

Ways and dates of fertilizing and watering olive trees

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Olive Fertiliser

Host: Syria is one of the oldest countries in terms of olive cultivation. Today it occupies second place in terms of area under cultivation in the Arab world after Morocco, and sixth place internationally, after Italy, Spain, Greece, Turkey and Morocco. Many of the local olive varieties, which number more than 70, are spread in Syria. One of the most important of these is the olive oil, or what is called by local nomenclature Khali or Kurdish. Why interest in the olive tree?

Presenter: In view of the wide spread of the olive tree in northern Syria in Aleppo and Idlib, and given the deterioration that this tree has suffered over the past ten years from the deterioration in quantitative and qualitative production and the major negligence due to the increase in prices of fertilizers, pesticides and irrigation, as well as the absence of a marketing plan and the low prices of oil and table olives, in addition to the decline in agricultural guidance, which plays a major role in guiding farmers to maintain this blessed tree, guiding them in the most important ways to achieve high production for you at low cost, thus obtaining a good income that will enable you to live with dignity and to challenge all circumstances and challenges to remain steadfast in your land and country.

Therefore, as academics, experts, and agricultural workers, we have had to provide all our expertise to you, our people and farmers through this audio blog, which we will dedicate to speaking about the importance of fertilization and irrigation of olive groves in terms of quantities and appropriate dates. We hope it will be of benefit to you in getting the production of good olive oil in terms of quantity and commercial specifications and in guiding you on how to produce the fruits that are good for making table olives.

Host: What is fertilizer and what are the nutrients or fertilizers that olives need and what is the function of each element?

Presenter: Fertilization is the process of adding nutrients to the soil to compensate for loss. Fertilization greatly increases production, increasing the quantity of oil and yielding fruits with special specifications for the manufacture of table olives. Fertilization also reduces the phenomenon of resistance, meaning that the tree can be tolerated one year or less next year.

We will now tell you about the main nutrients or fertilizers that the olive tree needs:
First: Nitrogen is the most important element in the life of a tree. It is considered an element of growth and construction, and it helps increase green growth and form new packages that will be carried next year.

Second: Phosphorus. The Black Fertilizer, which is the element of power generation and the organization of load and contract, plays a key role in improving production and is the basis for photosynthesis. The tree is very much in need of fruit, so it should be added in suitable quantities because its increase affects the absorption of small elements (such as iron and zinc).

Third: potassium. It is an element of strengthening plant resistance, and its presence in sufficient quantities of soil causes trees to withstand low temperatures, and helps to

increase yields and build roots. The tree needs it especially at the stage when oil is formed in the fruit, and its lack gives a “distorted” form to the fruit.

Host: Do you need to add fertiliser to the olive tree or not?

Presenter: In order to know whether an olive tree needs fertilization, you must not know the proportions and types of nutrients found in the soil and whether they are sufficient for the tree's growth or whether there is a shortage that may affect its production.

To find out this, you need to carry out a soil analysis at soil analysis laboratories to determine the nutrient content. A random sample of the soil in the field is taken at 1 to 2 kilograms and the laboratory will determine the ratios and quantities of nutrients such as nitrogen, potash and phosphorus. The laboratory will determine whether there is a shortage of one of the elements in the analysis results. You can compensate for the deficient elements by adding the fertilizers contained therein, in accordance with the amounts determined by the analyzing laboratory, and in this way, you will avoid adding useless fertilizers that would incur a great cost to you.

But if you add fertilizers at random and the soil is fertile and there is no shortage of nutrients, this will cause damage to your trees, and there will be an imbalance in the soil elements. You should be aware that there is an equation that everyone should know: Adding or increasing a nutrient for soil from the natural ratio will prevent the absorption of the remaining nutrients by the roots of the tree (for example, if you add phosphorus fertilizer and potash to the soil and the soil does not need them), it will prevent and interfere with the absorption of oils and other elements absorbed by the roots of the trees ... This is in addition to the high cost when you buy fertilizers, which are already available in sufficient quantities in the soil.

Host: But what if the farmer can't do an analysis of the soil of the olive field?

Presenter: If there is no soil analysis available for your fields, you can find the lack of nutrients in the soil from signs that appear on the leaves of the olive tree. For example, if there is a lack of the nitrogen element in the soil, you will see a lack of growth of branches and leaves become pale. You will notice the short length of the spur or the parcel that will carry flowers and fruits, which will cause the crop to be deficient. Also, if the resistance is apparent in your fields, it indicates that there is a lack of the azot element.

However, from a practical perspective, you can be helped in deciding to add organic or chemical fertilizers to your trees, based on prepared programs prepared by olive growers. You can find dates and quantities of fertilizers that can be added annually, roughly according to the fertility and properties of the soil and the age of the tree. You can easily use these programs if you cannot conduct a soil analysis because they are currently unavailable.

