Setting up Irrigation

Planification, choix du matériel de plomberie, montage des cannes d'aspersion et entretien pour une couverture d'eau homogène et douce.



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40 Congratulations ! You've just learned how to create yo

PARTIE 1 SUR 40

1

Nous allons vous montrer comment mettre en place un système d'irrigation par aspersion dans une entre...



Nous allons vous montrer comment mettre en place un système d'irrigation par aspersion dans une entreprise maraîchère bio intensive en sol

We are going to show you how to set up a sprinkler irrigation system in an intensive organic market

vivant.

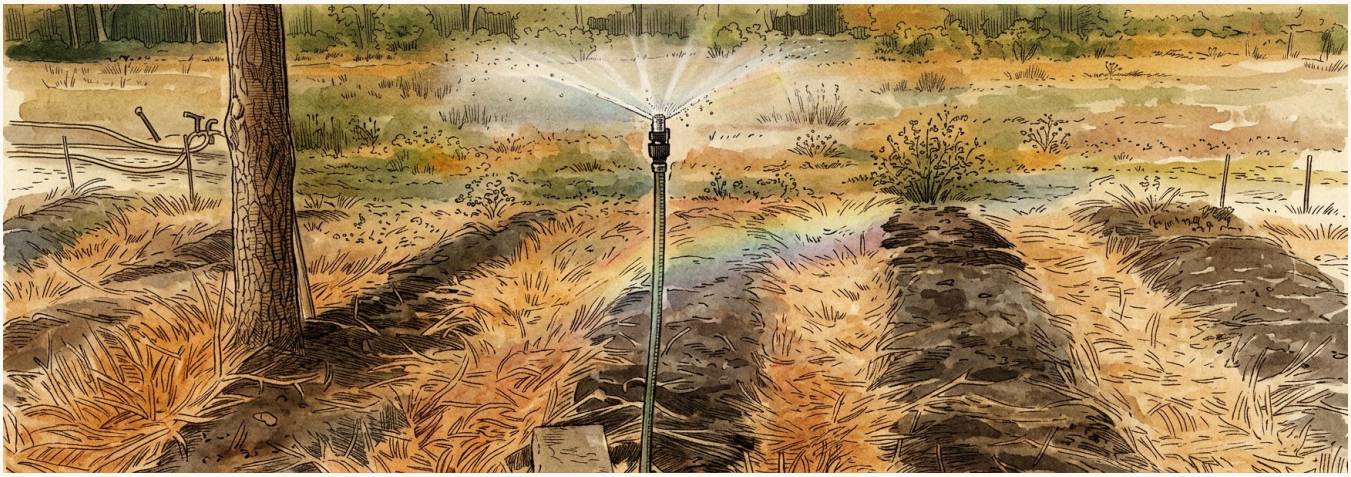
gardening business in living soil.

Irrigation by sprinkling, what is it ?



Irrigation by sprinkling, what is it ?

Water is put under pressure, then diffused into fine droplets imitating natural rain. This allows for a homogeneous distribution of water creating a microclimate. This semi-automatic system allows for less manual work and saves time.



The setup is done in 5 steps.

If all the equipment is gathered, it is a job that takes no more than half a day for two people for a plot of 100 m2.



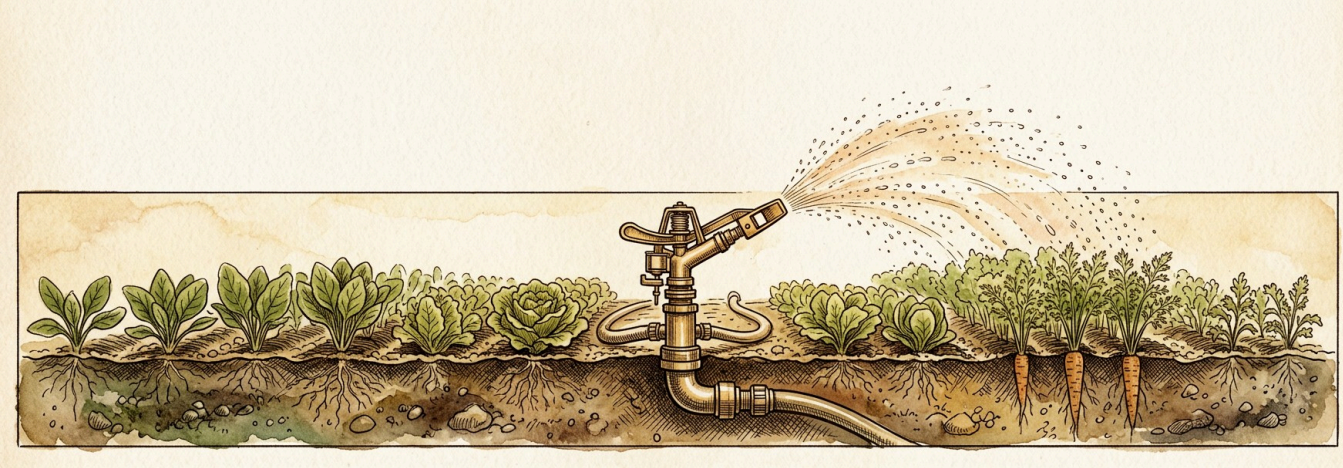
CONSTITUTION OF A PLOT WITH A SPRINKLER

SYSTEM

PARTIE 5 SUR 40

5

You need a water source, for example a well, a borehole, a water tower, a river or a stream..



