

# *Gardening Your Soul*

## Training Course

From April 4th to 18th 2022

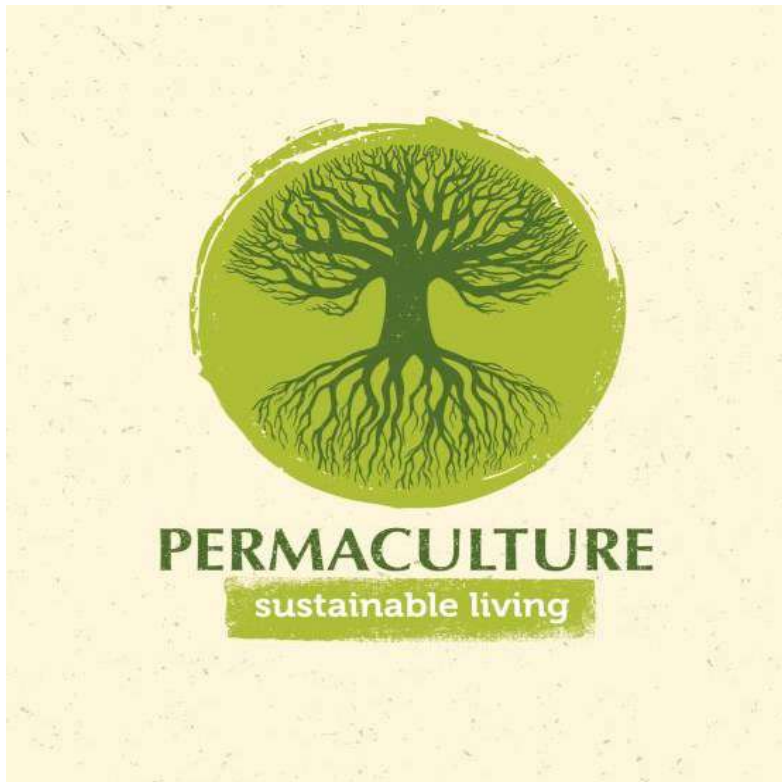
Bedeille - French Pyrenees

Booklet adressed to anyone interested in to Permaculture,  
and who wants to spread awareness through non formal education.



Erasmus+





In april 2023,  
27 peoples from 8 countries gathered  
to get trained in Permaculture.

This booklet has been written by the  
participants of the training course with  
some help of Solafrika's Team.

It is a result of the work and exchanges  
which occured during the training  
course between the parcipants, the  
trainers, the facilitators,  
the local community and each person  
that we met along this adventure.

Of course, no booklet can tell about the emotions that were experienced, or the inner  
transformation some of us went through.

Still, herein you will find  
a selection of reflexions that we went  
across,  
as well as detailed expalanations of  
workshops,  
in order to succesfully offer them to  
other Lovely Souls.  
We hope you will get inspired and who  
knows, maybe one day you will reuse  
and improve those activities !



Happy Reading !

For further information, please contact [asso.solafrika@gmail.com](mailto:asso.solafrika@gmail.com)

## Our European Partners

« Gardening Your Soul» has been implemented by the following European organisations through the Erasmus+ Programme :

SPAIN Equipo Mandragora

GERMANY IBG

SERBIA Sfera Serbia

BULGARIA Future World

GREECE Alter Ego

MACEDONIA CID

NETHERLAND Youth For Mobility

## Solafrika : Hosting Organisation

Solafrika is a non-profit organization which aims to create meetings between European youth in order to share, understand better each other and create solidarity, as well as revealing the potential of each person. Since 2010, the organization implements a lot of environmental, social and cultural projects in the region of Ariège (France)

Through the Erasmus+ Program, the organization gives young people the chance to live international mobilities, all expenses paid.





## Life at Solafrika

Based on ecological lifestyle. Unusual at first, but participants got used to it, and finally got fond of it. The atmosphere was really relaxing and people felt home. The environment was healthy, and people felt like they wanted to take care of it, keeping it clean and comfortable. A cleaning schedule was organized, for the different spaces of the venue, changing every day.

The water is saved through 2 tools : dry toilets, and a special spot to wash dishes in 3 basins. The garbage is sorted, so that it can be recycled easier. The food was healthy and tasty, the receipts creative. The facilitators were very present, caring about the participants and made sure everybody had enough good food.

Participants learnt to enjoy the small things and live the moment, and spent time together in the breaks, as there was nowhere else to go, because the place is very remote. Participants were from different countries and shared their cultural differences and their traditional food and drinks. The intercultural night (we organise a cabaret and a intercultural buffet) were the perfect example to share and learn from others. Some shared song, others shared dance, some even did a theater play.

## Collective Life

People taking on the responsibility of themselves and the group is a learning process that relies a lot on the personalities and the background of the group members. So it is always interesting and there are always things to learn, no matter the previous experiences.

Acquiring a perspective of an ecological point of view for every action participants take, having time to reflect about their imprint on the environment, is a helpful learning process as well, that can even be used after the project.

Last but not least, small tasks like cleaning a dry toilet or a common space during the informal time as a connecting and meeting process, where people can mix, learn about each other, try roles and behaviours they are not used to, and finally show parts of their personalities and backgrounds. Thus the group dynamic becomes stronger, and the group gives more space for the members to be who they want to be, accepts mistakes, and acquires common goals.

# Objectives and Activities

The main objectives of this training course are:

- 1/ Gain basic knowledges on permaculture gardening
- 2/ Rise awareness towards permaculture principals
- 3/ Give to the youth workers tools ready to use.

After the succes of the project "Rooting For Change", talking about permaculture in its all spectrum, we decided to go deeper in each topic of permaculture. This time it is about gardening.

In a world where kids draw a breaded fish when we ask them to draw a fish. In a world where the emergency is at the climate change. When the challenge is to learn new habits and ways of living, more respectful of the environment. In Solafrika we start by, how to reconnect with the nature and grow our own food.

Start small, grow your roots, blow your flower. The more love and fun you take, the more beautiful your garden becomes. Your project is like your plant, take your time, find harmony in your ecosystem, feed it and it will be strong and wonderful.

This TC pursue other goals such as:

- \* Promoting a more healthy way of living by an healthy, organic diet.
- \* Encourage critical thinking and being active in a group dynamic.

## Name Game / Ice Breaker

**Circle Of Name :** In beautiful round circle, each one of the participant is gonna tell their name with a qualifying which rhymes. After each person the all group repeat.

**Lucky luke:** In a circle everyone says their names with a particular wave. Everyone after repeat after them. Then, Someone in the middle point out someone who's gonna go down. The two neighbours of the person down have to point each other and say their names as fast as they can. 4 try without iliminating no one. Then the people who are not fast enough are out of the game.

**ZIP / ZAP :** Someone is in the middle is gonna point out someone and tell them  
.ZIP = You tell the name of the person who's at your left.  
.ZAP = You tell the name of the person who's at your right.  
.ZIP-ZAP = the all groupe change place.  
If the person who's pointed out cant' remember their name, then they exchange place with the person in the middle. And it continues.

