

## How do you look after the garden?



The garden has friends and enemies. A good horticulturist needs to get to know them in order to take proper care of his vegetables.

## Taking care of your garden.

- 1- Watering.
- 2- Weed control.
- 3- Cultivating
- 4- Pest control
- 5- Disease control



# 1-Watering

- For seeds to germinate....
- For plants to grow and produce well....

**You need**

Well watered soil.

In rainy areas you only need to water when the weather is dry.

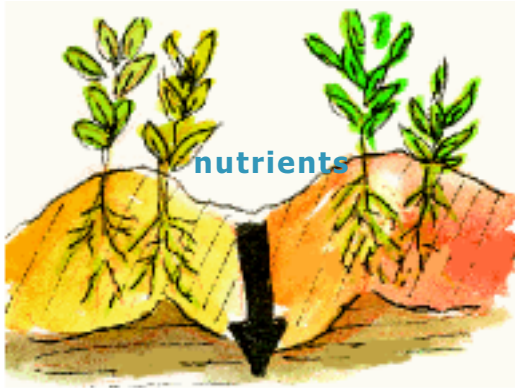
In dry areas (arid and semi arid) you should water frequently throughout the year.



It is important to water only as much as necessary, not more or less.

### Caution!

**If you water too much:** The excess water will take nutrients deeper and out of reach of the roots. Besides that, too much water makes it easier for diseases to develop.



**If you do not water enough:** The roots grow only near the surface and cannot take advantage of the soil nutrients. The plants will be smaller and produce less.



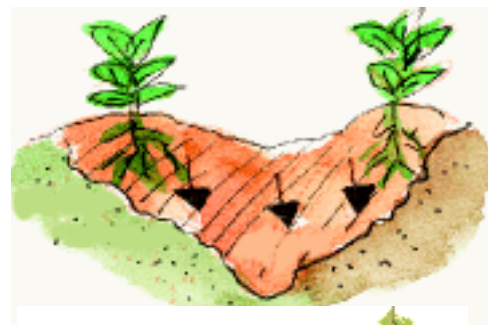
# How much water should I use and when should I water?

How much and when depends on:

**1- The weather:** If it is hot and dry you need to water more often.



**2- The type of soil:** If the soil is sandy and loose you need to water more often, with less water.



**3- The type of vegetable to be watered:** There are vegetables with deep roots and others with shallow roots. The deeper the root is the less often you need water, but with more water.





## Test 18

Without looking at the previous page circle the correct word.

1- If the weather is cool and wet you need to water – **more** – **less** – often.



2- If the soil is heavy (clayey) you need to water – **more** – **less** – and with – **more** – **less** – water each time.



3- Vegetables with short roots need – **more** – **less** – water and more often.

## You should watch the garden carefully to know when and how much to water.

### You can do the following test:

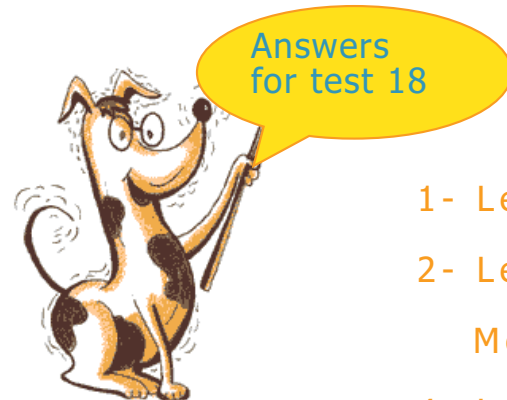
Two days after watering, make a hole near the plant.

The moisture should be below the plant's roots.

Water should not be accumulated at that depth.

### Important!

If the plant's leaves look droopy and lifeless you should water them immediately, but it is better to prevent this from happening . The plants should always look firm.



- 1- Less
- 2- Less
- More
- 4- Less

## Irrigation watering

Irrigation watering is easy but you need to take the following precautions:

- The furrows should have very little slope, so that the water does not carry away the soil or seeds.
- The water should run slowly without becoming stagnant or breaking the furrow.
- The water should not directly touch the plant.
- It is better to water in the mornings.
- While watering, watch the water's pathway and guide it with a shovel.





# Sprinkler watering.

You can water your seedlings and small gardens with sprinklers. This is the most effective method when there is a steep slope and when there is not much water.