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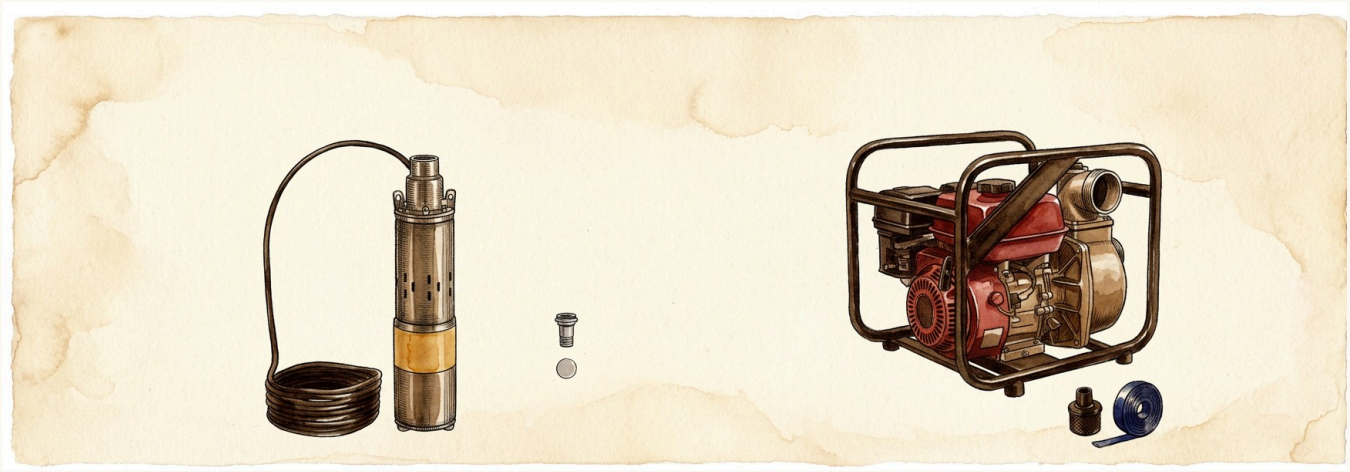
6

You also need a pumping station: a thermal or solar pump to extract the water..



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Main line

Sprinkler

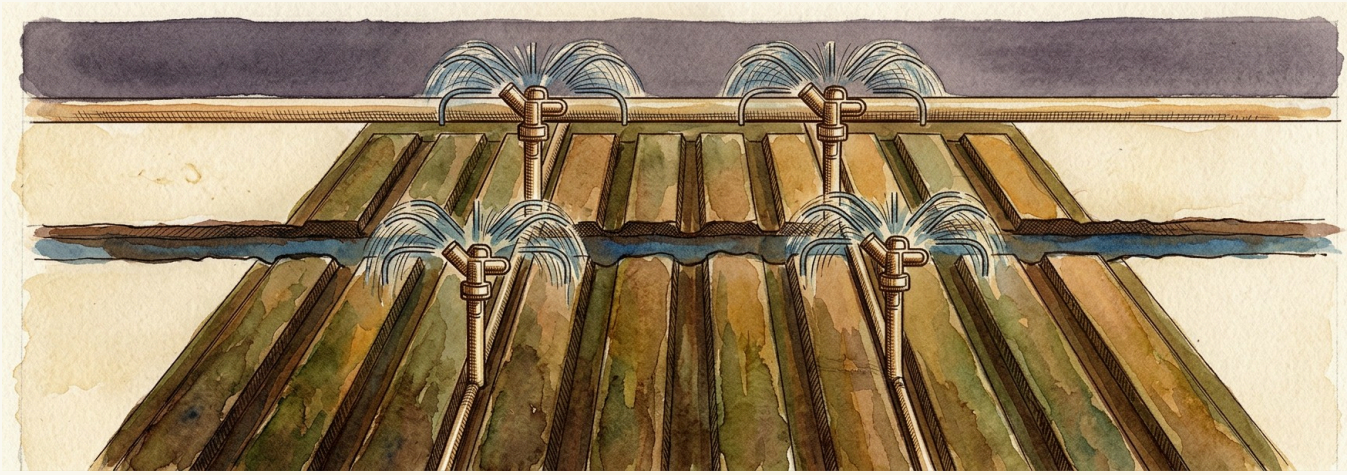
Ramps

Then from the water distribution system with :

A main line

2 secondary lines which are also called "sprinkler ramp"

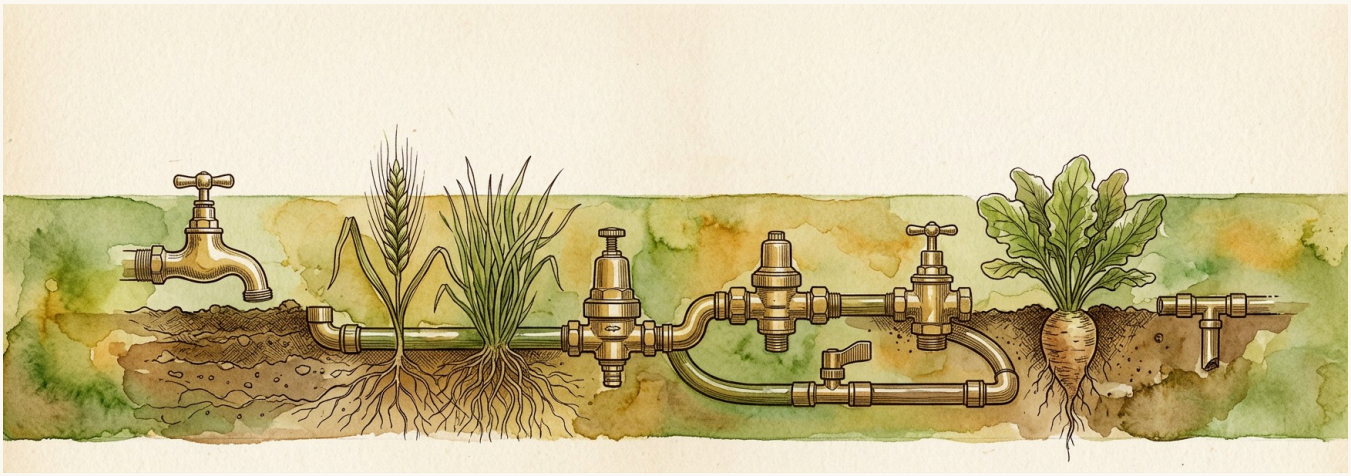
4 sprinkler hoses



THE PLUMBING MATERIAL NECESSARY

THE PLUMBING MATERIAL NECESSARY

4x



4x

2x

1x

For the assembly of the main and secondary lines, you need the following materials :

A 40 mm pipe: the length depends on the distance from the water source.