**Rank in order :** Ask everyone to walk randomly in the space. Ask them to jump when you clap once, and to stop when you clap 1 times. Repeate it few times. Then add to gather by the number you say. At the say the number 7, in order to have 4 teams.  
Then the rank part start. Ask them to find the proper rank for their height, from the lowest to the highest. Then with the first letter of their name... dimension of feet, how far are their country to the place we are (less far in front further at the end of the queu)... The first letter of the name of their grandma, how many erasmus+ project they've done...

**Messe up :** Ask people to walk randomly in the space, and at the kirikiki (any funny sound), to meet anyone in the place and to:

- . ask them why are they in France
- . ask them what is their job or studdies
- . ask them what is their passion.

In between each question the facilitator leave 7 minutes to the participants to go and meet as much people as they can, asking the same question. After 7 minutes the facilitator do the kirikikiki again and announce the next question that the participants have to ask.

**Share your Chair :** Put the amount of chair minus one than the number of people playing. Everyone is sitting, except one, standing in the middle of the circle. Lets call those who are sitting player A, and the one standing, player B.  
Player B, has to announce a general sentence about something they did, they love, they dream etc.  
Example : « I love to swim » , « I can do 30 push up in a raw » , « I don't have my driving licence » « I travelled in more than 4 country » « I'm a teacher » « I don't eat meat » etc.

Then, players A, sharing the assessment from player B, has to stand from their chair. Quickly, players A and B, have to find a sit between those one freed by players A concerned.

The last one standing, become the new player B. And have to announce a new

Warning, as player A, you can't sit on the chair you just left, and not on the one just next to yours neither.





# Permaculture WorkShop





# How to build a workshop

Planning and preparation are key to a successful workshop. Tailor your workshop to the needs and interests of your target audience, and continuously seek feedback to improve and refine your workshop content and delivery. Good luck with your workshop!

## Step 1: Define Your Workshop Goals and Objectives

- Start by clarifying the purpose of your workshop.
- What is your vision of your project?
- What are you trying to achieve?
- Define specific goals and objectives that you want to accomplish during the workshop.
- This will help you plan and structure your workshop effectively.

## Step 2: Choose a Relevant Topic

- Select a topic for your workshop that is relevant to your audience and aligns with your goals and objectives.
- Consider the interests and needs of your participants, and choose a topic that will provide value and engage them.

## Step 3: Plan the Workshop Content

- Develop a detailed outline of the workshop content.
- Break it down into sections or modules, and decide on the key points, activities, and resources you will use to convey the information or skills to the participants.
- Consider the flow and structure of the workshop to ensure it is logical and organized.

## Step 4: Gather Workshop Materials

- Identify the materials and resources you will need for your workshop.
- This could include handouts, slides, flipcharts, markers, props, or any other materials that will support your workshop content.
- Make sure you have everything you need well in advance of the workshop.

## Step 5: Prepare Workshop Activities

- Plan interactive and engaging activities that will help participants understand and apply the workshop content.
- This could include group discussions, role-plays, case studies, simulations, brainstorming sessions, or other interactive exercises.
- Be sure to prepare any materials or instructions needed for these activities.

#### Step 6: Promote Your Workshop

- Create marketing materials to promote your workshop, such as flyers, posters, or social media posts.
- Utilize various channels to reach your target audience, such as email lists, social media, or local community bulletin boards.
- Clearly communicate the benefits and value of attending your workshop to attract participants.

#### Step 7 : Set Up the Workshop Venue

- Choose a suitable venue for your workshop that can accommodate your participants comfortably.
- Set up the workshop space with appropriate seating arrangements, audio-visual equipment, and any other materials or props you will need.
- Test all equipment beforehand to avoid any technical issues during the workshop.

#### Step 8: Conduct the Workshop

- On the day of the workshop, arrive early to set up and prepare.
- Start the workshop on time and follow your planned outline.
- Engage participants through interactive activities, encourage questions and discussions, and provide relevant examples and anecdotes.
- Be mindful of time and pace to cover all planned content.

#### Step 9: Collect Feedback and Evaluate

- After the workshop, collect feedback from participants to evaluate the effectiveness of your workshop.
- Use feedback forms, surveys, or verbal feedback to gather insights on what worked well and areas for improvement.
- Analyze the feedback to make adjustments for future workshops.

#### Step 10: Follow-Up

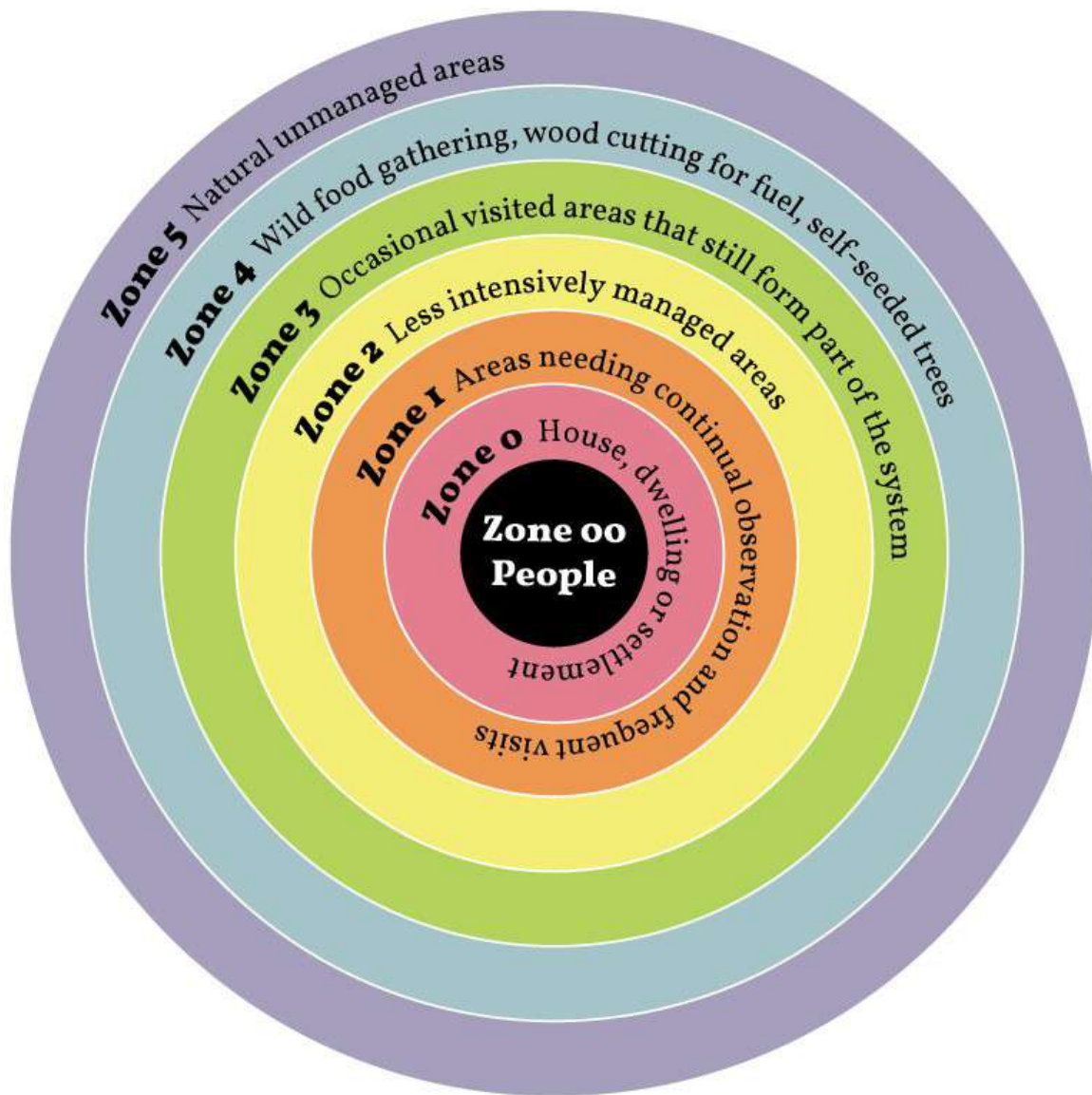
- Follow up with participants after the workshop to provide additional resources, answer questions, or address any concerns.
- Provide post-workshop materials, such as handouts or slides, for participants to refer to.
- Build relationships with participants to cultivate ongoing engagement and potential future workshops.