Question: What types of fertilizers can be used in your fields, what additions and where can they be put?

Your use of fermented animal fertilizers is similar to that of cows, sheep, goats, or chickens, or your use of fermented organic fertilizers such as compost, which is a mixture of animal manure and crop residue. Your use of these fertilizers is more useful than your use of chemical fertilizers in fertilizing olive fields because fermented animal fertilizers maintain soil structure and useful soil micro-organisms that kill if you use chemical fertilizers,

resulting in reduced fertility several years after they are used. Organic fertilizers also maintain soil moisture and increase water retention.

And in any case, when you add those fertilizers, either organic or chemical, you should know that the area where the roots of the olive tree will be absorbed by the added fertilizers is under the shade of the tree or the tree's birthplace, which is where you should put the fertilizer away from the stem so it doesn't burn, and we also advise you to add the fertilizer after pruning and then water the soil either by rainfall in the rain fields or by irrigation in the irrigated fields.

Host: Would you like to talk about fertilization methods and the necessary quantities?

Presenter: The best fertilizer, as we have mentioned, is fermented organic fertilizer or animal dung. The manure is placed in a tunnel that is dug under the tree's shade away from the stem to avoid combustion. The tunnel is 20 cm wide, 20 cm deep, and then buried in dust. The date of fertilization is at the end of November after the olive harvest is completed, and the added amount is between 50 and 150 kg/kg per tree. This depends on the age of the tree and according to the olive irrigation of Ali Umm Marwi, the process is repeated every 3 years. Or 25 kilograms of compost can be placed per tree in early spring.

- You can also add fermented organic fertilizers directly under the tree's birthplace, and then conduct an autumn farming to mix the fertilizer with the soil and receive soil for rainfall.

In the same way, if you want to add chemical fertilizers instead of organic fertilizers to irrigated trees you have to dig a trench under the tree's rectangle 15 cm wide and 15 cm deep where you put 2 -3 kg of oily fertilizer for example urea 46% or NPK balanced compound fertilizer then bury the ditch in the dirt and then give a light wind.

- If chemical fertilizers are added to rain-fed trees, the additive rate is 1- 2 kg Urea-fertilizer 46% or NPK-balanced compound fertilizer. We advise you to avoid adding chemical fertilizer in years of drought and lack of rainfall, because the excess load of fruit in those years is of no use. You will receive a large quantity of olives, but the proportion of oil in those years will be very small.

- You can also add former chemical fertilizers manually sprinkled under the tree's birthplace without having to dig a trench, but you need to carry out a farming procedure to mix the soil with fertilizer 15 cm deep using tractor or small garment. It is recommended that the farming should not exceed 15 cm in depth to preserve the roots. Contrary to what is common among farmers, all that has submerged the soil will become better, and for your information, in Western countries they never succeed in their fields, but only use goats to get rid of the grass.

Host: How do you use melted paper fertilizers?

Presenter: You can sprinkle olive trees with melted paper fertilizers by adding them to the sprinkler tank during the process of chemical control of olive diseases and insects, where you can add a balanced compound paper fertilizer (NPK), high potash or high-pituitary, or small-scale fertilizer elements, which are added according to the stage of growth, at a rate of 1-2 liters in a reservoir of 1000 liters, using this method of mixing any of the same tank insecticide with paper fertilizer to reduce the wages and expenses of spraying tanks.

Host: What are the times when the fertilizer is added to the olive fields?

Presenter: Organic or chemical fertilizers are to be added to irrigated trees in three batches in the autumn after harvesting the crop and in the beginning of spring, when the formation of vegetation starts and in the summer with the irrigation process. In the case of rain trees, the quantity is added only in the autumn and the beginning of spring. Dissolved paper fertilizers are added as needed and according to stage of development and are usually added with the use of chemical control of olive diseases and insects as mentioned earlier.

Host: What would you like to say and instruct fellow farmers about fertilizing their fields?

Presenter: Finally, the fertilization of the olive tree should be summarized as follows: It is not necessary to fertilize an olive tree if it does not show signs of deficiency in tree growth or in crop quantity. You must determine this by analyzing the soil. If you want to fertilize an olive tree, you must add organic fertilizer in the autumn after harvesting the crop every two years for four years. It can also be said that cow dung is added every year and used in the thirsty red soils, but in areas with low rainfall do not add sheep and goat dung.

- In olive fields with yellow or white soil that conserve moisture or irrigated fields, goat, sheep, or chicken dung can be used every two to four years, with a large proportion of fermented oils.

- If you wish to add chemical fertilizers to the olive fields, please add at the end of autumn the slow-soluble fertilizers, such as urea and NPK, or add the fast-melting fertilizers at the end of winter and the beginning of spring, such as ammonium nitrate, which are not currently available.