A 32 mm pipe with a length of 20 m

2 connection tees 40/32

4 valves of 32

1 valve of 40

10

PARTIE 10 SUR 40

4x



4x

4x

4x

4x

For the assembly of the spray rods, you need the following materials :

4 connection tees 32/25

4 PER pipes of 1 m each

4 male fittings 25/15

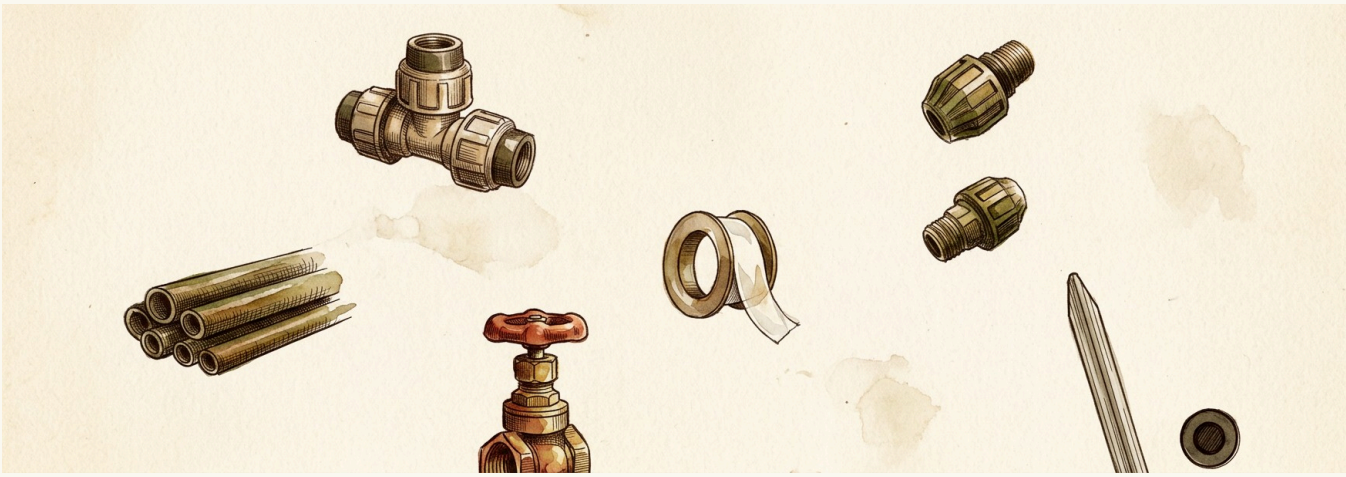
4 female valves 15 mm

4 stakes of 1 m each

Teflon sealing

4x

You will need the following tools:



You will need the following tools:

Metal saw

Knife

Liquid soap to facilitate the fitting of the elements

Measuring tape

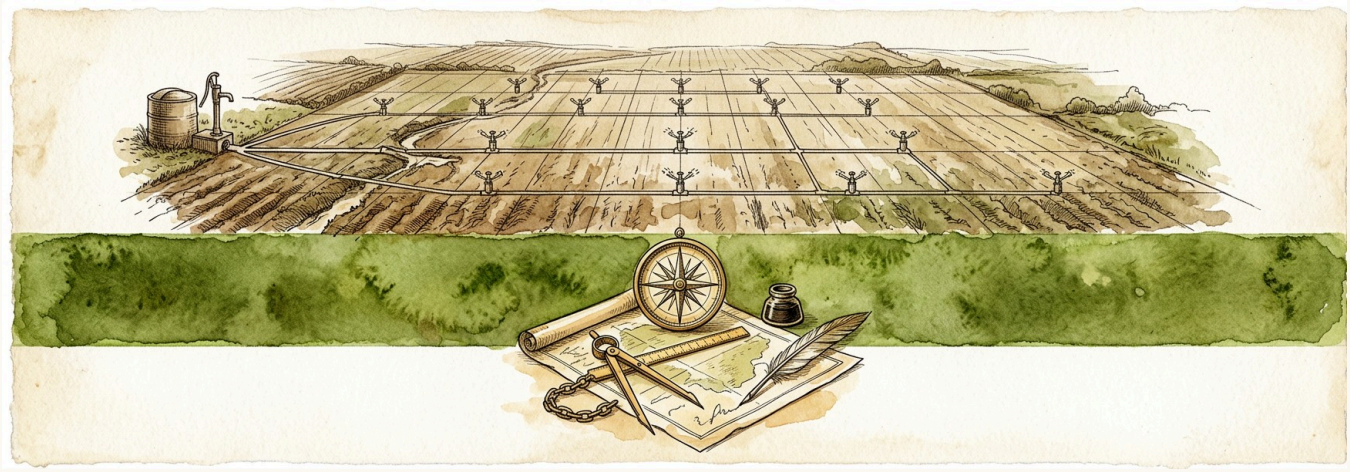
String



INSTALLATION OF THE SPRINKLER SYSTEM ON A 100M2 PLOT

STEP 1 : PLAN

10m



10m

10m

To ensure a homogeneous spraying, plan the arrangement of the sprinklers according to their ranges. The range of the sprinklers is from 3 to 6 m in diameter depending on the pressure.

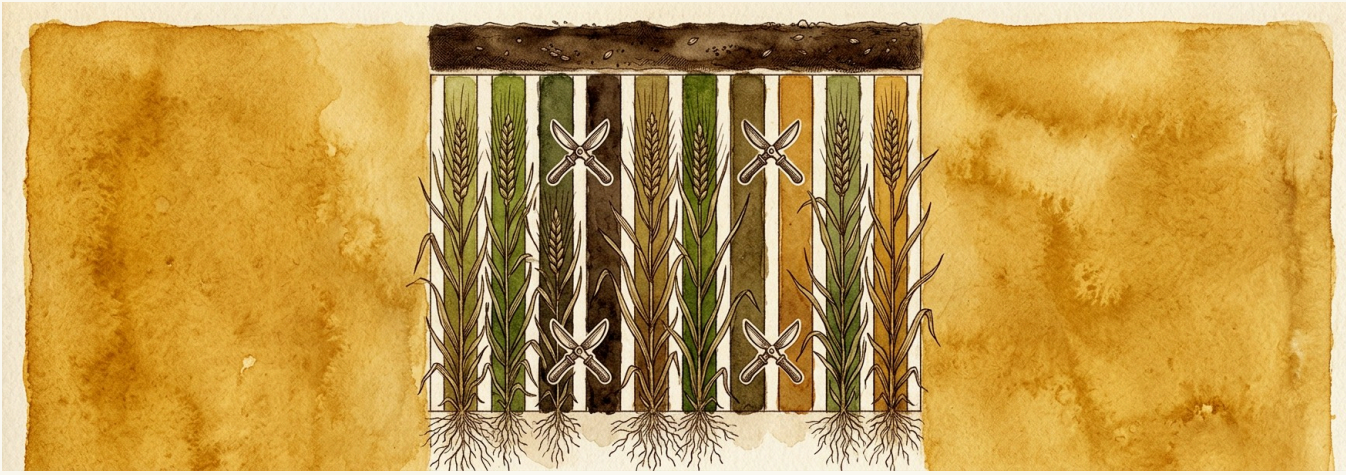
10m



10m

10m

For a plot of 100 m2, that is 10 m x 10 m, you will install 4 sprinklers.



