Dates and methods of irrigation and fertilisation of vegetables (eggplant and peppers)

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Vegetables are one of the most important products the body needs to obtain healthy nutrition. They are also one of the most important sources of income for many farmers, agricultural workers, merchants, vendors and others. Producing these crops economically requires knowledge of agricultural processes. In particular, the irrigation schedules and methods are essential for attaining abundant production.

Host: What irrigation methods are used to grow eggplant?

The irrigation method of eggplants depends on several factors, including the type of soil and the method of cultivation, whether cultivation takes place in tunnels, sheltered houses, or on lines of cultivation, as well as the means available and the source of water and power.

Thus, the irrigation methods used by farmers are:

1. Flooding irrigation: This is an old method by using canals in which water is trapped for a specific time and then turned into another watershed. It is not advisable to use this method for several reasons, including increasing water consumption, salinisation of the soil, increased weeds and strange plants. This method also causes unequal quantities of water irrigated, increasing labour, control, and water waste increase expenditures.
2. Traction irrigation is a better irrigation method than flooding, but it also wastes water and is not regularly controlled by irrigation or composting.
3. Drip irrigation: a favourite method for growing eggplants for several reasons. It controls the amount of water, and it's possible to add certain pesticides and fertilisers to irrigation water to reduce grass growth and thus expenditure.
4. Spray irrigation, which is not common, is preferred by some farmers and technicians, often combined with drip irrigation. It has many benefits, including:

Eggplant leaves often hold dust and soil; spray irrigation cleans dust and soil particles trapped on the leaves. It also limits the spread of red spiders and many pests. A high-pressure sprinkler can replace the spray net.

Host: in your opinion, what are the best times for irrigation?

The best irrigation times are the early morning hours when temperatures are relatively cool or moderate and evaporation is reduced. This allows access to plant roots and also helping plants to withstand sun temperatures.

Failing that, the afternoon is the best time, as there is time for the plants to dry before sunset, limiting the spread of fungal diseases.

It is not advisable to irrigate at midday because it causes stress to plants where temperatures are high.

Host: The critical question is, when should I water my field? Irrigation Dates and Irrigation Tips

Presenter: Consider the weather and physiological vegetation status, pay attention to blooming times and plant-sensitive periods, and focus on the stemming area.

Use the appropriate irrigation method, drip irrigation, and spray to wash the plants in suitable atmospheric conditions.

Host: How much water is needed to irrigate eggplants?

Presenter: Eggplant is a water-loving and water-voracious vegetable crop compared to other vegetable crops, so the water situation and availability should be closely monitored.

The water requirements of eggplant vary, depending on several factors, including plant age, condition, soil type (e.g., sand soil, more irrigation than clay), weather (with higher temperatures and less humidity, more irrigation than rainy days and lower temperatures), and eggplant species (more water-loving varieties than others). Bear in mind that a lack of water may cause the crop to become bitter and undesirable for consumption.

In general, water needs increase as the plant grows larger and grows more productive.

The general rule is that every plant should be irrigated by about one litre every two to three days in the early stages of the plant.

Host: When do plants require more water?

Presenter: When temperatures rise as high as 35°C, eggplants require more irrigation water and repeated irrigation cycles. These can be daily, morning or evening.

Host: What's the suitable composting method with eggplant?

Presenter: It is recommended to analyse the soil every year or every six months to determine the availability of nutrients and the degree of soil acidity. You should also analyse the water, which most farmers neglect.

Composting methods are one of the most common ways to inject water-soluble fertilisers. They gradually save nutrients and give plants time to absorb them.

Host: How many times should I add manure to eggplants?

Presenter: Fertilisation occurs several times, up to ten or more times with water. Sometimes, paper fertiliser is used depending on the season, length, plant age, economic feasibility and weather conditions.

Host: What fertilisers are used to fertilise eggplants?

Presenter: Decomposing organic fertilisers tend to be used simultaneously on plants and soil because it is more healthy to supply plants with nutrients such as potash, phosphorus and nitrogen. They can also help retain water, dispose or discharge excess water, modify the soil structure, aerate roots, maintain stability over living organisms, and absorb many toxic substances such as lead.

Host: How can I use organic fertilisers?

Presenter: For fermented organic matter, there are two methods used. For the first method, we scatter it on the eggplants, or we mix it with the soil itself. The second method is using what is known as compost tea. We put organic fertilisers in bags and then soak them with water-filled basins or drums that soak up for four to seven days until they become tea-like and smell like dust, and then we inject them with irrigation water.

For chemical fertilisers, it is best to conduct a soil and water analysis to obtain the best results before farming, and then a fertiliser plan is developed to match the yield and soil.

In general one dunam needs: 16 kg urea-fertilizer 46%, about 23 kg ammonium nitrate 33%, 26 kg fertilizer superphosphate triple 46%, 24 kg fertilizer potash precursors 50%.

