



A Gardeners' Guide

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Introduction

A lot of people from France, Germany, Greece, Italy, Latvia, Portugal and Wales worked two years together to practice, learn and share gardeners' experiences, focussing on a more sustainable way of growing flowers, fruits and vegetables. In this guide we collect some of our tutorials, you will find more useful information online at <http://garden-future.eu/>

Growing our own garden can give us lots of pleasures!

It makes us feel creative while watching the seed we have sowed germinate and gradually grow into a plant. It motivates us to be closer to nature and mother earth. It gives us satisfaction when we jubilantly take the harvest straight on our table. It's a relaxing hobby. It saves us money.

But above all, it supplies us with aromatic herbs and fresh, juicy and tasty vegetables, free of chemicals, so we know what we eat.

Gardening might demand hard work, however, you'll be rewarded for all your efforts, so....why not try it for yourselves?

We hope this guide will be a useful tool for you!

How to initiate and sustain community based projects?

By Shan Ashton, Christine Graf

About this tutorial

This tutorial gives you a **very** compressed starting help to get into the development of community based projects. Attached to this tutorial is a workshop plan which might serve you as a guideline when starting a community based project.

What is special about community based projects?

- people are always at the centre
- it is about people as social beings
- working and learning together
- collective action / shared workload
- inclusive, anti-discriminatory practice with equality at the core
- working in such a way generates the possibility of community and personal empowerment



How to engage people in community projects / how to begin community projects?

- create an environment & use tools where people can communicate, share and participate
- clarify / discover / develop how people communicate with each other
- focus on things that matter to people now....and work on the links to other issues
- be solutions focused but keep a close eye on the process
- have fun!!!

How to develop and sustain community projects?

Local sustainability is THE goal of any community-based project. To ensure sustainability of the projects and it's impacts it is necessary to achieve a common understanding of the community project approach between all

participants. This includes a clear definition of responsibilities and scheduled actions which surpass the project period.

Among all, you need to balance the interests, needs and barriers of all participants and prioritize actions accordingly. As the community building process is agile, your working methods should also be flexible enough to allow adaptation of new ideas, tools and methods and react to changing conditions.

There are a lot of methods to find out topics of common interest and initiate action, e.g. the problem tree. Draw a tree with the problem as the trunk, the possibilities you have to solve it as the branches and the sources of the problems as roots.

Only if you really find out the roots of a problem you will be able to think of actions to solve it.

This might be very different to what you already tried.



Maintain communication

You need to think about a communication strategy from the early beginning, to share, attract people and raise attention. Don't be afraid that someone could "steal" your ideas: make them public to let them grow and develop, let them be copied by others, you will get a lot of information and inspiration back which might be helpful for the development of your projects too.

When choosing communication tools, think of your audience and what do you want to transmit.

There are the classical one-way communication tools to inform your audience, members, etc., such as radio, TV, flyer, poster, newsletter.

Interactive communication tools like Twitter, Facebook, surveys (online, offline) telephone, from kitchen-to-kitchen, events are perfect to get in feedback, opinions, ideas and inspiration.

- express own reflections and ideas clearly
- develop relationships
- provide feedback (answers, reacts) and be open to others' feedback without prejudice, references etc.
- respect attitudes and opinions of others
- be tolerant to different customs and cultures

Develop networks & partnerships

A network is a group of individuals and/or organisations that are linked together for mutual interest. They can be formal (set up with a constitution and designated roles and actions) or informal (simple in formation and practice) and can be established in a variety of ways.

The common feature of all networks, whatever their form, is that they are about relationships and are as much about what you can contribute as about what you can take from the network. Networking is about far more than attending a networking event and shaking hands, it's about being proactive in terms of learning, sharing, contributing, gaining.

Develop action plans

A concise and effective action plan serves as a map to achieve your goals and enables group members to take the straightest road possible toward that goal. An action plan helps you to follow your "red line" and to improve and to reflect on what was already done.

There are several templates available, at least it should list the following:

- Date
- Activity (tasks)
- Who is/what kind of resources are needed?
- Planned outcome
- By When?
- Review / completion comments

Measure success / learning/results/activities

People measure success in different ways and levels.

You need to define at the beginning when you count an action successful, what is your benefit of being successful. Being successful does not only mean that you count numbers and things, that you had fun but also if you created value for others. The example for measuring we give you is the evaluation buddy:

- What ideas, thoughts you got?
- What did you love?
- What you did not love?
- What do you take home?



Celebrate success / learning / results / activities

Recognizing contributions from people and what has been achieved is good for the morale and spirit of the group.

Celebrate regularly, even small achievements to keep to motivation, to reflect on what was done and how you did it, to get feedback and new inspiration, to raise public attention.

European Learning Partnership Project “garden-future.eu”

Have fun together!

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Why and how to blog?

By Christine Graf

About this tutorial

Blogging has become a very important pillar in any (online) marketing strategy.

A blog can be a very powerful marketing tool for your business, your association, your ideas, it's easy to aggregate a lot of loyal fans and supporters.

In combination with social media, your blog will become a valuable tool to market your ideas, to get in contacts with interesting people and stay connected with them.

This tutorial provides you with a brief overview about blogging, list the main points you should consider when blogging and a short video shows how to use this website for writing a blog.

What is a weblog?

A blog is a website where articles (blog posts) are regularly published, much like a diary. Important on a blog is the ability to post comments, and the accessibility of the article via a direct link (Permalink).