INSTALLATION OF THE SPRINKLER SYSTEM ON A 100M2 PLOT

STEP 2 : INSTALL THE MAIN PIPE AND THE

SECONDARY PIPES



Main line

Place the 40 mm pipe from the main line to the edge of the plot.



Main line

1x

Then install the 40 mm valve at the end of the pipe for maintenance and an extension of the irrigation system if needed.

To facilitate the fittings of pipes to the valves and tees, always put one to two drops of soap on the joints.

1



1

2 3 4 5

6 7

Rampes

For the secondary lines, place a 32 mm pipe in the 4th footbridge.

Then place the second 32 mm pipe in the 8th footbridge.

8

9 10 11



Cut the main pipe using a knife or a hacksaw at the level of the 4th and 8th footbridges where the secondary pipes

are installed.

2X



2X

Install the 2 tees of 40/32 on the main pipe of 40 mm.

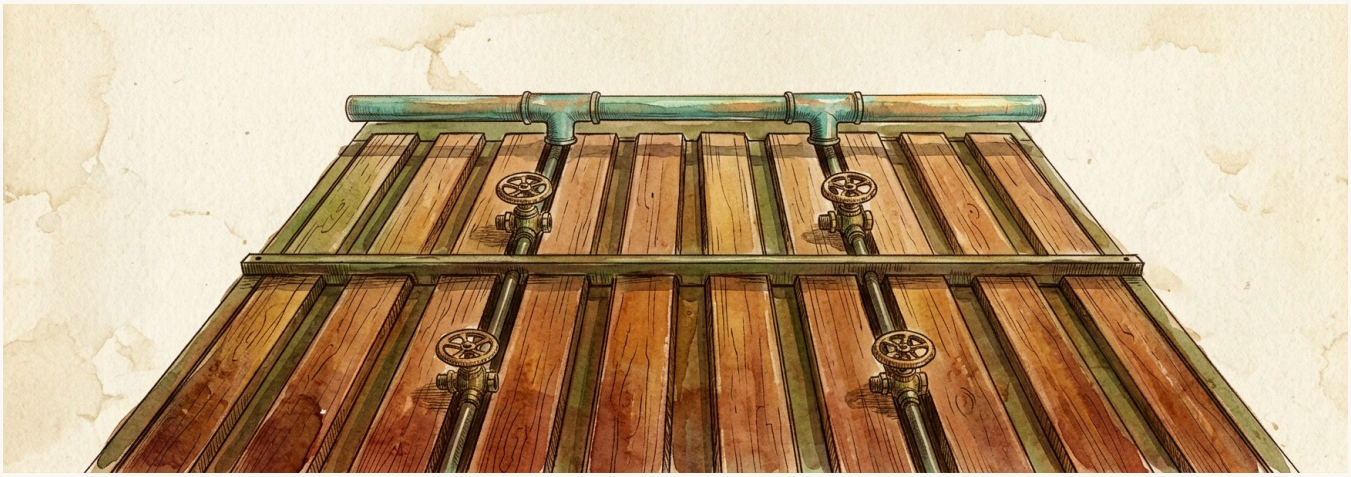
Then connect the secondary pipes of 32 mm.

4x



4x

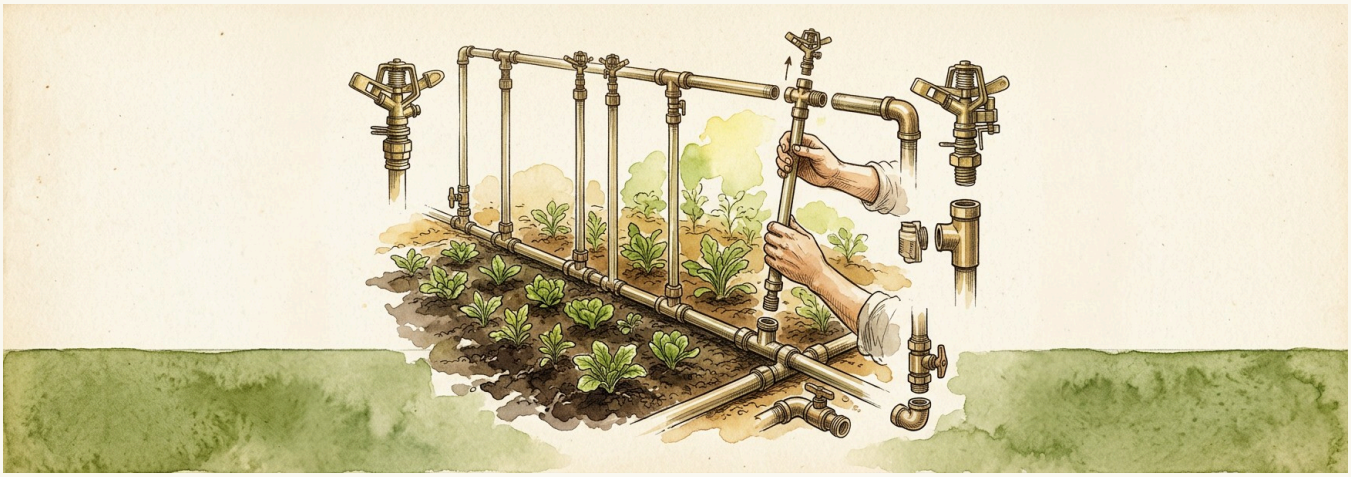
Install the 4 valves of 32 mm at the ends and at the beginnings of the secondary lines. This will facilitate maintenance and an extension of the irrigation system.