- Dear olive growers, we hope that you will benefit from these instructions and apply them when you wish to fertilize your fields, wishing you a good season and a decent life.

Second: Olive irrigation

Host: The olive sector in northern Syria is one of the main sources of income for many agricultural families. The olive crop is a strategic crop and an important element of food security. What do you think is the current irrigation situation for olive trees?

Presenter: Over 80% of the olives in Aleppo and Idlib in Ali depend mainly on rainfall, but the rainfall rates fluctuate in those areas and their distribution is uneven and erratic. The fall stops early when the olives are in the stage of flowers and knots, and the precipitation is delayed when the crop is in the stage of maturity and in need of rain, which made the rain-willed trees in Syria dry and the size of the fruit is small, especially during the years of pregnancy, and the phenomenon of resistance has spread there.

Therefore, it is necessary to consider securing irrigation or a minimum amount of water, especially at the stage of forming a meat, and this is known as supplementary irrigation, which in its application depends on balancing the costs of irrigation with the additional financial return that will be achieved through increasing the production of oil and table olives, when implementing the supplementary irrigation program.

Here we must stand by many questions from the olive grower brothers!

- When I squeezed a 100-kilogram olive bag I got 16 kilograms of oil, while the same quantity was being squeezed but got 25 kilograms of oil.

- Olive oil sold in the Al-Hal market for three pounds, while other farmers sold for 7 pounds.
- The pregnancy was good in my field last year, and I sold oil and olives from it but this year my field was not carried and I only got the supplies, compared to the field next door which was regularly carried annually.
- My crop and black fruit matured early before the rain came down. I squeezed all my crops and could not sell table olives because of the small fruits. While my neighbor has large green fruits, most of which were sold at high prices in the Al-Hal market.
- The mill owner complained and complained about the difficulty of sorting the oil because of the red color of the olive dough.
- I sold a five-dunam olive plot and bought three-dunam land, the soil of which was white, which preserved moisture and produced much better than the land I sold with red soil, which cracked in summer and did not preserve moisture.

All these questions that some of you are asking are the result of drought, lack of rainfall and late rainfall in the rain-fed fields, while the farmer who irrigated his field did not have those problems, so we must use the supplementary irrigation program in lands where water sources are available, taking into consideration the comparison of the cost of irrigation with the increase that we will get from the production when irrigation is made.

Host: So what's my supplementary opinion?

Presenter: Supplementary irrigation: It is the addition of sufficient quantities of water to the "wilderness" trees and in stages. This addition is to be done at critical times of the fruit growth stages, after the hardening of the olive nucleus, and at a time when the meat of the fruit will be during the summer months. As mentioned, you must compare the cost of irrigation water with the additional quantity of oil and fruit you will receive when conducting supplementary irrigation.

Host: What benefit will a farmer bring when he irrigates his field?

Presenter: When you water your fields will reduce the phenomenon of the exchange of pregnancy or treatment, because this irrigation process will be permanently green parcels, these parcels will carry fruits in the coming year. It is well known that the formation of flowers and fruits took place in last year's parcels, and not on modern parcels. Therefore, you need to provide irrigation water to keep the vegetable parcels or the reasons for their formation annually.

B -Your view of olive trees will increase the proportion of fully formed flowers and the increase in their complexes, and you will thus receive abundant production.

c. When you perform early irrigation in the year of heavy pregnancy, this will reduce the load, because irrigation will encourage the necessary vegetable growth for the following year. When the pregnancy is moderate and annually, you will achieve greater benefit.

d. When you see your fields, you will receive a larger quantity of oil and an excellent quality of fruit suitable for manufacturing table olives. You will start harvesting early, and you do not have to wait for rain to harvest your crop.

e. Irrigated olive plantations will grow and enter production in a few years, unlike rain plantations, which will take many years to enter production.

Question: But for the benefits of irrigation, what are the dates and how many irrigation times do olive trees have to be watered?

Olive tree irrigation dates and the number of irrigation times vary from field to field:

- if your field soil is clay, yellow, or white, they all retain moisture and therefore the number of irrigation times less if your field is sand or deep red that splits in summer then it needs large amounts of irrigation and more irrigation.
- Also, if the trees in your field are too old, you will need more water and a closer summer irrigation.
- Also the higher the summer temperatures, the closer the irrigation periods will be and you will need more irrigation.
- your irrigation system is also important in determining the amounts and number of times your field needs irrigation. Drip irrigation provides water and costs.

Host: So when do we get on the irrigation date? When do we delay the irrigation? Will olives be watered in the spring?