Blogs differ in content and form:

- a personal blog
- a co-operate blog, to campaign, to learn
- photo blog
- video blog
- by the use of a device (mobile blog)



Blog software and devices

There are two possibilities:

1. you host the weblog on your server with blog software like WordPress and you are free in your decisions but you need some technical knowledge

2. you use a service, e.g. wordpress.com, but in that case possible changes and adaptations are limited, costs money, and you have to pay for implementing additional features (video, mp3,..)

A blog can be configured to be used

- by one user only
- by many users
- in one language
- in multiple languages

Why blog?

A blog is an easy way to get in contact with your clients, employees, web site visitors.

Informally, you deliver information either about your company, products, innovations, ideas, etc.

In contrast to static web pages, a weblog is dynamic and therefore SEO friendly as search engines “love” regularly delivered new content. Also, a blog allows people to comment on your blog posts and you can comment back, making it a particularly useful platform for meaningful dialogue.

Blogs are about what you want to produce and show to a wider audience, so first of all, you write for yourself, because YOU

- have something to talk about
- enjoy writing
- want to reflect on your thoughts in public
- want to share your ideas and hobbies with others
- want to get in contact with like minded individuals
- want to market your products, build a brand
- want to start a dialogue with your clients
- have an expertise and you want to show and share it
- like engaging in debates with others and want to increase your network

How blog?

It's all about trust!

To build trust, you need to provide detailed background information about you as an author, including a good quality picture of you.

Check your spelling and grammar, link to trustworthy sources, enable sharing via social media and allow comments and discussions to your posts.

Publish regularly, include high quality pictures, videos and indicate content sources when used from others by respecting licenses.

There is a big noise in the web, people are skeptical and suffering from duplicated information and spam. So first of all, what you are writing about should be original, not copied from other sources or redundant.

Think about the basic principles of communication:

- What do I want to show about myself?
- What information do I want to deliver?
- What do I want to achieve?
- What do I want to get back from my audience?

Form matters!

Choose a clear, uncluttered design for your website.

Use oratorical, short, precise headlines. They should contain keywords which characterizing your article.

Pay attention on concise sentences and a clear structure and editing. It makes it easier to read, understand and get in contact with your audience.

Blogs and social media

It is true, that Twitter and Facebook raised a greater attention than web logs, but in a blog you can create a fuller, more complex picture of yourself, your thoughts and competencies.

Your blog should be the central station from where you are sending around your messages by using Twitter, Facebook, Google+ a.o. within a couple of hours.

Services like Twitter, Facebook, Google+ are useful extensions in terms of disseminating your content. The same for media services like flickr, youtube and vimeo.

Introduction to Permaculture

By Andrea Philipp

About this tutorial

Permaculture (constituted from "permanent agriculture") is a concept of integrated thinking and planning which can be applied not only to agriculture and gardening, but basically all areas of our life, and our societies.

The following "red thread story" is meant to help you to acquaint yourself (or others) to the ideas and principles of permaculture.

Permaculture is a dance with nature in which nature is taking the lead..

We are used to taking control over nature, taking ourselves as "the pride of creation" – but why? Isn't nature in itself thriving to be fertile, growing and productive, even without our control and regulation?

Imagine a tree in a forest: it is growing without any humans seeding, ploughing, fertilizing and weeding - and still it is producing so much... Take a minute to think about the products and qualities which come to your mind (possibly note or scribble them down on a tree illustration).

Other than the immediate "products" like fruits, sirup, leaves, tea, medicine, mushrooms, wood for construction, as fuel, for paper... did you consider also shade, oxygen, shelter, compost etc.?

Resilience

I heard this quote in one permaculture course and it gave me quite some food for thought: "Mother Nature does not care whether the hunter kills the beast, or the beast kills the hunter - both make good compost." In natural systems, there are no winners or losers, only shifting balances and cooperation!

And these characteristics help to make them resilient, which means they are capable to respond to a perturbation or disturbance by resisting damage and recovering quickly.

Wouldn't it be great to have more resilient agricultural systems? Less prone to disasters like droughts, pests etc.? By learning from natural ecosystems, permaculture wants to achieve exactly this.

Permaculture principles

1. Observe and interact: By taking time to engage with nature we can design solutions that suit our particular situation.
2. Catch and store energy: By developing systems that collect resources at peak abundance, we can use them in times of need.
3. Obtain a yield: Ensure that you are getting truly useful rewards as part of the work that you are doing.
4. Apply self-regulation and accept feedback: We need to discourage inappropriate activity to ensure that systems can continue to function well.
5. Use and value renewable resources and services: Make the best use of nature's abundance to reduce our consumptive behavior and dependence on non-renewable resources.
6. Produce no waste: By valuing and making use of all the resources that are available to us, nothing goes to waste.
7. Design from patterns to details: By stepping back, we can observe patterns in nature and society. These can form the backbone of our designs, with the details filled in as we go.

8. Integrate rather than segregate: By putting the right things in the right place, relationships develop between those things and they work together to support each other.
9. Use small and slow solutions: Small and slow systems are easier to maintain than big ones, making better use of local resources and producing more sustainable outcomes.
10. Use and value diversity: Diversity reduces vulnerability to a variety of threats and takes advantage of the unique nature of the environment in which it resides.
11. Use edges and value the marginal: The interface between things is where the most interesting events take place. These are often the most valuable, diverse and productive elements in the system.
12. Creatively use and respond to change: We can have a positive impact on inevitable change by carefully observing, and then intervening at the right time.
13. Observe and interact: By taking time to engage with nature we can design solutions that suit our particular situation.