INSTALLATION OF THE SPRINKLER SYSTEM ON A 100M2 PLOT

STEP 3 : INSTALLING THE SPRAY RODS

3m



3m

4m

3m

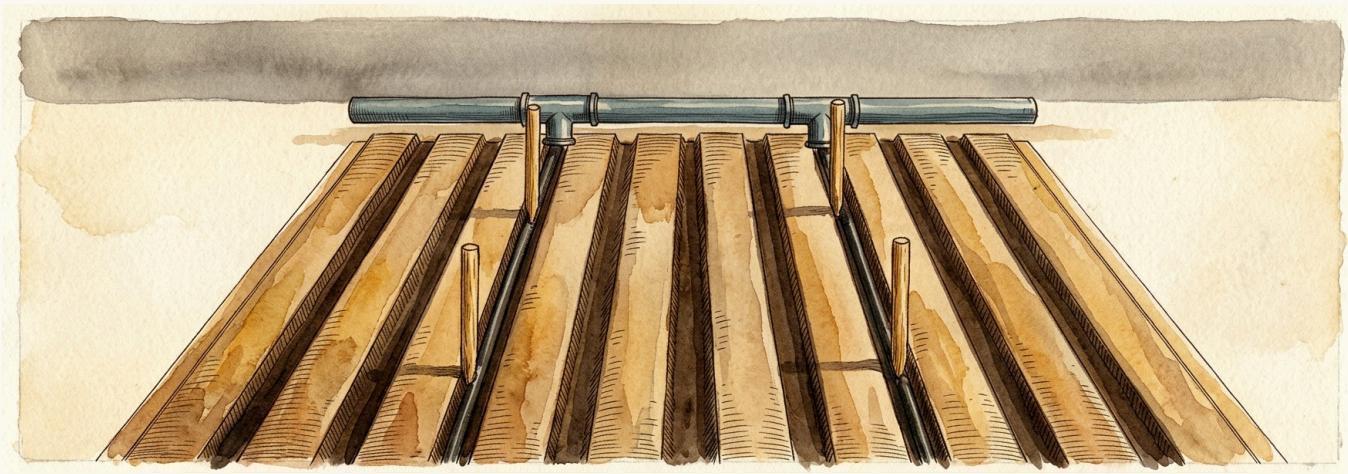
4x

Measure 3 m starting from the beginning of the board to place the first stabilization stake.

Then measure 4 m from the first stake to place the second stake.

Repeat these operations on the second secondary line.

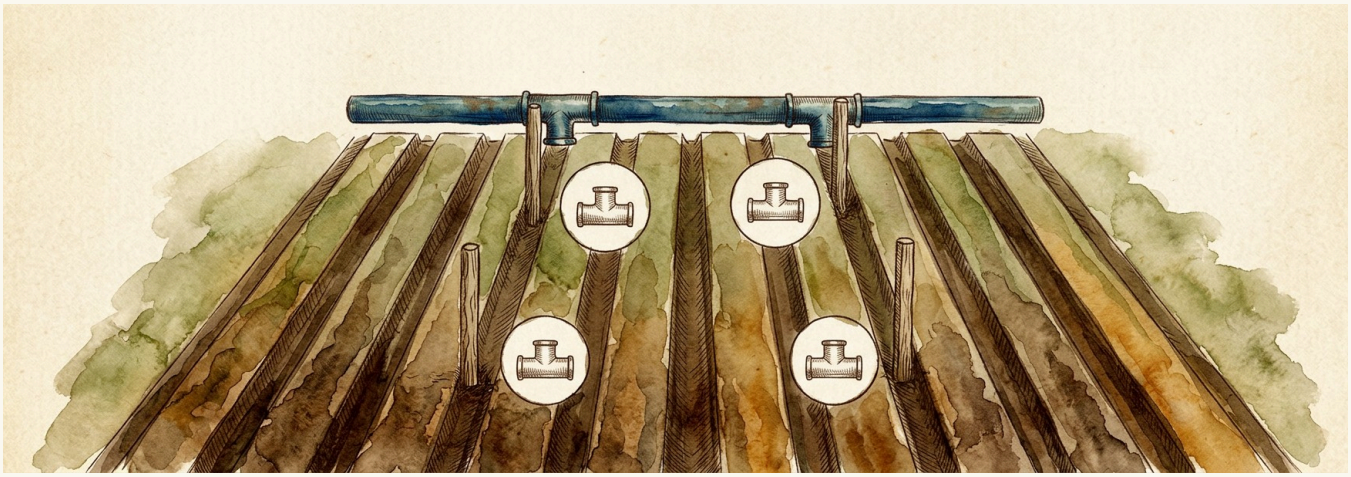
24 Cut the secondary lines at the level of the stakes to install the 4 connection tees of 30/25 mm.



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Tee fitting or



Tee fitting or

Take off collar 30/25

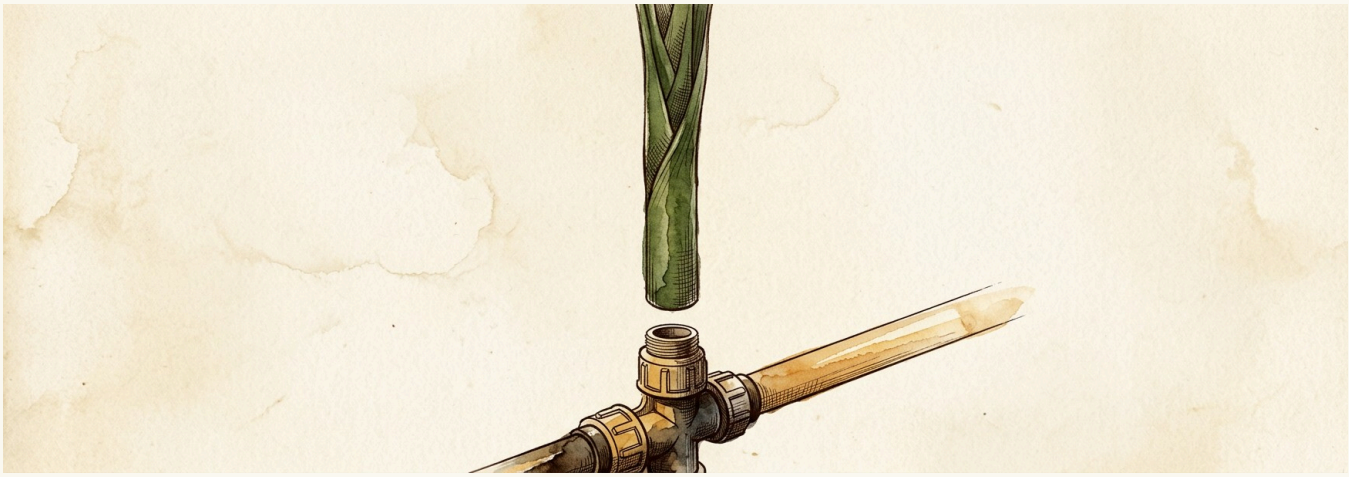
Connect the tee fitting to the secondary rail. Tee fitting or 30/25 take-off collar.