In general, the main focus is on nitrogen for green growth, phosphorus for root growth, and then about two or three weeks later, the focus is on the balanced fertiliser. At the time of pollination, a batch of high phosphorus fertiliser is given to encourage flowers. Then, high phosphorus and potash are added to increase flocking and zooming. We should not forget to provide calcium every 15 to 20 days.

Host: What fertilisers are needed to fertilise peppers?

Presenter: Soil analysis should be carried out to determine fertility and to determine which nutrients should are needed. Irrigation water analysis should also be carried out to assess its suitability for irrigation. In the early stages, the emphasis should be on nitrogen and phosphorus to increase roots growth, increase their capacity to absorb water and nutrients and promote plant resistance and endurance. Then, concentrate on phosphorus and potash at nodes, as these increases flowers and yields.

Host: What are the dates of the pepper fertiliser?

Presenter: Nitrous: easily soluble fertilisers such as ammonium nitrate and urea are added to irrigation water or soil by spraying them directly, taking into account that urea is not added at a temperature greater than 25°C. Fertilisers usually use superphosphate, potash sulfate, urea, and ammonium nitrate. Organic fertilisers, potassium, phosphates and urea, are added when the land is prepared for farming. Ammonium nitrate is added in three batches: the first instalment after two months of farming, the second after three months of farming, and the third addition after four months of farming.

Host: How much fertiliser is needed per dunum of pepper?

Presenter: The needs of a dunum of fertilisers are 16 kg urea fertiliser 46%, 23 kg ammonium nitrate fertiliser 33%, 26 kg superphosphate triple 24 kg potassium sulfate 50%. The family of Solanaceae, of which the pepper plant is a plant, loves to increase the concentration of iron elements, boron, calcium, manganese, and zinc. It is placed with irrigation water or sprinkled every 15 days.

Host: What are the most appropriate methods of irrigation for pepper plants?

Presenter: The best form of irrigation for pepper plants is drip irrigation, which provides water in a timely and adequate quantity and has other benefits. It reduces the use of fertilisers and increases the efficiency of irrigation and fertiliser. It also limits water drainage, saves time and effort, and limits the spread of weeds that compete with the plants. Terrestrial moisture plays an essential role in the plant growth stages, especially in the early development stages after the seedlings are transported and during the flowers phase.

Host: When is the correct time to irrigate?

Presenter: The irrigation must be done carefully and carefully from the first day of growing the seedlings. It should be done daily or semi-daily in light and regular irrigations until the seedlings are in good condition. After which, the plants are not watered for several days, depending on the type of soil and the weather conditions, so that the roots can get deeper. The thirst process will continue until the signs of wilting begin to appear. Then the irrigation program will be applied, preferably in small quantities and at close intervals. The irrigation program will be given every two to three days, depending on the weather conditions, the ground moisture, and the plants' age and size. It can be done daily.

In protected houses, the soil is washed after the season's end by giving a quantity of freshwater to melt the salts and dispose of them through good drainage.

Host: What is organic fertilisation, and what are its benefits?

Presenter: Compost is divided into vegetative (plant waste extract 100%) and animal or plant-based only. Differences are only in the proportion of nutrients and sources. One of its benefits is:

- It restores nutrients in the soil.
- It is slowly absorbed and provides food as needed without causing any poisoning of the plant.
- It increases plant resistance and yields a better result than hormones.
- Improves soil physics, improves soils absorption of water and other nutrients, increases soil ventilation, improve roots and decrease roots disease
- Relatively cheap

Host: Do you have any general guidelines for farmers?

Presenter: We always advise using organic fertiliser o maintain the biological balance because breaking it will damage the whole ecosystem.

Animal manure: Soils usually need a variety of fertilisers, which help to complete the growth of plants and trees, prevent damage from insects and worms, and improve the quality of plants. Chemical fertilisers or animal organic fertilisers can be used.

It is advisable to use compost free from chemical compounds, which can harm plants and subsequently affect human health. What we mean by organic fertilisers are fertilisers that can be obtained from natural biological sources and which are produced by bacterial

decomposition of animal wastes. They contribute to providing the soil with the elements necessary for the natural growth of plants without any manufactured additives. This is one of the most important benefits of animal compost.

Host: What are the benefits of animal composting?

Presenter: Farmers prefer to use animal organic fertilisers over other synthetic chemical fertilisers when fertilising and caring for soil. This has several benefits for soil and plants, which limits the losses incurred by industrial fertilisers on plants and the environment:

1- They supply the soil with the necessary elements, such as potassium, phosphorus and nitrogen minerals. These elements prevent slow growth in some plants and affect the plants for a long time.

2- Eliminating moisture within soils; This is because the organic sky contains compounds that are good for the clay soil to dispose of excess water.

3- They promote the proper ventilation of soils and maintain the water level required for plants.

4- They treat many problems, such as microbes, in agricultural soil. This is due to the richness of minerals in animal organic fertilisers, including iron, manganese, copper, zinc and boron. They supply the soil with microorganisms, which can rid most bacteria and fungi that affect plant quality and growth from the soil.

