stolons may form tubers by enlargement of their terminal end. Un coveredstolon with soil may develop into a vertical stem with normal foliage.

**Tubers**: Morphologically, tubers are modified stems and constitute the main storage organs of the potato plant. A tuber has two ends; the heel end is attached to the stolon, the opposite side is called either the apical or distal end. The eyes of potato tuber corresponded to the nodes of stem. The eye buds grow out to form sprouts and anew stem of main stem.

**Leaves:** Alternate, pinnately compound leaves, made up of three or four pairs of oval leaflets and a terminal leaflet , its length reach to about 15 cm and they are dark green in color.

**Flowers:** Bisexual, White to pink, purple or blue, born in clusters, it is about (2.5) cm in diameter with a five parted corolla and yellow stamens.

**Fruits:** A succulent, spherical, yellow-green to purple berry, up to 4 cm in diameter some lack seeds, but others may contain several hundred seeds.

**Potato varieties:-**

There are many varieties of potato cultivated in the world, the most common varieties are:

1-**Spunta**: Holland cultivar, early maturity.Tubers of this cultivar are big, cylinder give high yield quantity in spring season.

2- **Draga**: Rounded tubers with white cortex, give a high yield quantity in spring season.

3-**Diamant**: Moderate late , big , yellow ,oval shaped tubers with strong vegetative growth and high yield quantity in both spring and fall season.

4- **Norgold Russet** – Oblong tuber with medium russet skin, medium yielding.

**Reproductive methods:-**

Potato is reproducted vegetatively by small complete tubers or big tubers after cutting them. The weight of the tubers must be about 56g and each donum requires about 450-700 kg of tubers. The succession of potato planting depends mainly on using good tuber seeds.

**The conditions of the good tuber seeds are:**

1-Not be infected by diseases especially the viral ones.

2-Must be sprouted and at the right physiological age.

3-These tuber seeds ought to be got from a documented source and specified with producing the certified seed.

4-Free from mechanical damages, not wrinkled nor weathered.

**Planting methods:-**

The soil should be well prepared with two plowings and then it divided into rows with the distance of 60-70cm between the rows and 25 cm between the tubers. The seed should be planted into moist, but not overly wet soil at a depth of at least 15 cm. In large farms this process will done by using special machines. Fertilization with N,P and k element is necessary in most kind of soils there quantities depends upon the soil tests. Cultivation is important for getting ride from the weeds which are found in the rows , also stripping soil from unplanted side and adding it to the planting plants in the other side of the rows will protect the tubers from being green as they are exposed to the sun light.

Potato becomes ripe after 90-120 days from planting depending on the variety and soil nature. Potato yield in Iraq reach to about 5-6 tons/donum in spring and 2.5-3.5 tons/donum in fall season.

**Management of disease and insect pests**

**Diseases:-**

Many potato diseases are fungal diseases, which flourish under certain temperature and humidity conditions. Other diseases such as viruses may be spread by aphids or other insects or be seed borne.

**Example of viral diseases are:**

**-Potato leaf roll virus**

**Examples of fungal diseases are:**

**Early Blight -**

**Late Blight** -

**Examples of bacterial diseases are:**

**Bacterial Soft Rot and Blackleg**-

**Insect Pests:-**

Colorado Potato Beetle-

Potato Leaf hopper-

Aphids -

Blister beetles-