PER pipe



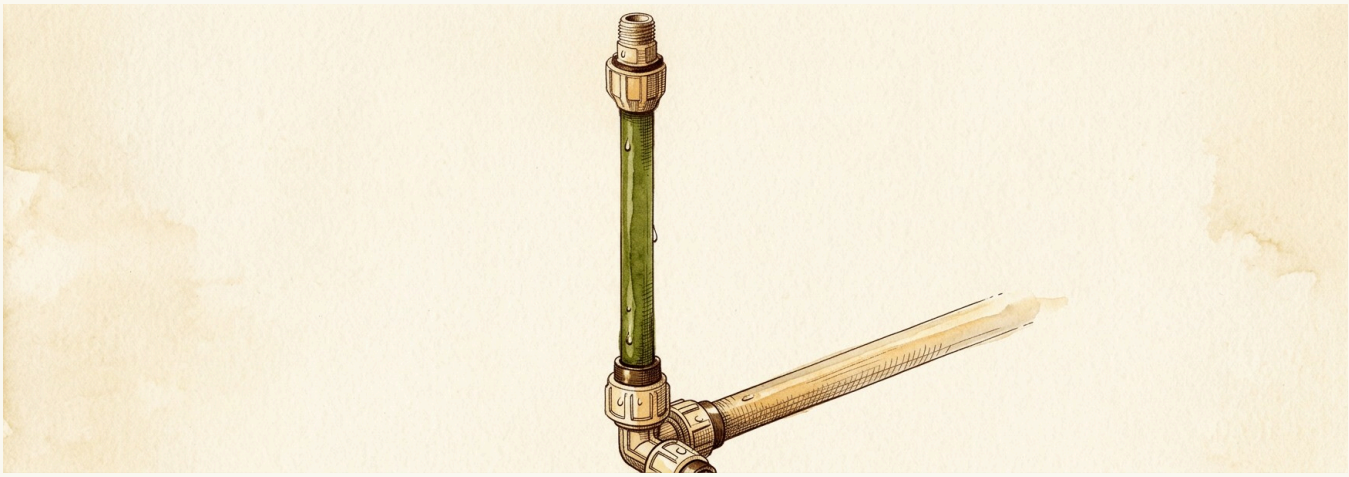
PER pipe

Connect the 1 m PER pipe to the connection tee.



Male fitting 25/15

Then connect the male fitting to the PER pipe: the male fitting fits onto the upper side of the pipe.



Clamping nut

Compression ring

O-ring seal

Support ring

Body

Here is the assembly of the male connector up close.



Clamping nut

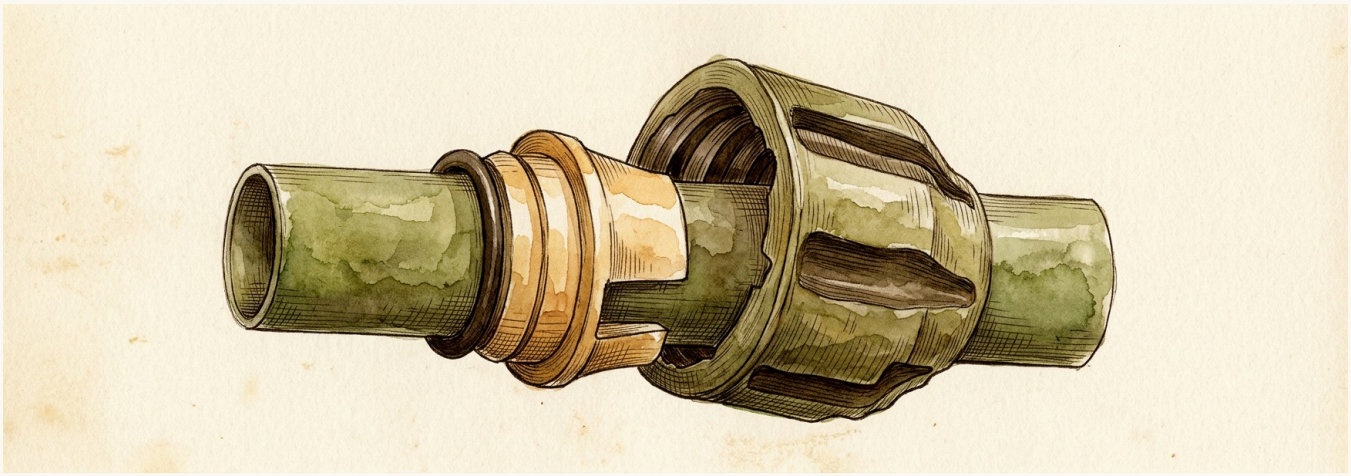
Support ring

O-ring seal

Compression ring

Here is the assembly of the male connector up close.

PER pipe



To ensure the sealing, without damaging the male thread, make two turns of teflon in the direction of the thread.

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Female



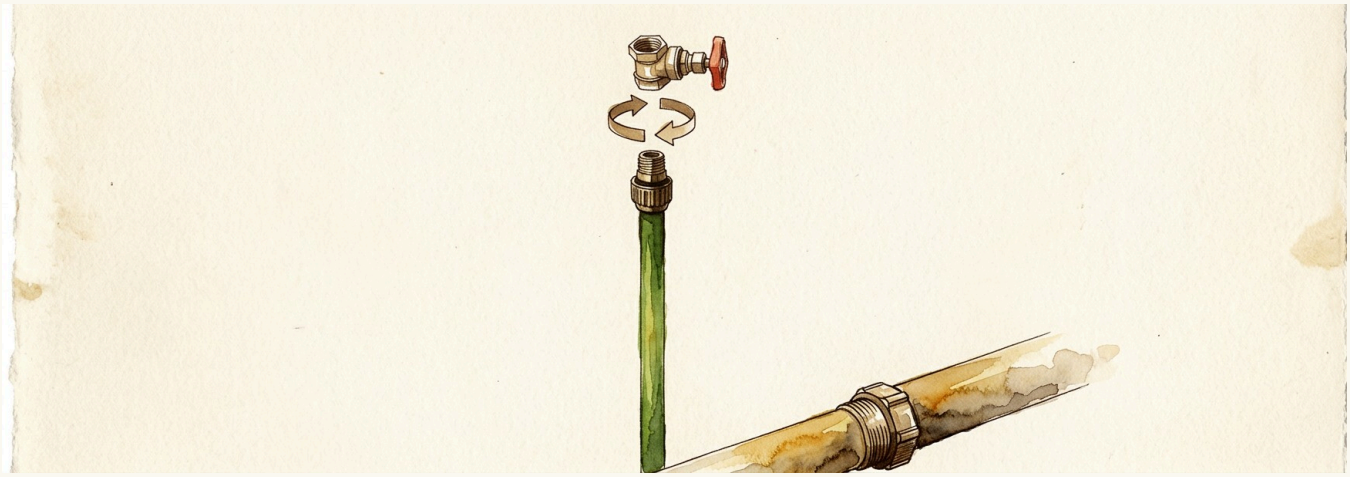
Female

valve

15mm

Connect the male fitting to the female valve.