5- Soil is cleared of agricultural pests, thanks to their richness of antioxidants, vitamins and beneficial enzymes that increase soil fertility.

6- They help absorb toxic substances from the soil, such as lead, which is abundant in agricultural soil and which prevents the absorption of plant nutrients.

Host: What are the sources of animal compost?

Presenter: Compost can be obtained from various natural sources, which farmers have and continue to use in fertilising soil and treating pests affecting crops. One of these known sources is:

1- Municipal fertiliser: It is the most famous and most commonly used organic fertiliser of any age, obtained from the dung of livestock, cows, horses and other animals. It has the obvious benefit of improving the quality, quantity and quantity of crops and can nourish the soil well if used in calculated proportions.
2- 2- Poultry fertiliser: Poultry fertiliser has become one of the most common methods used to fertilise soil because of the large number of poultry farms and the ability of these fertilisers to grow plants.

Host: Is composting harmful?

Presenter: Modern undecomposed compost, if used without being fermented, can cause a variety of damage to the soil and plants, including:

1- Spread of grass, nematodes, fungal diseases and bacterial diseases in the soil.

2. The addition of non-decomposing organic substances to the soil leads to oxygen deficiency, root choking, and nitrogen loss.

3- Anaerobic conditions lead to the formation of soil-toxic compounds that affect plant growth.

4- Non-decomposing organic substances increase the number of microbes significantly and increase their activity, leading to their attack and demolition of the soil.

To avoid this, sterilise the fertiliser before using it. This is done by subjecting the compost to direct sun and rainfall. Make sure to decompose the fertiliser before using it to remove all pathogens and make full use of the nutrients found in the manure.

Host: Are there other ways to use organic fertilisers other than prose or with farming?

Presenter: Yes, by liquid compost.

Host: What is the importance of liquid organic fertilisers?

Presenter: One of the fastest ways to restore life to plants and grasses is liquid organic fertiliser. It works instantaneously and continuously, providing the ability to sustain plants so they can grow and spread rapidly. They also help plants heal and recover well.

The use of liquid organic fertilisers is one of the most essential clean alternatives to the nutrients that plants need. They contain some organic acids, such as heomic and folic acids, amino acids and other substances, which are cheap, easy to use, and have little pollution of the environment and agricultural products. Moreover, they improve the soil's physical, chemical and biological characteristics, which are positively reflected in the growth and production of different plants.

They are also easily absorbed by plants and are transmitted quickly for plant use, providing plants with the energy necessary to absorb them, especially at critical stages of their growth.

They also improve physical, chemical, and biological soil characteristics, making the soil more fragile and fragmented and improving soil ventilation, improving root growth and spread and increasing the absorption of soil nutrients. They also increase the soil nutrients' readiness and absorption, some of which contribute to the construction of chlorophyll, such as nitrogen, phosphorus, potassium, iron and others. In addition, it reduces the excess salinity problems that cause plant toxicity and thus burns the roots of the increase.

Host: What is the fermi compost?

Presenter: It's the most potent biofertiliser in the world. Fermi compost, or compost, is the most luxurious organic fertiliser of a plant yet.

Phenotype: The fermi compost is an organic fertiliser in the form of humus, which tends to be black.

Fermi components: The fermi compost consists of:

- worm excreta, which is removed from the worm after it has been fed on organic wastes and is treated and secreted by enzymes, hormones and amino acids within the worm's digestive system.

- organic residue decomposed in the worm environment by the action of fungi, microorganisms, microorganisms or magenta.

- Fermi compost contains billions of bacteria beneficial for plants and soil.

The benefits of Fermi Compost:

The fermi compost has an organic mixture of large and small elements with natural plant hormones such as oxins, enzymes, and plant-specific organic acids. Added to this is a rich variety of microorganisms, including bacteria and fungi, that enrich the soil and revitalise it.

All of this leads to increased fertility of the land; elimination of most pests; increased capacity of the soil to retain water and nutrients; improvement of its properties; the rapid growth of vegetable and fruit seeds in nurseries; increased crop yields of all kinds; easier uptake of nutrients by plants; high root growth and it assists with soil ventilation. In addition, Fermipost supplies the land with billions of useful living organisms and rids the soil of diseases. The FermiPost is characterised by the fact that it contains food and plant enzymes, essential nutrients, natural acids, organic acids and pholetic acid.

Host: What damage can chemical fertilisers do?

Presenter:

1. Disturbs the biological balance, and some excess compounds accumulate in the soil and the plant.

2. Quick-acting, absorbing, and excess amount remain accumulated in soil and plants.

3- Kills soil-dwelling organisms that decompose and dismantle organic substances.

4- Fertilisation with any element will lead to the reduction of another necessary plant element.

5- Soil fertility is weakened over time.

6-Expensive.

Host: General guidelines?

Presenter: We are always advised to use organic to maintain biological balance because disturbing it will damage the entire ecosystem (plant, soil, insects, animal, human).

Chemical fertilisers are recommended only for plant deficiencies and for limited times until the symptoms have passed.