# Permaculture principles and design

*Permaculture is revolution disguised as gardening (B. Mollison)*

On the day 1 of the training “Gardening your soul”, our trainer Laurent covered several theoretical aspects of permaculture: the different zones, the ethics, the principles of permaculture and a design wheel covering many aspects and tools used in permaculture.

## ZONES





In permaculture, we usually define 5 different zones:

- Zone 0 is where the most important stuff for us humans lies (our house, camp...). It should therefore be the closest to people.
- Zone 1 is the area that needs attention and care, for instance several times a week. We can put the cooking herbs, fragile vegetable etc. Things that need a lot of work, the water source and also the most common tools.
- Zone 2 is the area where we put the crops that need less intensive management and work. The frequency of our visits there will depend on external factors such as the weather.
- Zone 3 is the area where we would put the animals that would cause disturbances (smell, noise, scraping...) as well as the things that need little care and occasional visits.
- Zone 4 is the area for less priority stuff, where we humans would still have an impact and cause disturbances but not on a regular basis, for instance for cutting wood or a food forest.
- Zone 5 is the wild area where humans would typically not go or cause disturbances.

## ETHICS

### Take care of the people/living

Fundamental values are empathy, respect, compassion, taking care of others, and practicing active listening.

It is important to understand that the efficiency and the results we obtain are directly related to the circle of life (animals, humans, plants).

### Take care of the land

We have to observe and pay attention because the practices of now are destructive. For this reason, we have to learn the knowledge of how to care for the land.

### Community

In permaculture, the community plays an important role. We are invited to create abundance and share with others the surplus of the production, creating a network of sharing, supporting and helping each other in different ways. A fair share of the yields, team work and care are key ingredients of permaculture.

# PRINCIPLES

Permaculture comes from empirical studies and aggregation of the best practices in agriculture. In the early works of permaculture, several principles were aggregated as the main salient characteristic for successful and sustainable agricultural projects. They are called the permaculture principles:

- Observe and interact
- Catch and store energy
- Obtain a yield
- Apply self-regulation and accept feedback
- Use and value renewable resources & services
- Produce no waste
- Design from patterns to details
- Integrate rather than segregate
- Use small and slow solutions
- Use and value diversity
- Use edges & value the marginal
- Creatively use and respond to change

# DESIGN WHEEL

The design of the project is a very important aspect of a permaculture project. To help this process, we studied the following design wheel (SpEmBoM for Spirit, Emotion, Body & Mind).

There are 5 concentric circles in SpEmBoM. Starting from the center outward:

LEVEL 1: METAVISION

LEVEL 2: MACROVISION - Dragon Dreaming

LEVEL 3: PROCESS

LEVEL 4: METHODS

LEVEL 5: TOOLS

Level 1 is the deepest level, the one that connects us to our most ancient roots. Level 2 follows the typical terminology of Dragon Dreaming. Level 3 follows Permaculture design processes and adds to them some fundamental points throughout the process. Levels 4 and 5 are a collection of the most well known elements and tools of permaculture design.

The wheel represents the cycle from the “dreaming” part (in red) to the “mind” part (in yellow). After the end of a cycle, another one starts again. The wheel compiles most of the processes and tools that could be needed to achieve the design of the project but all are not needed: you should decide what tools you want to use.





# Edible Forest

An edible forest is a place in a permaculture land where trees grow that produce food, fruits, mushrooms or nuts. The edible forest is typically located in the 3rd zone, meaning that it is not visited often.

The main goal of designing a food forest is to produce food. However, it is good to keep other things in mind. It is important to consider the sizes of the trees, the shade they will produce, the amount of light and nutrients they need, and how they can be combined with other trees. The forest can be multidimensional by using the multiple layers it contains. For instance combining large and small trees with mushroom cultivations at the soil level. It is helpful to draw the trees first and play with them on a plan of your land to see the different possibilities. Here it is important to consider the size of the trees when they are fully grown.

Elements of an edible forest you can use are trees that grow nuts, orchards that produce fruits, shrubs that give berries and brambles, herbs and low growing fruits such as strawberries that also act as ground cover, vines that climb on the trees, and fungi that produce mushrooms at the soil level.

Some big trees with deep roots are able to draw water and nutrients from deep in the ground. This ability is useful for making the ground around the tree more fertile for other plants. This is especially useful when planted at the top of a slope, as this is not a location where the water will naturally be available, and in this way the water and nutrients can spread downhill over time.

Furthermore, the trees can provide shade and can be used to block the wind. Plant them on the north side of your land if you do not want too much shade, as the sun shines from the south on the northern hemisphere.

You will need pollinators to produce fruits. There are many ways brings insects in your forest.

Brings in flowers [Dandelion, artichokes, sunflowers, arnica, cardon... Also umbrelliferas like angelica, coriander, fennel, cumin... ]. They attract bees and others. And assure they will bloom at the same time than trees, otherwise it's useless.

You can also attract insects through ponds (shallow for batracians not to drown), insect hotels, tubes hives, hedges, wet clay. Multiply the varieties to regulate pests.

Use repellants to avoid those not welcomed (mosquitos?) : marigold, alium, citronella, mints, rue, calendula, tagetes.

20% of the trees should be nitrogen fixers (acacia, robinia, alnus, eleagnus). Protect them (spiky bushes, hedges, chicken wire).

Pee on them to mark your territory. Don't spoil the trees, it makes them lazy.

Graft them to go quicker, but also to be sure of which variety you get. Starting from the pit don't make it certain to have the same fruits.

To plant a tree, make a square hole (50cm) and 50 to 80cm deep, depending on the roots they have. Water at the extremities, roots scattered in all directions.

If they have naked roots. There is a preparation you can make to put on the roots, to help the trees to settle easily in the ground.

In a big bucket (big enough to soak your roots in), you have to mix : Water, Ground and Cow Poo. You have to find a texture liquid enough to soak it in, but not too much that the preparation get fixed on the roots. It will help not have air bubble between the roots and the ground when you plant, and so help the tree to grow.

Mulch all trees with wood chips, to invite mycelium and keep water. Plant them on contour lines and use swales. especially in the first 5 years.