Connect the female valve of 15 mm for the sprinkler heads.



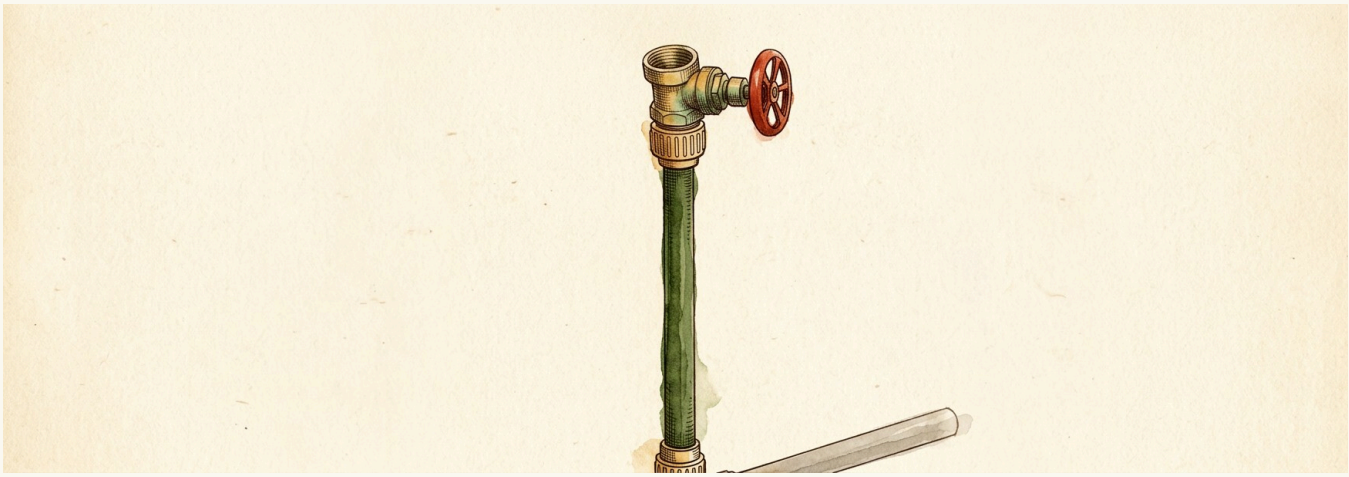
Connect the female valve of 15 mm for the sprinkler heads.

They will allow you to open or close each sprinkler individually in case of maintenance.

You therefore do not need to stop the entire system if there is a fault or a leak at a sprinkler.

33

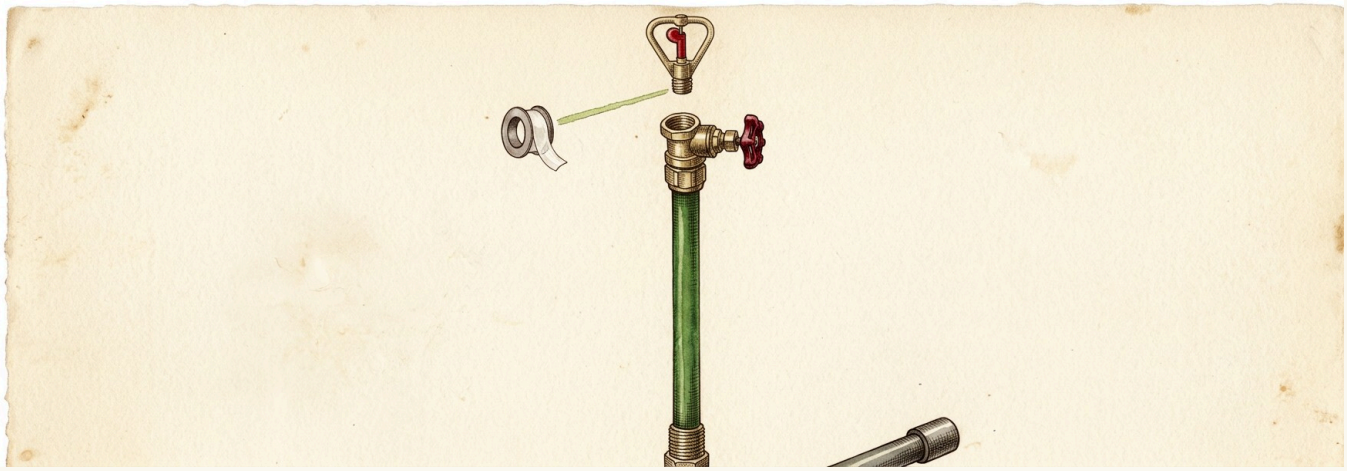
Make two turns of teflon on the thread of the watering head in the direction of the thread.



Make two turns of teflon on the thread of the watering head in the direction of the thread.

Then connect the watering head to the valve.

Repeat these operations on the three other spray rods.