Get the full picture



Take a second to have a look at your notes of the tree "products" again and consider why a tree system is so productive. Try to identify the interrelations, such as fungi as nutrient transporters, birds/animals as seed transporters etc.

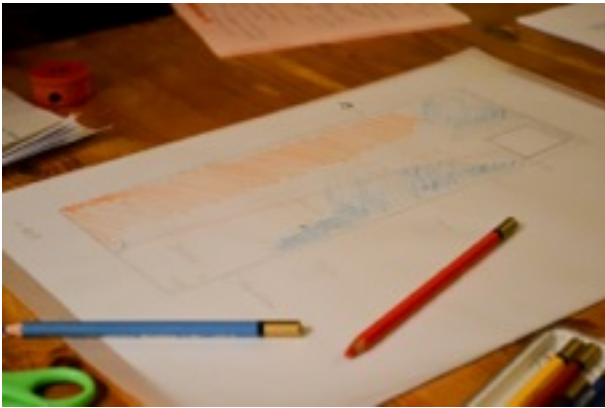
Permaculture is about understanding and imitating the interrelations of natural ecosystems instead of monitoring and manipulating single parts of it (such as soil fertility, pests etc.)

This makes up for the distinction with other agricultural practices:

- while conventional agriculture is fossil-intensive (fuels for vehicles and machines; fertilizers and pesticides),
- whilst organic agriculture is labour-intensive (manual weeding, pest control, processing),
- permaculture is planning-intensive (sectoring, zoning, layering, mixed cultivation, designing resilient systems)!

And good planning implies thorough observation.

Analyze this!



How can we best be part and support such systems in order to make them resilient and still fulfill our needs? Crucial element of permaculture is a needs assessment! This means identifying the conditions and needs of nature as well as our own.

Here are some of the common methodologies for observation, mapping and planning:

Sectoring

Draw a plan of the space which you want to design and map the prevailing conditions - in case of a garden: irradiation and shading, resources (which can also be challenges!) like water, plants, animals, buildings slope of the terrain, quality of soil.

While you do it, consider the factor of time (variations throughout the day, the seasons, the years...)

Zoning

Consider which elements you want and need to have closest to you, and which are less important? From Zone0 (which is You) to Zone1 (the things you need several times a day in your close vicinity) and further on (the herbs, the vegetables, the compost, the sitting place, the tools, etc. etc. possibly to the forest which you only need to visit once a year for cutting wood).

Try and then indicate those zones in a map.

Again, consider the factor of time (variations throughout the day, the seasons, the years...)

Data overlay

Combine and cross-reference your investigations best through an overlay of those maps you have created before. See how you can make your needs fit with the conditions of the site, e.g. if you want to pick fresh herbs for all your meals, thus want to have them close to your kitchen - where is a spot with suitable conditions for herbs? Be creative! The best place could be also along the path from the street to the house and you may place a little basket by the door to pick them when coming home.

Think in qualities, not in products!



We are being brainwashed by marketing about what we should do (i.e. consume!). Consider advertisements like this: “Tired and exhausted at work? Our coffee is what you need!! Get it now at a special offer!”

- Oh really?!? Is this what we need? Isn't it rather the quality of feeling awake and attentive which we are looking for?

Take a second to think which other means could help us to feel better in this respect.

The method of the four-leaf clover may help you in this:

- draw a first leaf and note the product which you thought of first (e.g. coffee),
- then draw a second leaf and write down all qualities this product has (quench thirst, re-activate, opportunity for a chat)
- use a third leaf to note other products which may equally serve the qualities/ needs you have just mentioned (taking a nap, going for a walk, having a tea, taking fresh air by the window, doing physical exercise etc.)
- and the fourth leaf of your clover to add the further qualities of the latter (tea for the taste/water balance, physical exercise for body shape, walk for watching birds, etc.)

Isn't there a wealth of multiple options we have for covering our needs?!

Permaculture is trying to combine these options in a profitable way, creating systems where every element fulfills several functions, and every need is fulfilled by several elements - resilient systems!

Take a second to consider the following:

- Compare monoculture to flower meadows in the variety of needs which they can fulfill
- Compare a water hose to a natural pond in the variety of functions they possibly provide

With permaculture methods, it is even possible to grow food in the desert...

Permaculture in practice



Some examples of where to find permaculture systems “in real life”:

- Mulching
- Mixed cultivation
- Forest gardens / agroforestry
- Chicken tractors
- Vertical gardens
- Urban agriculture
- Organic architecture
- Regional currencies
- Transition Towns
- etc. etc.

This as a starter. There is much more to be learnt from permaculture teachers, from literature and the internet - and from nature, of course!



Enjoy the dance!

Herb Spiral

By Sara Danelon, Kathrin Bacher, Andrea Phillipp

A Herb spiral is a dry wall build with rocks, stones, bricks or any dry material, in a form of a spiral which creates different micro-climates which normally would not be possible in a small space. That's why is it ideal also for a small garden and furthermore it is a beautiful decoration and provides a habitat for a whole range of wild animals as lizards which help in our ecosystem to battle against the pest.

Often you find the spiral close to the kitchen because when you need the herbs for preparing the dishes, harvesting has to be fast and easily.

The different environmental conditions created by the form of the spiral allow to grow different kind of herbs, which need different kind of soil, in a small space. The top of the spiral, where it is sunny, is draining efficiently by using sand and earth. In the lower part the soil is richer with nutrition by using compost.

The bottom of the spiral often incorporates a small pond allowing frogs and toads to breed and creating a moist environment.