To bring a lot of organic matter, grow « chop and drop » constantly : comfrey, nettle, lupine, alfalfa... deep taproots plants are good dynamic compost accelerators. Mycelium will also be essential. Mulch protects the roots, that are usually close to the surface (20-30 cm). It also prevents grass from stealing the tree's nutrients, but you can choose to put some compatible ground covers instead : mint, nasturtium, comfrey, clover, plantago...

On the border of the forest, use shrubs as wind breaks. A good density of shrubs is 80%, to leave some space for the wind. Completely blocking the wind won't help. Plant them in overlapping layers for the same reason.

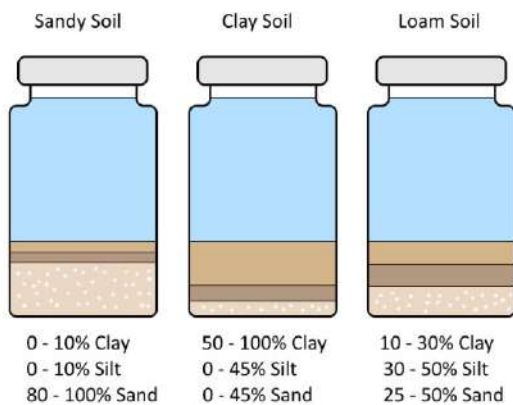
# Analyse of Soil

Depending of the composition of the soil, you will have to work differently or choose different species. Following, these 3 tests, will help you to determine how is your ground.

## Sedimentation Test

It's a simple test, all you need is a tall empty jar, a marker and some water.

1. Fill jar 1/3 full with dry soil, break up any clumps or clods.
2. Fill the jar with water to about 2.5 cm (1") below rim.
3. Place lid on the jar, shake vigorously (1,5 minutes) to mix the soil and water well.
4. Place the jar on level surface, use marker to mark level of soil sediment on side of the jar at the following times:
  - After **1-2 minutes** this is the **SAND** layer.
  - After **1 hour** this is the **SILT** layer.
  - After **24 hours** (or until the water is relatively clear, may take several days) this is your **CLAY** layer. Anything left floating is just organic material.





## Ribboning technique



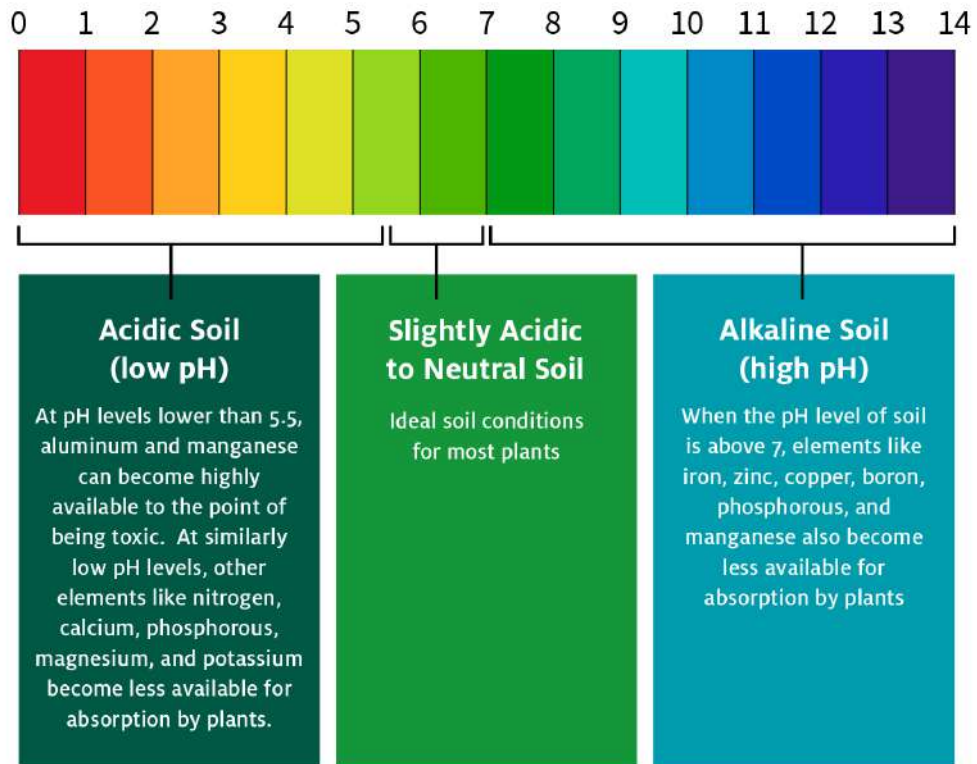
This test allows us to observe if our soil is sandy, silty or clayey.

Dig a bit (5cm), grab a piece of ground (30g), and you roll it into your hand. You try to make a ribbon of it. Depending on how much it shape or not, it stick or not etc. you can conclude how is it composed.

The optimal soil for a vegetable garden is 30% sand, 50% silt and 20% clay.

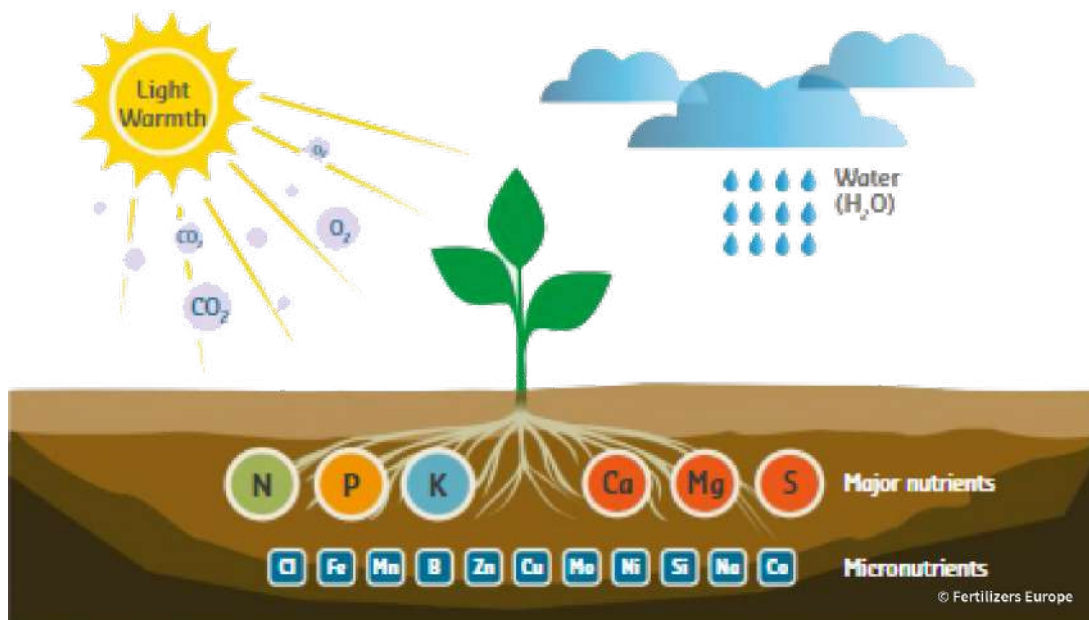
sand	<p>Light color, flows through fingers, light, does not get compact. Large particles compared to clay, so it's a light soil that doesn't retain water but drains it.</p> <p>Unstable, not fertile, but easy to work.</p> <p>Broom and heather.</p> <p>pH 6.2 to 6.6 , thus acidic.</p> <p>Improve with soil, manure, mulch to store moisture and reduce erosion.</p> <p>Limestone : light color, dry, crumbling texture, draining texture. Poppies, mustard.</p> <p>Made out of lime. Muddy in rain, cracks in summer, like clay. pH higher than 7.5, thus alkaline.</p> <p>Improve with manure and sand.</p>
silt	<p>Black, light, and fertile. Close to clay but less nutrients. Can easily be scrunched up if stepped upon, especially if wet.</p> <p>Rich in humus because made of decomposed organic matter.</p> <p>pH less than 6.6, thus acid. Improve by adding lime, algae or dolomite rock to neutralize acidity... or limestone/clay soil.</p>
clay	<p>sticky, light or vivid colors (yellow, red).</p> <p>indicators : Dandelions, bindweed and buttercup.</p> <p>Heavy and muddy in rainy climates, becomes hard with the sun. Stores water and moisture, but doesn't easily allow water it to seep in. Hard to work, but very fertile if we can free the nutrients trapped within.</p> <p>pH 6 to 7.4. As the particles are very thin, improve with sand, compost, manure (don't bury), organic matter. Disturb as little as possible.</p>