## With what do I water?

You can use:

- A watering can
- A hose
- Perforated cans

## How do I water?

Water with a fine mist.

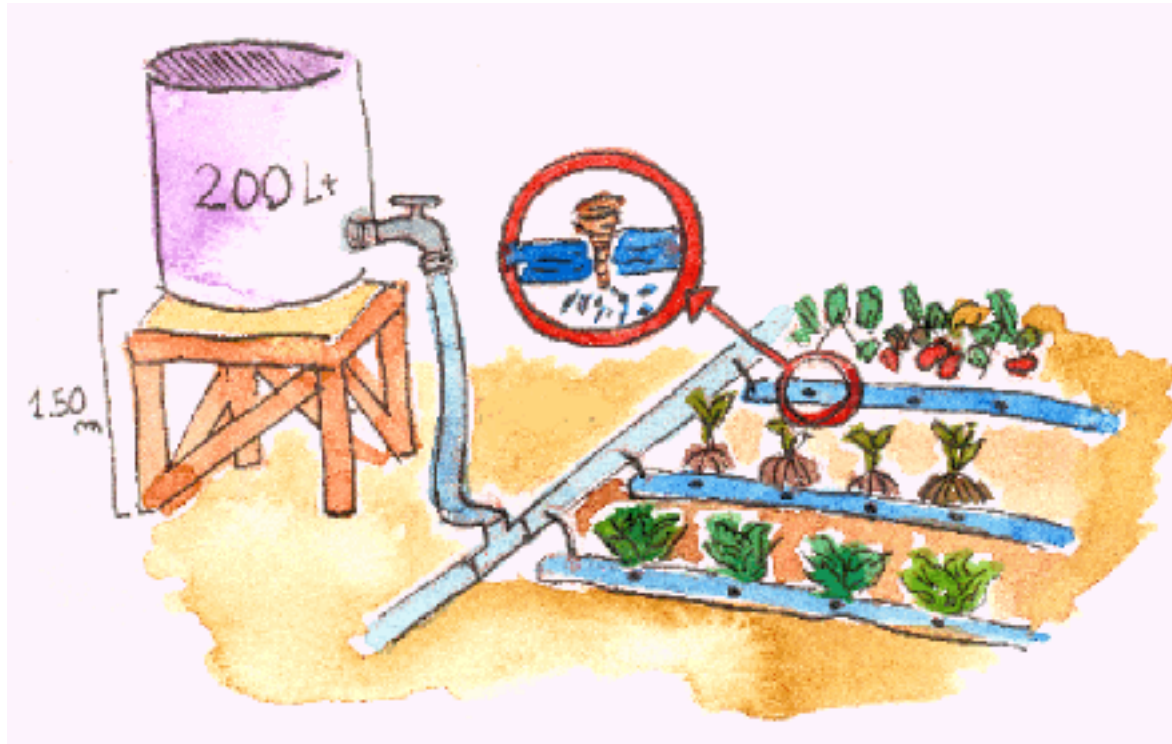
When the seeds are just planted you should avoid heavy gushes of water because they can damage the seedlings by uncovering the seed.



## Watering with a drip sistem.

You can build a **mini drip watering** system with a used 200 liter tank, a tap and some PVC pipes.

The drip emitters can be wood screws.



## Caution!

When you water with sprinklers you wet all of the foliage which may cause diseases to appear. This is why it is best to water in the morning so that the air and sun can evaporate excess water during the day.



## Test 19

Connect the following with lines.

If you water less...

You have to water more often.

If the plants are limp and wilted...

It is more effective to water with sprinklers...

If the weather is hot and dry....

The roots grow on the surface.

If the garden has a steep slope.

You have to water immediately.

When plants that you have not planted and do not want, grow in your garden, they are: **weeds**.

Weeds take away light, nutrients and water from the plants in the garden.



## 2- Weed control



Answers  
for test 19

If you water less...

You have to water more often.

If the plants are limp and wilted...

It is more effective to water with sprinklers...

If the weather is hot and dry...

The roots grow on the surface.

If the garden has a steep slope.

You have to water immediately.

Weeds cause more damage when the vegetables are small and unable to compete for water and light.