Material

- Rocks, stones, bricks for building the wall – starting with the big ones and the higher you get using the smaller ones
- Sand: for mixing with the earth and filling
- Gravel/fill material: for draining and filling the spiral, it can be used old construction material left, small stones found close to the river etc.
- Soil : for filling the spiral
- Compost (for planting your herbs into – preferably homemade so it will be full of living microorganisms).
- Mulch (whatever you have available) e.g. Lucerne, sugarcane, baled grassy mulch hay, pea straw, grass clippings, leaves, etc.
- Herb seedlings; bay tree and vegetable seedlings if planting.

How to build

Select a site about circa 2m across. Take two sticks and knot a piece of a string on them for estimating the circle. The string is 1m in length (radius of 2m). When you signed the arc of the circle on the bottom, use something which makes a mark on the floor e.g. sand or flour.

For avoiding grass to grow into the herb spiral it is opportune to dig the first 20 cm of the circle and recycle this layer.

Fill the hole with gravel/ small stones/ sand for giving to the herb spiral a drainage and prohibiting the weed to grow inside the spiral (grass doesn't like stones and sand). This will be the foundation. Compact this layer by stamping over.

Sign again the circle and the spiral lines- the distance between the lines should be 40-60cm.

Start by filling the middle with old construction material, gravel or what you have creating a small hill.

Lay out the shape of the spiral on the ground with the first row of big stones raising up the gravel hill in the middle and using also a hammer for fixing the first row.

Slowly as the spiral grows in height, infill the wall with gravel first (drainage) and then with earth.

On the bottom good garden earth mixed with compost. As higher as you get leave away the compost and mix the normal earth with sand.

The wall should be inclined lightly towards the middle for being more firm.

When it's finished, water it well and allow it to settle before planting (repeat watering for some days - alternatively you can build the spiral in autumn then start planting the next springtime).

Which plants where

- Plants which like sun and sandy soil: thyme, marjoram, oregano, chamomile
- Plants which like fertilized earth: rosemary, sage, lemon balm, dill, calendula, basil, coriander, fenugreek
- Plants which grow in shadow/sun: chives, parsley, celery, lavage.

Advice

Face the end of the spiral towards north: this will make sure that the micro-climates you are trying to create are in an ideal situation.

Take a sheet of paper and make a design before you start building. It's useful for you to remember the single steps and which material you need for each step.

Don't put mint on the spiral because it will infest the spiral.

Guilds

By Sara Danelon, Kathrin Bacher, Andrea Phillipp

A guild (or ecological guild) is any group of species (plants, animals) that exploit the same resources, often in related ways. Each element of the guild provides a unique set of diverse functions that work well together in conjunction and harmony.

The concept of guild planting represents in permaculture the principle of “stacking”.

This means to multiply the production of a place through integration of components using also the verticality when you plant under trees.

Stacking can also be time based, such as when planting early bulbs such as tulips, daffodils, and hyacinths under fruit trees. When the bulbs are nearing the completion of their spring growth cycle, and their sunlight needs are significantly reduced, the tree become green and give shadow to the plants.

When grouped together different plants with special proprieties in a mutually beneficial arrangement, these plants form a guild help to create an ecological harmony and balance.

Some plants may be grown for food production, some have tap roots that draw nutrients up from deep in the soil, some are nitrogen-fixing legumes, some attract beneficial insects, and others repel harmful insects. For example the fruit trees produce leaves which give nutrition to the plants growing under it.

How to create a guild

In the garden

Let grow your garden in verticality integrating structure in the height and let grow plants on them which like climbing. For example: bind together 4 sticks and make a sort of a hut on which can climb: pumpkins, beans, tomatoes etc.

In the fruit garden

Use also the place under the trees for growing vegetables, medical herbs, wild herbs which you can eat, flowers.

In the wood

Integrate bushes, flowers, berries and nitrogen-fixing trees (robinia also called Black Locust)

Association of plants

Tomatoes & Basil & all sorts of Cabbage & Mustard & Tagetes (Marigold)
Corn & Beans (all sorts) & Nasturtium Cress & Peanut & Pumpkin
Peppers & Salad & Celery & Pumpkin & Pyrethrum
Carrots & Onions & Rosemary & Tomatoes & Leek
Celery & Garlic & Camomile
Cucumber & Sunflowers & Peas & Dill
Onions & Radishes & Comfrey & Fe

Peas & Artichokes & Radishes & Nasturtium Cress
Potatoes & Horseradish & Crotalaria & C
Zucchini & Camomile & Calendula
Carrots & Chives & Basil & Thyme
Beetroot & Onions & Salad & Lemon Balm
Tomatoes & Parsley & Sage
Beans & Sorrel & Peppermint
Cabbage & Chives & Lavender & Spring Onions
Carrots & Salad & Radishes & Dill
Fruit tree & Lavender & Chives & Strawberries & Peppermint & Comfrey & Horseradish & Radishes & Wynn's Cassia & Maku Lotus

Advice

Be creative to find out by yourself good associations of plants!

Let flowering some plants in order that they can seed by themselves because those plants will grow stronger.

Hidden growing potatoes

By Yannick Lopez

This is a very excellent and efficient method to grow potatoes. You can hide potatoes under some straw, branches, soil, leaves, etc, what is in your garden:

1. Search a place in your garden, it doesn't need to be very big to get good results, and clean it from weeds. Keep the weeds for later.
2. Put the potatoes in line, with a distance of 10 cm, in the soil.
3. Cover them with crushed materials, everything you have in your garden: straw, weed, branches, leaves, soil.
4. Center the coverage along the potato line and water it regularly.
5. Later on, depending on the growth of the potatoes, add crushed materials.