# PH TEST



# Plants Needs

- Water
- Heat (especially while germinating)
- Light (after germinating)
- Oxygen
- Nitrogen (mineral), that helps develop your stem and leaves. You get it from green compost (everything that's flexible), well matured kitchen waste, ash, nitrogen fixing plants.
- Potassium: helps the flowering. You can find it in algae, ash, green mulch, rock powder especially limestones).
- Phosphorus: helps to make fruit. You'll find some in decomposed organic matter and dry straw.
- Carbon: primary energy source and building block for plant tissues. Converted through photosynthesis into simple sugars, helps plants build starches, carbohydrates, cellulose, lignin and protein.
- Atmospheric nitrogen: a major component of chlorophyll, the compound by which plants use sunlight energy to produce sugars from water and carbon dioxide



Method of the 6 "S" (to get more water):

Source	Spread	Slow
Sink	Store	Save

## Green fertilizers

The idea is to plant them during the fall so your soil doesn't lay bare and is protected from the elements. In spring, you cut down everything, to make your soil clear for crops, but you leave all this waste on the spot, so that by decomposing it will return nutrients to the ground. Some green fertilizers have specific extra effects:

- For acidic soils: buckwheat, lupine
- To decompact the soil: phacelia, rye, linen
- To fix nitrogen: alfalfa, white clover, fenugreek, vetch

Some of them are also edible, and some can be mixed for more efficiency.

<p>Extra info : films</p> <p><i>The Hidden Life of Trees:</i> <a href="https://www.youtube.com/watch?v=7jq9CfbN2eA">https://www.youtube.com/watch?v=7jq9CfbN2eA</a></p>	<p>Kiss the ground: <a href="https://www.youtube.com/watch?v=K3-V1j-zMZw">https://www.youtube.com/watch?v=K3-V1j-zMZw</a></p>
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# Lasagna Technic

## Ingredients:

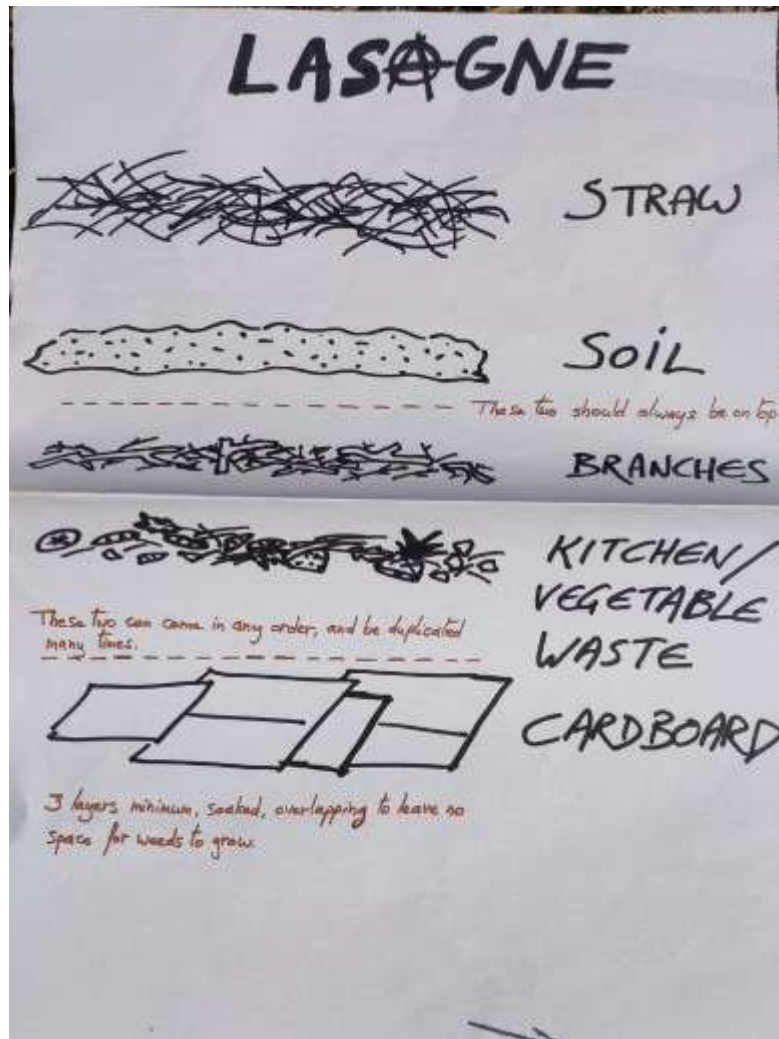
Leaves	Branches and Twigs	Grass	Soil
Water	Cardboard	Straw	

Take some tools with you : shovels, rakes, buckets, gloves.

## Preparation

1. Check if the **ground** is at an angle. If there is a slope, dig an L-shaped **ditch**. If the ground is flat (like in the Netherlands) there is no need for a ditch.
2. Remove the **plastic of** the cardboard
3. **Soak** the cardboard in a water bucket
4. Put three overlapping layers **cardboard** (to overlap 10 cm minimum)  
Do not use white cardboard with toxic print but brown one with natural pigments
5. On top of the cardboard, place a layer of **tree bark and/or twigs**
6. Add a **BROWN** layer, such as dry leaves. If using dry leaves, soak them with water (in a bucket) and put them on top of the previous layer
7. Add a **GREEN** layer such as freshly cut grass or green leaves for nitrogen enrichment
8. Enrich with a layer of **manure** (preferably cow or horse manure)
9. **Repeat the layers** of step 6 & 7 as much as you like, or till you run out of brown or green materials
10. **Add about 15 cm of soil** (add clay or sand or whatever if needed)
11. Protect the soil from direct sun and rain exposure with **a layer of straw** (about 15 cm)
12. Make sure that everything is **wet / moist**

After making the Lasagna, let it simmer for 6-8 weeks and then enjoy your gardening.