You need to control weeds from the very beginning by doing the following:

- **Tilling the soil.**
- **Covering the soil with mulch.**
- **Being careful not to infect the garden with seeds of weeds during the watering or from weeds near the garden.**
- **Prevention control.**



## Soil tilling as a weed control method

**Tilling the soil to remove weeds consists of:**

- 1- Stirring up the soil between the furrows with a rake.
- 2- Cleaning near the plants with a weeding hoe.

This should be done only on the surface to avoid damaging the roots.

This job is only done when the plants are still small.



## Mulch covering as a weed control.



You can cover the soil between the furrows with any of these materials.

- **Organic compost**
- **Black plastic**
- **Dried grass**
- **Newspaper**
- **Dry leaves**

### What are the advantages?

- Weeds cannot grow because of the lack of light.
- The soil remains moist.
- The soil does not over heat during the day or get too cool during the night.
- The plant's leaves and fruit stay cleaner since mud does not splash.



The best covering is organic fertilizer or compost. You apply a 5 to 10 cm. thick layer between the furrows and around the plants.

## Weed prevention control.

### What is prevention control?

It is the measures that should be taken to prevent an excessive increase in the growth of weeds on the soil.



### What are they?

- Using good quality seeds that are not mixed with weed seeds.
- Using organic compost.
- Plant in crop rotation.
- If necessary, use something like nylon stockings to filter out weed seeds from water that is used for watering.
- Keeping the garden clean of weeds.
- Not using weeds with seeds when you make the organic compost.



## 3- Cultivating.

### What is cultivating?

It is bringing up the soil close to the base of the plant.

### What tool is used?

The hoe.

### When do you do it?

On most plants it is done only once in the season, when the plants are fully grown and strong.





## The advantages of cultivating:

- It helps control weeds
- It improves the soil aeration.
- Preserves moisture.
- It helps to hold up the plants, making them more resistant to the wind and their own weight.
- It minimizes the attack of diseases.

## 4- Pest control.

Pests are small insects that reproduce quickly causing serious damage to crops because they feed off the plants.

In many cases the plants cannot resist the attacks and die.



Would it be worth it to take so much care of your garden if you did not control the pests that can destroy them as well?





**“Do not just follow the advice of friends or neighbors. Remember that chemical products are dangerous”.**

**It is not good to totally eliminate all the pests.**

You need to reach a “Balance”. The number of insects that remain in the garden after control should not be too high so that they do not cause damage to the plants.

**Preventive Control:**

There are some things you can do to control pests before they become a problem.

Avoid the use of chemical insecticides which are very dangerous to your health.

Consult with the local technician if the use of chemical products is inevitable, and select non-toxic products.

**Beneficial insects:**

Not all insects feed off plants, some feed off other insects so they help control infestations.

**Harmful insects or pests:**

Harmful insects almost always feed off of plants. But be careful, it is not always easy to see where and how they feed.



**Recognize some beneficial insects.**



**Recognize some harmful pests.**

## Preventive pest control.

There are many things that can be done to “**Avoid or Prevent**” the destruction of plants by pests:



- **Crop rotation planting:** remember that you should change the kind of vegetables you plant every year, as we saw in chapter 2.



- **Remove all vegetable scraps:** Insects may stay there multiplying. Use vegetable scraps to make organic compost.

- **Use Interplanting:** it will be more difficult for insects to spread if the plants are separated by other vegetables.



- **Choose vegetables that are more resistant:** some insects do not cause too much damage on some vegetables.

For example: Swiss chard, leeks, lettuce, onion, parsley, peas, spinach and others.



- **Take good care of the garden:** if the plants are big and strong the insects will not cause so much damage.



## Pest control methods.

**Traps:** To catch some pests better you can use traps.

- **For slugs:** Place boards on the soil between garden plants. During the day the slugs will hide under them where you can trap them easily.



- **For white flies, aphids and thrips:** Paint the inside of a not too deep can a bright yellow. Half-fill the can with water then hang it on a pole. The insects will be attracted by the color and will drown upon falling in the water.





- **Barriers:** You can prevent grubs from damaging small plants by placing rings made of cardboard around them.



When the plants grow and bypass the ring they are strong enough to resist the grub attack.

- **Sprays:** There are some substances that do not damage plants or people yet help control infestations.

**Example:** Soap solution, to control aphids, spider mites and white flies. Mix 2 spoonfuls of detergent or liquid soap in 4 liters of water.