Presenter: Yes, in the years when the rains stop early and there is a drought in winter, the first irrigation must be given in mid-March to provide sufficient moisture for the period of flowers and contracts, because the drought and thirst at that stage will lead to the failure of the contract and the fall of flowers. This is what happened in 2014, when the annual precipitation rate was 152 mm. I remember at that time that olive trees were blossomed, but as a result of the drought all of them fell, and no contract for the fruits was made. It was a special year in terms of the departure of 80% of olive trees from production.

If spring rains are sufficient and late and the rainy season is good, we recommend the first irrigation in mid-July after the olive core is withered,

The second, in the first week of August, two weeks after the first, started the third, in mid-August, while the fourth, in early September. In the event of late rains, the fifth, in mid-September, is due. The sixth, in early October, is due to be delivered. We stop irrigation completely 20 days before harvest.

Host: What happens if we are early in the irrigation process and the rains are good?

Presenter: If the rains are good and the soil moisture is good in the spring and you do the irrigation process during the period of the flowers, it will lead to the failure of the flower nodes and their fall and a marked increase in the length of the spines or empty vegetable parcels of the fruits, and it can be said here that increasing the irrigation is hurting and not benefiting your trees and you will lose a large part of your crop.

Host: What are the irrigation methods used to irrigate olive fields and which ones generate good returns and income?

Presenter: There is no doubt that some of you have a well that has worn out clothes or surface but suffers from high fuel prices or does not have the capacity to install solar energy. Others buy water tanks to water their field twice and stop. They cannot continue irrigation until the end because of the high cost of water tanks. Therefore, in any case, you can use a drip irrigation system that provides you with less water and saves the cost of opening the basins when you run.

In the drip irrigation system, the olive field is given two irrigations a week over the summer, 12 hours a day, and each dunum requires 500 cubic meters, which provides half the water in

the case of running irrigation, and drip irrigation can be used if your fields are steep or uneven.

Host: What are the pros and cons of irrigation in the basins?

Presenter: Some farmers see their fields as running through basins that have the capacity to install the power-unit system, as diesel pumps cannot be used because of the high price of diesel. Irrigation in this way is considered a waste of groundwater and consumption of large quantities of water, as the olive dunam consumes more than 1000 cubic meters. It is required that the land be heated at a regular level and the field be opened up to open long and wide dunes, so that large pools or tins of water can be built in them. This method conducts water and moisture to all the soil of the field and thus takes all the trees sufficient for water, so the number of irrigations and the spacing between the villages can be reduced.

Host: Do you recommend irrigating olive fields by irrigation?

Presenter: We recommend your use of sprinkler irrigation on the deep, light, or red, lands that form summer and that lose much irrigation water if irrigated with basins or grains, which are useful if your fields are leaning uneven. Irrigation is carried out in this way in the form of a loincloth, which is attached to a pumping device 50-60 cm high above the soil. This method allows water to reach the stem and the leaves where the summer temperatures are high, which helps the activity of olive-tuberculosis and other fungal diseases, although it provides water compared with running irrigation.

Host: What about the tank irrigation with the opening of basins or bridges under the tree Is it useful?

Presenter: Some farmers are digging a basin or two underneath each tree, and here we need wages for workers to open the basins, hoses to carry water from one tree to another, or to buy water in tanks. In this way, we need a lot of irrigation, since each tree requires three to five barrels per village, depending on the type of soil and the size of the tree. We mean, in a barrel here, the capacity of 200 liters, and the duration between irrigation and other times is one week at most, and therefore a larger number of reefs. Perhaps the additional production of oil or fruit will not cover the cost of irrigation if water is purchased and transported, and thus there is no economic feasibility of irrigation in this way. In any case, and in all the irrigation methods that we mentioned, I advise you to perform irrigation in the morning or evening hours and to avoid noon irrigation at high temperatures. I also advise you to add organic fertilizer or animal dung during irrigation, which will double the current season's production and ensure good production for the next season, thus eliminating the phenomenon of resistance.

Host: One final word: 'What do you want to conclude ?'

Presenter: I want to tell you my dear olive growers, that the blessed olive tree is an old tree of origin, when you want to improve your tree production, let that be, but thoughtfully, take advantage of the instructions given to you along with your practical experience.

When you decide to irrigate, fertilize, and control your trees, don't do this randomly. When you over-serve this tree with irrigation, fertilizers, and fighting, your production will increase for a year or years, but soon that rain-fed tree will recede, showing diseases and ills. No doubt you hear or face serious diseases resulting from overservice, such as olive urine and olive-tuberculosis, which spread like cancer in some fields or regions, and for which no effective treatment has been shown so far, instead of salinating the soil and defects in the composition of the nutrients and mechanics of the soil Make your motto the best of the middle things. The olive tree doesn't like the excess.

Peace be upon you