## TIPS and TRICKS

It is prudent not to plant cucumbers, zucchini, squash since they need a lot of water. If the soil in your garden consists of a lot of clay, mix it with humus soil in a 50:50 ratio. Water it generously, whenever you can. One can use rabbit and chicken manure too but as it is considered stronger than horse and cow, mix it with other things.

# Transplanting plants in permaculture

## How to Transplant the Plant

Transplanting is the process of moving a plant from one location to another. It is often used to move young seedlings from their starting pots to their permanent location in the garden. It is also used for cuttings. If you are transplanting the cutting into a pot, make sure to choose a pot that is the right size for the plant. When transplanting, it's important to handle the plant carefully to avoid damaging the plant. Dig a hole in the new location that is slightly larger than the plant's roots. Gently loosen them and place the plant in the hole, backfilling with soil until the plant is at the same depth it was in its original location. Water the plant thoroughly to help it settle into its new home.

## When to Transplant the Cutting

Once the cutting has developed roots, it is ready to be transplanted. This usually takes around 4-6 weeks, but can vary depending on the plant and growing conditions. It is important to wait until the roots are well-established before transplanting the cutting, as this will give it the best chance of surviving.

## Where to Transplant the Plant Into

When transplanting the plant or cutting, choose a pot or a garden bed that is the right size for the plant. The pot or bed should be deep enough to accommodate the roots and wide enough to allow the growth. If you are transplanting the cutting into a pot, make sure it has good drainage to prevent water from accumulating and causing root rot. It's important to choose a location that provides the right growing conditions. This includes the amount of sunlight, water, and nutrients the plant needs to grow and thrive.

In permaculture, plants are often arranged in guilds, where companion plants are used to support and complement each other's growth. This can help to create a self-sustaining ecosystem that provides food, habitat, and other benefits for wildlife and humans alike.

With these tips, you can successfully propagate new plants and enjoy your beautiful garden.

# Cuttings of Plants in Permaculture

Permaculture is a holistic approach to gardening and farming that focuses on sustainability and self-sufficiency. One of the fundamental techniques used in permaculture is the propagation of plants through cuttings and transplantation. Here's what you need to know about these techniques and how to use them in your permaculture garden!

## How to Cut the Plant

The first step in propagating a plant from a cutting is to take a healthy cutting from the parent plant. It is important to choose a stem that is healthy and free of disease. The cutting should be taken from a branch that is still green and has not yet hardened. To take the cutting, use a disinfected (e.g. with 90% alcohol) and sharp pair of pruning shears to cut the stem at a 45-degree angle. Make sure to cut just below a node, which is where the leaves attach to the stem.

## When to Cut the Plant

The best time to take cuttings is during the plant's active growth period, for most plants, this is in the spring or early summer. Some plants, such as lavender and rosemary, can also be propagated from cuttings in the fall. During this time, the plant is producing new growth and is more likely to root successfully. You should avoid taking cuttings during the dormant period, as the plant will not be actively growing and will not root as well.

## Where to Cut the Plant

When taking a cutting, it is important to cut just below a node, which is where the leaves attach to the stem. This is where the plant's natural rooting hormones are located, and cutting here will increase the chances of the cutting successfully rooting and growing into a new plant.

By propagating plants from cuttings and transplanting them to the right location, you can create a thriving, self-sustaining garden that provides food, shelter, and other benefits for years to come.



# Seeding

Sprouting seeds indoors is an effective way to increase the germination rate versus germinating seeds outdoors directly in the soil. Additionally, indoor seed starting is a common method among those who have backyard vegetable gardens, especially those who live in colder, northern climates, where young seedlings might struggle to survive under chilly conditions.

## Steps to germinate seeds indoor

1. Choose your seeds carefully, they shouldn't be old
2. Prepare the seed-starting soil mixture

You can use commercially available seed starter kits. But you can also prepare it on your own. You will need:

- a) 40-45% very well ripened compost or manure that is sifted through very a fine sieve,
  - b) 50-55% of soil from your garden, also sifted through very fine sieve,
  - c) 5% sand,
  - d) few handfuls of ash
3. Take a small pot and fill it with the prepared soil mixture
  4. Place the seeds in the soil  
Follow the seed packet instructions on how deep to plant the seeds. Typically, the rule of thumb is to sow seeds at a depth two times the width of a seed.
  5. Water it with a sprinkler or put your pots in the water for few minutes
  6. Place your pots on a warm and light place
  7. Keep the soil moisturized
  8. After your seeds germinate, move them in a light room that is not too warm, otherwise your plants will get thin and tall.

## How to plant plants together?

Companion planting is when two (or more) plants are grown near each other for the benefit of one of those plants or both—so the benefit can be one way or mutual. Companion planting could be as simple as growing flowers near your crops to attract pollinating insects or growing two vegetables alongside each other to confuse or repel pests.

# Build a Palet Box

Materials:

Nails (4cm and 6cm)	Meter	Carpenter hammer	Crowbar
Mallet	Pencil	Set square	Hand saw
Pinces	(Clamp)	Batten(6,00*4,00 cm)	Palettes
Tarpaulin	Staplet	Soil	Manure
Fertil ground	(Seeds and plants)		

Security materials:

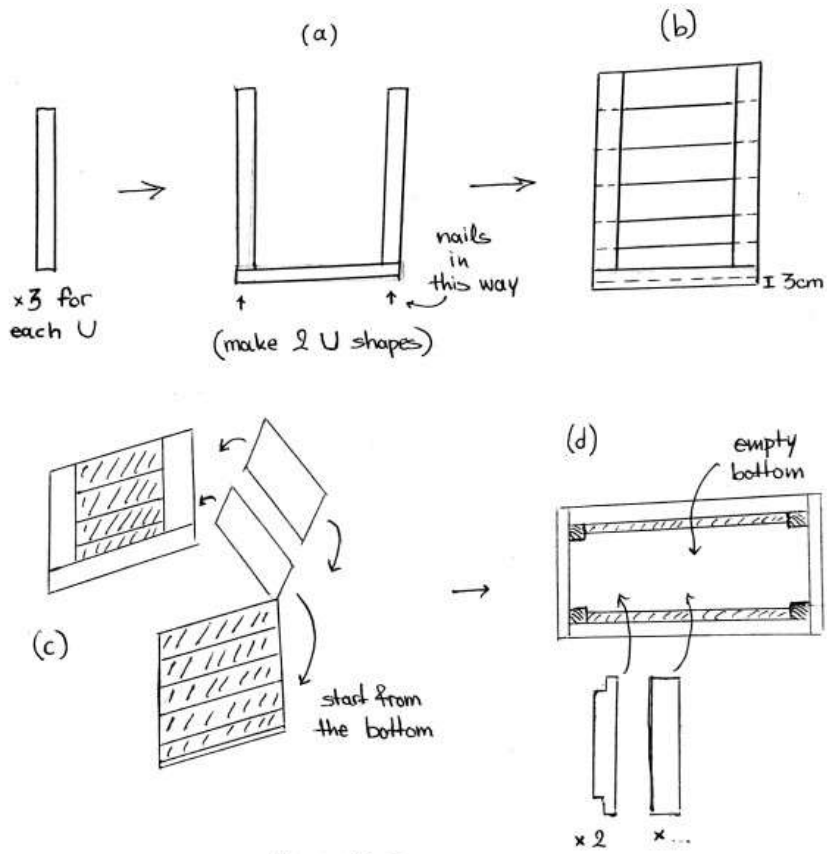
- Gloves
- Ear defenders

→ **Name the safety rules and make sure that everyone is listening!** Materials are only used in the work zones after instruction. Take care of your fingers and use the handsaw carefully. Loose nails should be collected in a box, etc.