Use this liquid to spray plants completely.





- **Collection:** The whole family can trap insects by hand. Cutworms, weevils, chinch bugs, beetles and many others are easy to trap because they are large.

### Test 20

Circle the correct word:

- 1- It is better to plant vegetables that are more – **resistant** – **common** – to pests.
- 2- If you use chemical products you have to – **consult** – **avoid** – the local technician.
- 3- There are insects that help – **increase** – **control** – pests.

## 5- Disease control.

There are many diseases that **affect plants** damaging crops and stored vegetables.

### When is a plant sick?

Sick plants look:

- Yellow or other unnatural colors.
- Faded or wilted.
- Weak
- With rotten fruit.



Healthy plants

Sick plants



Answers  
for test 20

- 1- Resistant
- 2- consult
- 3- control



### **Caution!**

**When a plant is sick you cannot heal it.**

You must prevent the disease from spreading and affecting other healthy plants in the garden.

**Prevention control** is very important.

You need to take the necessary precautions. There should not be conditions which are favorable for diseases in the garden.

## With prevention control diseases will not be a problem.

Some measures are:



**Crop rotation:** Do not plant vegetables from the same family in the same spot. Diseases can remain in the soil from one year to the next. (Consult Chapter 2)



**Resistant varieties:** In many vegetables there are varieties resistant to one or more diseases. If necessary consult the local technician to find out if the vegetable varieties you want to use are resistant or not.



**Do not leave vegetable scraps lying around:** Always use vegetable scraps to prepare organic compost. If you leave them on the ground they can contaminate next season's crops.



**Insect control:** Insects can also transmit diseases like viruses.



**Weed control:** Weeds help to create a humid environment that encourages the development of diseases.



**Be careful that water does not stagnate:** Water must not stagnate in the furrows. If this happens you should make exit channels.

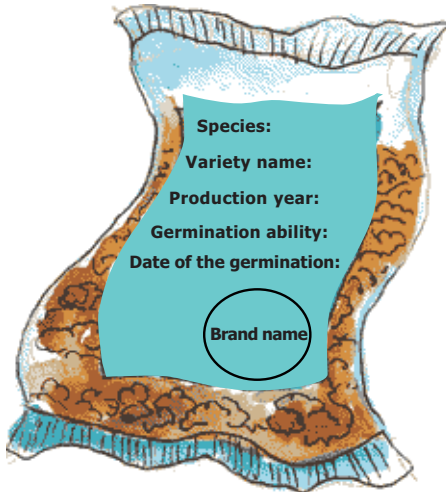


**Do not plant too densely:** Plants should not be too close to each other (dense). This encourages humidity and disease development.



**Protect the fruit:** You can protect fruits that bend towards the ground because of their weight with guide stakes or trellises.

For example: tomatoes, melons, pumpkin and watermelon.



**Using good quality seeds:** Seeds can also bring diseases that appear afterwards in the garden.

**Planting in the right season:** Each vegetable should be grown at the correct time. Consult the chart at the end of the Manual.

**Caution!**

There are chemical products to prevent diseases but it is better not to use them because the majority are dangerous to your health.

Consult your local technician, if absolutely necessary, about non-toxic products.





In this chapter we have seen:

- 1- Watering.
- 2- Weed control.
- 3- Cultivating.
- 4- Pest control.
- 5- Disease control.

### Test 21

Place "T" if the sentence is true and an "F" if it is false.

- 1- It is important to add the necessary water to the soil.
- 2- Sandy and loose soils need to be watered less frequently.
- 3- Deep rooted vegetables need more water at every watering.
- 4- If you use an irrigation watering system, the furrows should have a slight slope.
- 5- Decomposed manure has more weed seeds.
- 6- Weeds take away nutrients, water and light from garden vegetables.
- 7- Sick plants can be healed.
- 8- Yellowing and wilting may be a symptom of a disease.

**If all your answers were correct you can go up another step. Congratulations!**

**Answers for test 21**

- 1- T
- 2- F
- 3- T
- 4- T
- 5- F
- 6- T
- 7- F
- 8- T

If two or more of your answers were incorrect you should review the material in Chapter 6.

- Expert horticulturists**
- Chapter 7**
- Chapter 6**
- Chapter 5**
- Chapter 4**
- Chapter 3**
- Chapter 2**
- Chapter 1**