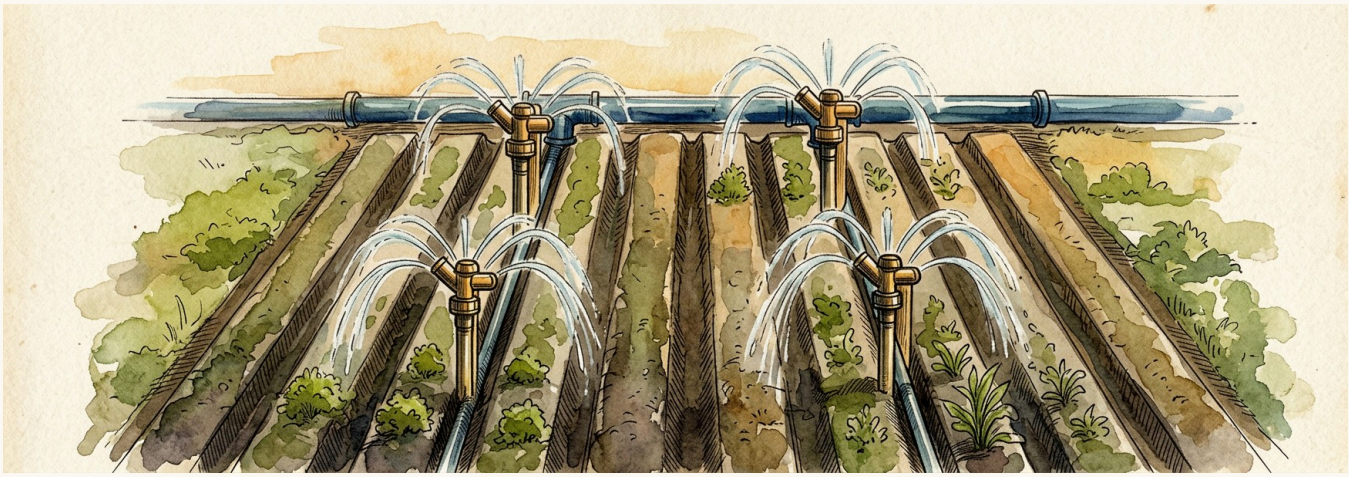


Repeat these operations on the three other spray rods.

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35

Attach the rods to the stabilization stakes with a rope.



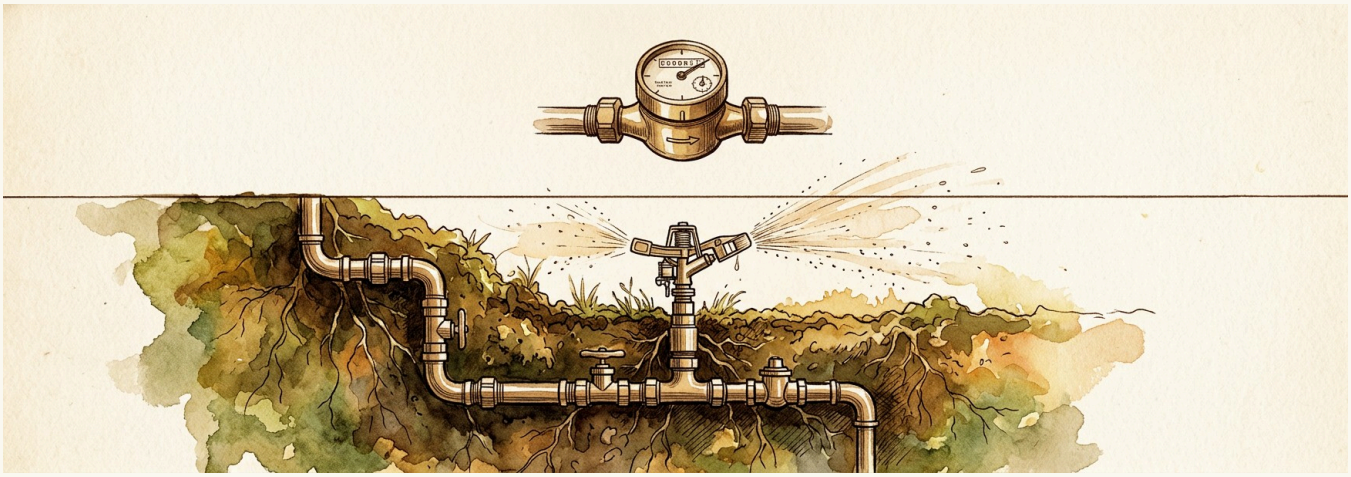
Attach the rods to the stabilization stakes with a rope.

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INSTALLATION OF THE SPRINKLER SYSTEM ON A 100M2 PLOT

STEP 4 : PRESSURIZATION OF THE SYSTEM



Test the system to ensure proper functioning and to check that there are no leaks.

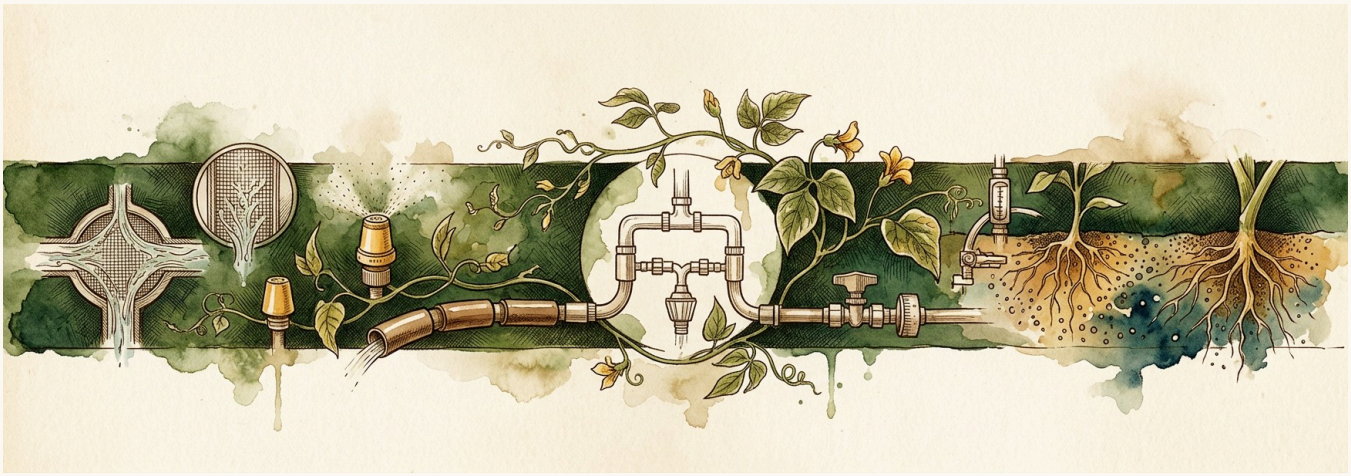
This allows for the validation of the proper functioning of the sprinklers for the flow rate and the available pressure.



INSTALLATION OF THE SPRINKLER SYSTEM ON A 100M2 PLOT

STEP 5 : MAINTAINING YOUR IRRIGATION SYSTEM

Visually check that the system is working properly and that there are no leaks when you switch it on.



Visually check that the system is working properly and that there are no leaks when you switch it on.

Grease rotating parts regularly.

Make sure that the spray nozzles are not clogged with lime or organic waste.



Congratulations ! You've just learned how to create your own sprinkler irrigation system.

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