This work dont need much effort, you don't have to heap up soil to a "hugel", you can just plant your potatoes after you clean a place from weed. You can use the weed to cover the potatoes, the weed would not grow that fast, but your potatoes.

This method is very efficient and less tiring and does not need any special care.

Hugelkultur bed- Mound culture bed

By Sara Danelon, Kathrin Bacher, Andrea Phillipp

The name hugelkultur comes from the German word "Hügelkultur" and means "mound culture". It's a gardening technique used for centuries in Eastern Europe and Germany.

The practice consists of making raised garden beds filled with rotting wood debris (fallen branches and/or logs).

Benefits of hugelkultur garden beds are:

- water retention: buried wood becomes like a sponge as it decomposes, able to retain moisture and store water for later use by crops planted on top of the hugelkultur bed.
- warming of soil because the decomposing wood will give off heat, as all compost does, for several years.
- creating soil fertility (so it is ideal for sandy soil, small spaces because of the vertical use of the space)
- improving drainage (for compacted soil)
- recycling wood debris for other use

Material

- shovel, wheelbarrow, saw, scissors
- wood debris, trunks, branches, logs, fallen leaves
- manure, kitchen waste or compost (preferably homemade so it will be full of living microorganisms)
- mulch (whatever you have available) e.g. fallen leaves, baled grassy mulch hay, pea straw, grass clippings, etc.
- seedlings for planting.

How to build

For avoiding grass growing in the hugelkultur it is opportunely to dig the first 20 cm of the space. The area should be at least 2m for 1,5m. The height should be 1m.

But first the big and large material and then the thinner one: start with trunks and then use branches, leaves.

Water all layers. The last layer is compost, manure, earth.

Cover all with mulch and then you can plant.

What to plant

In the first two years the hugelkultur has lots of nutrition, so you can plant those vegetables which need a fertilized dirt: zucchini- courgettes, pumpkins, squash, tomato, broccoli, cabbage

On the top of the hugelkultur bed it will be dryer as on the sites: it's good mulching more on the top and watering sometimes.

On the sides you can plant salad, mustard, fennel, celery, garlic, onion, chard, carrots, spinach

Advice

Position of the hugelkultur: from north to south.

The sustainable use of water

By Sara Danelon, Despina Vasiliadou, Denis Bluemel, Liesma Savica, Christine Graf, Yannick Lopez, Roger Davies, Pedro Carrana

About this tutorial

There are many things you can do to make your garden more sustainable and the responsible use of water is one of the most important elements. We gathered examples of the thoughtful use of water in traditional gardens and those with a strong focus on permaculture principles.

Wells

Wells are widely and traditionally used for garden watering as they help people save money. They can be found in yards or larger fields.

Cane, wicker, clover, moss and rushes, bramble, poplars are plants indicating that water is in the ground. If those plants are dry in summer, then the water is near the soil surface and not abundant. If those plants are dense and green, then the water is deep and abundant. Another indication of ground water is muddy soil.

To be sure there's ground water, we dig a hole 1 ½ meters deep, we spread some oil on the inner part of a metal container and place it upside down in the hole. We cover it with soil. Next morning, before sunrise, we dig out the container and if there's moisture on its wall, then there's ground water, if there are drops on its walls then there's water in big quantity. Instead of the metal container we can put a dry sponge in the hole which we cover with grass and sticks. If next morning the sponge is wet, then there's ground water and we can make a well there.

How to maintain a well

To prevent iron-reducing bacteria and/or mineral incrustation from accumulating, we should:

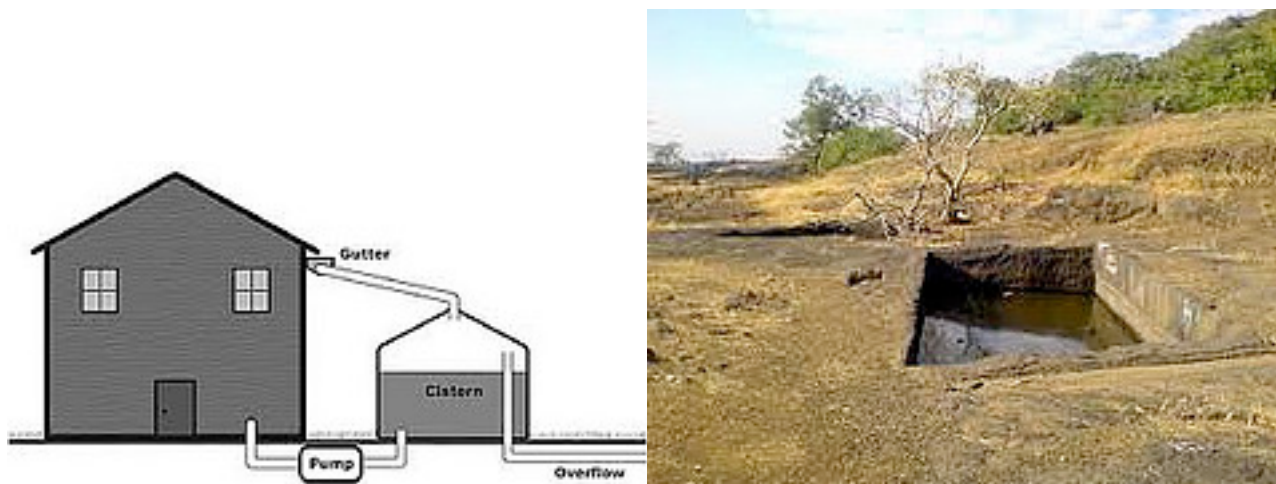
- Keep continuous records of well operation by measuring and recording its performance.
- Never allow the pumping level to drop below the top of the screen as exposure to air (oxygen) will accelerate the buildup of mineral deposits and incrustation.
- Annually chlorinate the well, preferably in autumn because many bacteria grow best in still water during the winter.