Steps:

1. Remove the wood boards from the palettes using the crowbar or hammer.
2. Remove the nails using the carpenter hammer (when you cannot get them out, cut them close to the wood and mark them).
3. Sort the wood board by size and thickness (try to take the one with the same thickness)
4. Decide the size of the box, depending on the size of the wood board you have.
5. Draw the measurement you need on the wood using the meter, the set square and the pencil.
6. Cut the pieces you need with the hand saw out of palettes and the batten (trying to cut on the lines).
7. Follow the step of the picture
  1. Make 2 U shape with 3 batten each and stabilize it with nails in the corners and make sure that you have 90° in the corners, use the set square for checking
  2. Put wood boards on the side with nails (be careful not to cross nails and check with the set square) but leave at least 3 cm from the bottom so that you can grab it easily
  3. Connect bothe U shapes with the wood boards for the sides start from the bottom but remember to leave 3 cm free (now you have a box without bottom)
  4. for the bottom you have to work inside the box. First check if the calculated size is still right. Before you can put the wood board inside you have to cut out the corners from the batten (start on one side, add the wood board and now calculate and draw the corners you want to cut out on the last board). Fix everything with nails

8. Put the Tarpaulin inside and fix it on the top and the sides with the stapler
9. Bring the box to the right place and fill it there (the box gets very heavy!)
10. Celebrate your new box!!!



YOU HAVE  
 A BOX NOW!!!



# Windows Farming

## How to make a Tetra Pack Planter

You will need:

- 4 or 5 well-rinsed Tetra Packs (milk or juice cartons work best)
- a marker
- a ruler
- a craft knife and a pair of scissors
- String
- Clay balls
- 3 or 4 small plants
- filters for nettle water
- nettle water
- infusion kit
- 3 or 4 drippers
- 3mm and 8mm drill
- 3 or 4 little plastic planting pots
- a container/bottle to collect water

1. Use the craft knife to cut the tetra packs. For the one that will go on the top, cut only the bottom part as it will be used for storing water. As for the other tetra packs, first measure 8cm on two sides and 10 cm on other two sides. You can use marker and ruler to make it more precise.
2. Fold the higher sides by 2 cm, and drill 8mm holes through them. By folding them you will make stronger structure for the strings.
3. Put a string through the 8mm holes and tie in a loop to secure each tetra pack. Make sure to leave enough string on top of the first one so you can hang it on the window. The tetra pack should be at least 20 cm apart from each other.
4. Place the lids on the hard surface and drill 3mm holes for the drippers. Leave one without a dripper.
5. Put planting pots inside of all tetra packs, except the top one. Put a filter for nettle water in this one.
6. To prepare the plants, take them out of the soil and wash the dirt from their roots thoroughly.



7. Fill the tetra packs with washed clay balls, put the plants inside them and then add a few more clay balls.
8. Measure the infusion hose starting from the lid of the top tetra pack to the clay balls of the second one, and leave 5-6 cm more to make sure all drops will go inside the second pot.
9. Screw the spike of infusion set on the lid of the top tetra pack.
10. Now it is time to make nettle water: mix 25 ml of liquid nettle manure and 500 ml of water, and pour it through the filter in the tetra pack on top.
11. Put the container or glass bottle beneath the last tetra pack to collect the drops falling from the last tetra pack. You can re-use this nettle water for 5 times.

Well done, you have your own vertical tetra pack planter!



# Worm Compost

## Theory of vermicompost

Vermicompost is the product of the decomposition process using various species of worms, to create a mixture of decomposing vegetable or food waste, bedding materials, and vermicast. The most common in Europe are red wigglers like *Eisina fetida* and *Eisina hortensis*.

Vermicast (also called worm hummus) is the end-product of the breakdown of organic matter by earthworms. These excreta have been shown to contain reduced levels of contaminants and a higher saturation of nutrients than the organic materials before vermicomposting.

Vermicompost contains water-soluble nutrients and is an excellent, nutrient-rich organic fertilizer for plants and soil conditioner. It is used in gardening and sustainable, organic farming.

## What can be composted



Vermicomposting is really useful for composting food waste that it's generated in your kitchen. In addition, the installation and the size the boxes are not so big, so is suitable for composting even in flats in the city. On the other hand, you aren't going to be able to throw garden or yard waste like bags of dried leaves, branches, or other large debris into the system.

You can feed the worms with fruit and vegetable scraps like potato peels, apple cores, and cooked veggies or fruits as long as they haven't been cooked with oils. Coffee grounds, tea bags, loose leaf tea, and eggshells are all also suitable. You can add some citrus fruits, but not too many as they take a lot longer to break down and the acidity may kill the worms.

Meat, bones, dairy lactic products, or oils (even vegetable oils) can't be digested by the worms, so keep those out of your bin.