Finally, we have an electric pump installed but cheaper and more sustainable will be a solar driven pump.

Cisterns

We know it from the Romans, but also nowadays, cisterns are widely used to gather rain water to be used for household needs and gardens.

Rain water is considered the best for vegetable watering as it doesn't contain any salts.



Rain water collection

There are also regions in Europe where it rains a lot and therefore the area has plenty of water, also from rivers and springs.

The need to irrigate gardens and fields is limited to short periods in summer, sometimes there is, rather, the opposite problem ;-)

For the driest periods, or in areas the more distant from waterways we try to collect rainwater and create a reserve, building tanks, ponds or tanks of other types.

Water management in a Welsh forest garden

Water management in this area is primarily concerned with flood defense. Our community garden has no natural rainwater collection at this time, though this is planned for the near future when we have structures with water run-off to collect in water butts.

When the land was donated to us it was heavily wooded with mixed deciduous. Our first task was to fell enough trees to raise light levels and let direct sunlight into the garden. Many trees were retained as they act as consumers of water absorbing ground water and preventing loss of soil through erosion. The trees also bring up nutrients from the deep soil returning it to the surface through leaf fall.

The trees, therefore, form part of the water and soil management of the garden.

The main idea behind the forest garden is utilization of three dimensional space. At the lowest level we plant vegetables and herbs, at a higher level tomatoes and beans, higher again soft fruit, then fruit trees and finally nuts (hazel and sweet chestnut). In this way we can increase the production per square meter and encourage companionship planting where one plant assists the development of another.

Ditches

Using the channeled water from rivers and springs is also a common way to irrigate your garden. Ditches are channels that carry water from a spring or a river towards the towns, were originally used primarily to derive the motive power for mills and workshops. Usually the water is returned to the river downstream.

Drip irrigation systems

No matter which water source one uses, automatic watering is applied because we:

- save time, work and cost (15-20% or more in water savings).
- water according to the plants needs
- get healthier plants and crops

A drip irrigation system is the most efficient and usual method because it delivers precise amounts of water slowly and evenly at the plant's roots, eliminating water waste. The slow, consistent application of water at or near the plants' roots reduces weeds and plant disease as we avoid wetting the plants' leaves which usually get infected by diseases when they get wet.

The system is adjusted according to temperature, season, plant changes and checked regularly. In places/times with high temperatures we water at early morning as water lost to evaporation is less in the early hours or very late in the evening.

We make shallow ditches in our garden which will help maximum water absorption.

You can build small and simple irrigation systems by your own by using recycled materials.

Drip irrigation in dry areas



At the mediterranean, you have areas with very dry summers, argilous soil and often slightly hilly landscapes.

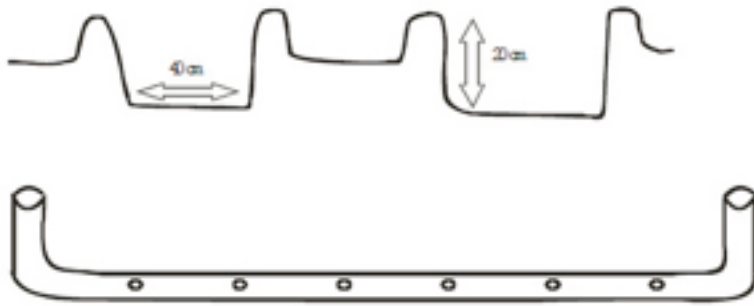
Water is limited and often forbidden to use tap water for plant irrigation.

Therefore, we need to imagine a technique for an economic use of water to maintain a good soil moisture.

Here is the procedure:

- Terrace the ground and bound it with wooden planks to prevent water and soil runoff
- Dig ditches, 40 cm wide and 20 cm deep.
- Install a tube, approx. 10 cm in diameter, then perforate it every 30 cm and let it come out at the ends in order to insert a garden hose.
- Sprinkle on the bottom of the bed a layer of dung or compost and cover all with straw.
- Plant vegetables at the bottom and companion plants (e.g. dwarf beans, tagetes or other small flowers)





Processed waste water

Watering with processed waste water is a system applied in some regions, especially for extended pieces of land and cultivations. The water undergoes a special process, it is decontaminated with Ultra Violet radiation (UV), then, through pumping and pipes, it is channeled to tanks and from there it passes into irrigation networks.

Productive Ecological Sewage Water Treatment Systems

Beware of contaminated water which is killing more than 8 million people each year because of water related diseases like Diarrhoe, Cholera, Typhus etc.

We distinguish between blackwater which is contaminated by human faeces and greywater which is the waste water from showers, kitchens, sinks, etc.

So first of all: try not to create blackwater. Better use compost toilets, and reuse greywater!



Second, deal safely with reuse of waste water and in an ecological manner. Try to integrate the reuse of water into your daily life. In contrast to conventional systems, which are intensive in engineering and costly for the

construction, maintenance and repairs, better get inspired by ecosystems for alternatives which are cheap and self-maintaining.

One such alternative is the:

Wetland Ecological Treatment System

- uses living organisms like plants, fungus, bacteria, microbes
- for cleaning the water,
- needs no concrete or tanks, but uses gravity and solar energy
- never breaks down, but adapts and evolves, thus even gets better with age
- embodies high biodiversity with many wildlife habitats
- little cost after initial investment

Another alternative system is the Fossa Bioseptica- Evaporation Bassin: a Brazilian design for transforming a septic tank system into a productive biological treatment system.

Turning waste into resources

Wetland Ecological Treatment Systems help to turn the sewage water into plant biomass, so create many valuable resources:

- Building material: Timber, bamboo, for thatched roofs
- Food: Fruits, nuts, animal fodder, vegetables, fish
- Fuel: Firewood, ethanol crops, biogas

Conclusion

With a reasonable handling of sewage water we can solve many problems at once - improve the hygienic situation and sanitation (e.g. in slums), avoid eutrophication, avoid fish kill, save energy, save money, grow resources, gain independence.

A garden layout

By Despina Vasiliadou

I read an interesting article in “Ktima kai Kipos” (Farm and Garden) magazine, published with the “Kathimerini” newspaper. The article was about how to organize a 100 square metres garden, applying rotation planting that could provide necessary vegetables to a 4-member family and cover their annual needs. The authors of the article suggest 18 beds, 4m long and 1m wide each (see attached drawing. On the drawing, the beds are numbered 1-18)¹.

There follows a tutorial I've made after reading the article.

Where to lay the garden

Your garden should be at a sunny and sheltered place (protected from strong cold winds).

How to lay out the garden

- we make some beds on the left and some on the right leaving a space about 1m wide in between
- we leave a space about 25 cm wide between the beds so that we can walk without stepping on the vegetables
- we plant flowers around the garden, suitable for attracting useful insects and repelling harmful ones

Which vegetables to choose and how to cultivate them

Every time the cultivation of a vegetable ends, we should cultivate another one that doesn't belong to the same family, doesn't demand the same nutritional elements.

Vegetables that can't be processed and should be consumed immediately (e.g lettuce) should be planted successively every 15-30 days so that we get them gradually, not all of them at the same time. For that reason it's good to make seedbeds and have the vegetables ready for transplanting.

We choose the vegetables according to climate conditions and their biological circle.

What to cultivate the first three months (November-December-January)

- bed 1: plant garlic cloves, at beginning of November, which we'll crop after 150-180 days
- bed 2: sow rucola in half the bed beginning November in other half beginning December. We crop after 2-3 months
- bed 3: plant lettuce starting beginning November and repeating planting every 20 days. We crop in 60-90 days
- bed 4: plant endives. We crop in 70-90 days
- bed 5: plant spring onions, beginning November half bed, the other half beginning December. We crop in 50-70 days
- bed 6: we sow peas beginning November which we'll put into freezer. We crop in 4-5 months
- bed 7: we plant onions in January which we'll harvest in 5-6 months
- bed 8: we sow spinach beginning November in half bed, in the other half after 15 days. We crop spinach after 80 days.
- bed 9: we plant celery, parsley, dill, basil

¹ “Ktima kai Kipos” magazine, 6th issue/November-December 2012, “Kathimerini” newspaper

- bed 10: we plant cabbages beginning November, we'll crop them in 120-180 days
- bed 11: we plant vascular plants for salad, every 20 days starting beginning November. We crop after 35-55 days.
- bed 12: we plant broccoli beginning November and a second planting, beginning December. We crop after 90-120 days
- bed 13: we plant cauliflower, we crop after 100 days
- bed 14: we sow broad beans beginning November, we crop after 5-6 months
- bed 15: we sow peas which we'll consume fresh. We crop after 4-5 months
- bed 16: we sow radishes on half bed, on the other half a second sowing after 30 days. We crop after 1.5 months
- bed 17: we sow spinach again as in bed 8
- bed 19: we plant mangels beginning November, we crop after 60-90 days.

What to cultivate the next three months (February-March-April).

- bed 1: stays as it is. We'll crop garlic bulbs in May
- bed 2: we plant lettuce in March every 15 days
- bed 3: we sow chicory in March, we crop after 4-5 months
- bed 4: after we have cropped the endives we sow carrots. We'll crop them in 100 days
- bed 5: we have cropped spring onions, so we can now sow spinach. We'll harvest it in 60-90 days
- bed 6: stays as it is. We'll freeze the peas we'll harvest
- bed 7: stays as it is. We'll crop onion bulbs
- bed 8: after we crop spinach we'll plant potatoes in March. We'll harvest in 90-120 days
- bed 9: stays as it is
- bed 10: stays as it is. In April cropping of cabbages ends
- bed 11: we plant potatoes
- bed 12: stays as it is. We'll continue harvesting broccoli until end of April
- bed 13: stays as it is. We'll continue harvesting cauliflowers until end of April
- bed 14: stays as it is. We'll continue harvesting broad beans until end of April
- bed 15: we crop peas and consume them fresh, in March
- bed 16: we cultivate both, lettuce and spring onions, planting three times, every 15 days starting mid-February
- bed 17: we sow pig weeds in March, we'll crop them in 70-90 days
- bed 18: we sow beetroots in February, we'll crop them in 100 days

What to cultivate the next three months (May-June-July).