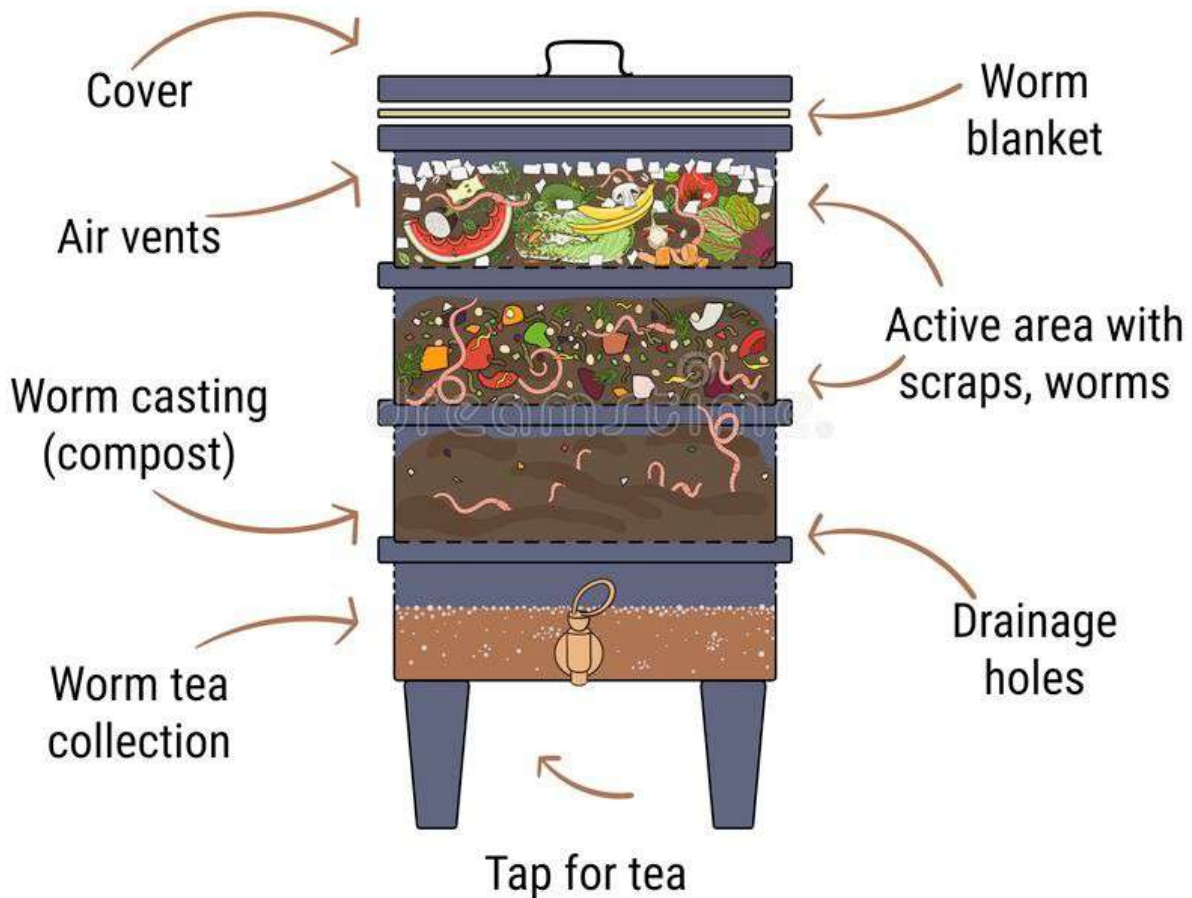
## How to craft your own vermicompost

To build a vermicomposter, what we must take into account is the importance of maintaining the conditions of aeration, drainage, temperature, humidity and absence of light that we saw previously. In general, any container can be reused, although plastic buckets are recommended to maintain the humidity required by annelids very well. The most important aspects to take into account when building a vermicomposter are the following:

1. The container must facilitate the output of leachate (liquid fertilizer). A way to collect leachate must be considered.
2. It must present at least two compartments separated by small holes, so that the worms pass into the fresh material and leave us the vermicompost made. The separator can be placed horizontally (worms move up or down) or vertically (worms move laterally).
3. A lid on top to add and remove materials. And avoid the presence of flies and other unwanted beings.



# VERMICOMPOSTING



## What You'll Need

- 4 wood or plastic boxes of 40x30x10 cm
- Enough metal or plastic grid of 5-8cm diameter holes to cover 2 boxes
- Enough metal or plastic grid of 0.2cm diameter holes to cover 2 boxes
- Cardboard
- Bucket filled with water
- 250g of suitable species of worms
- Drill (in case that you don't have grid and want to make the holes into the cover boxes instead)
- Kitchen compost



Instructions: place the boxes together in a pile and place between each of them either the grid or drill the holes. Make sure the boxes are tight so worms cannot escape. Organize the compost on the starting box and wait one week for bacteria to break down the matter, then insert the worms on the starting box.

## How to prevent pests and problems

### Smells

When closed, a well-maintained bin is odorless; when opened, it should have little smell—if any smell is present, it is earthy. The smell may also depend on the type of composted material added to the bin. An unhealthy worm bin may smell, potentially due to low oxygen conditions. Worms require gaseous oxygen. Oxygen can be provided by airholes in the bin, occasional stirring of bin contents, and removal of some bin contents if they become too deep or too wet. If decomposition becomes anaerobic from excess wet feedstock added to the bin, or the layers of food waste have become too deep, the bin will begin to smell of ammonia.

### Moisture

Moisture must be maintained above 50%, as lower moisture content will not support worm respiration and can increase worm mortality. Operating moisture-content range should be between 70 and 90%, with a suggested content of 70–80% for vermicomposting operations. If decomposition has become anaerobic, to restore healthy conditions and prevent the worms from dying, excess waste water must be reduced and the bin returned to a normal moisture level. To do this, first reduce addition of food scraps with a high moisture content and second, add fresh, dry bedding such as shredded newspaper to your bin, mixing it in well.

### Acidity

If the compost smells too much as vinegar, that could be meaning that the pH is too low. Egg shells are made of carbonate which is alkaline. Adding them will increase the pH in a more desirable levels (close to neutral).

### Pest species

Pests such as rodents and flies are attracted by certain materials and odors, usually from large amounts of kitchen waste, particularly meat. Eliminating the use of meat or dairy product in a worm bin decreases the possibility of pests.

In warm weather, fruit and vinegar flies breed in the bins if fruit and vegetable waste (nitrogen source) is not thoroughly covered with bedding (carbon source). This problem can be avoided by thoroughly covering the waste by at least 5 centimetres of bedding. The quantity of water should not be more than just enough water where squeezed bedding drips a couple of drops.

## Worms escaping

Worms generally stay in the bin, but may try to leave the bin when first introduced, or often after a rainstorm when the humidity outside is high. Maintaining adequate conditions in the worm bin and putting a light over the bin when first introducing worms should eliminate this problem.

# Example of Agenda

## How to start your garden

**Disclaimer:** This is only an example of a calendar for seeding, planting and preparing the ground. The dates given need to be adapted to your area and local weather. The dates give you an orientation when to start with which task. You can also start later but it will affect the duration of your season. Please feel free to take into account the community aspect of gardening and the permaculture principles for the design and running your garden as eg. companion plants and biodiversity.

**Before you start:** Observe for one year, do a transect walk (observe and interpret)

### **February:**

Start with *seeding inside*: beans, peas, tomatoes, cabbage, onions, spinach, carrot etc. make sure there is enough light and air circulation

*Prepare the land* with lasagna or broad fork, break the lumps and spring mulch with hay or grass, do not turn or work the soil if you can avoid it

*Plant outside*: fava, bean

### **March:**

*Take care of your plant babies inside*: transplant them to bigger pots if needed, put them in the greenhouse if warm enough, let them be without water for 8 to 10 days before transplanting

Install *irrigation system* eg. drip to drip

*Prepare the ground*: remove tarps from the ground if you covered it during the winter to help the soil warm up, broad fork, false weeding: water the soil so weeds grow then 10 days after, just before planting/seeding, cut all the weeds, remove mulch for 10 days before planting or seeding

*Seed inside* eg. melons eggplants and peppers, put short lived crops outside eg. radish, lettuce, spinach

*Cut trees and grapes*

### **April:**

*Transplant your baby plants* to greenhouse or bigger pot (15° to 20°C)

*Put compost* around the fruit trees

*Get rid of weeds* by putting boiling water or pee 2 to 3 times on them or cut them

*Seed* lettuce, squash, pumpkin (end of April)

*Seed* corn and sunflower

### **May:**

*Seed directly outside from the end of may*: celery, beetroots, beans, amaranth, cucumber, parsnip, zucchini, sorgho, etc.

### **June:**

Broccoli, fennel

### **July:**

Chicory, chinese cabbage, chervil

### **August:**

*Plant* strawberries, tomatoes, basil, onions

### **September:**

*Winter crops*: cabbage, onions, garlic, potatoes

*Seed* green fertilizers or heavy mulch (compost not decomposed)

*Cover the ground* with tarp or cardboard, mulch

*Cut the plants* and leave the roots in the ground

### **November:**

*Plant fruit trees*

Thanks To our Lovely Participant



*We hope that you enjoyed your stay, that all these informations will help you in your own project.  
We wish you all the best.*