- bed 1: we plant climbing tomatoes, we'll crop them in 75-100 days
- bed 2: we plant climbing cucumber, we'll crop in 40-70 days
- bed 3: stays as it is, we crop chicory in June
- bed 4: we crop the last carrots end of June
- bed 5: we plant potatoes in July which we'll harvest in winter after 90-120 days
- bed 6: we also plant tomatoes but in May so that we get an earlier crop in 75-100 days
- bed 7: after we crop onion bulbs we sow climbing beans, at beginning of July, which will be consumed fresh after 70-90 days
- bed 8: stays as it is. Potato crop will end in July
- bed 9: stays as it is, we can renew herbs
- bed 10: we plant onion springs twice, once in May, on half the bed, and once in June on the other half. We'll crop them in 55-70 days

- bed 11: stays as it is. We harvest potatoes in July
- bed 12: we plant tomatoes on a third bed, at the beginning of June for more crop
- bed 13: we plant peppers twice, on half bed beginning of May, on the other half in mid-May. We'll crop them in 70 days
- bed 14: we plant leaks in June, we'll crop them in 100-120 days
- bed 15: we plant aubergines at the beginning of May, we'll crop them in 70-90 days
- bed 16: we plant courgettes at the beginning of May, we'll crop them in 45-50 days
- bed 17: we plant potatoes here too so that we get as much crop as possible in winter
- bed 18: we plant sweet corn in June, we'll crop it in 60-80 days

What to cultivate the next three months (August-September-October)

- bed 1: stays as it is as we crop tomatoes until October
- bed 2: stays as it is as we crop cucumbers until October
- bed 3: we sow beetroots in August, we'll crop them in 100-120 days
- bed 4: we sow spinach at the beginning of August which we'll crop in 60-70 days
- bed 5: stays as it is as we crop potatoes until end of October
- bed 6: after we have cropped all the tomatoes we sow radishes in October
- bed 7: stays as it is as we crop beans in September and October
- bed 8: we plant red, green lettuce, iceberg lettuce in August so that we have them in autumn
- bed 9: we renew our herbs
- bed 10: we sow spinach like in bed 4, but in October for a successive crop
- bed 11: we plant broccoli twice, in half bed in August, in the other half at beginning of September
- bed 12: we plant cabbage twice, in half bed beginning of October, in the other half a month later
- bed 13: we sow carrots in October
- bed 14: stays as it is, we crop leaks until October
- bed 15: after aubergines crop has finished, we plant both, lettuce and spring onions in September
- bed 16: In September we sow rucola again
- bed 17: stays as it is, we continue cropping potatoes until October
- bed 18: we crop the last sweet corns at the end of August and then in October we plant garlic cloves that we have kept

Advice

We prefer climbing vegetables for saving space.

In northern countries, people should opt for early fruit varieties so that the vegetables are cropped before cold arrives.

We prefer planting to sowing for quicker harvests and we should space out vegetables that we have sowed.

We shouldn't grow the same vegetables on the same land continuously, we should change them.

If vegetables are planted densely, they'll give a bigger crop but they'll be smaller.

For alternation in cultivation we should consult an agriculture scientist.

We use a greenhouse-like plastic tunnel to protect sensitive vegetables in case of extreme cold.

The extent of garden, number of beds and vegetables described above can vary according to individual preferences and climate conditions. The above is only an example.

Creating our organic garden

By Despina Vasiliadou

The Second Chance School students created the following tutorial with the help of Mr. Dimitris Mamalos who is an organic vegetable professional producer.

The garden soil

It must have remained for at least 3 years without pesticide sprayings, without chemical fertilizers and without rat poison (an analysis of the soil is recommended). If we want to get rid of rats, we should put traps round our garden. When we are ready to plant first we dig the soil mixing it with manure (horse or cow manure is the best as it is light enough), then we let it rest for a couple of days and then we plant our vegetables leaving a space of about 20 cm in between. On that space we can plant insect repellent flowers like basil, lavender, marigolds, calendulas.

Fertilizing

Our garden doesn't need more fertilizing, the manure is enough, just repeat adding manure every 3 years. However, if we find it necessary to fertilize our plants, we could add some organic fertilizer once more after the initial manure, when the plants have reached half of their height.

Watering

We water as often as necessary and always taking into account environmental temperature.

How to cope with diseases

We can use copper and sulfur formulations (e.g copper sulphate), water and soap solution (especially against aphids) or beneficial insects which eat harmful ones. There are certain species of beneficial insects that penetrate into harmful insects' body or into worms and they lay their eggs inside them. In this way, on one hand harmful insects die and on the other hand beneficial ones multiply. We should get these beneficial insects from organic certified merchants. BUT, the most efficient way to cope with diseases is daily, thorough inspection of plants so as to find out possible infection on time and take measures while it is still early enough. In organic cultivation the “medicines” we can use are not so drastic as chemical ones and can save our plants while the disease is still at its beginning. Beneficial insects are more efficacious if our garden is in a greenhouse.

How to exterminate rats that eat our plants and their roots

With traps only.

Rat poison is forbidden because in case of rain or with watering it dissolves and passes in the soil.

A safe way to use rat poison: we open a cylindrical tin, trying not to cut away the lid, and empty it from its content. We put rat poison inside, preferably on a plate for more safety, we close the lid and we open a hole in the lid, wide enough for rats to pass through.

We place the tin horizontally on the ground. If it rains, the poison will not dissolve as it is inside the tin, placed on the plate.



What kinds of plants we should opt for

Climbing plants, if possible, as we save space and also because climbing plants usually give bigger fruits. However, climbing plants need pruning of their first flowers. The second flowers will give more and bigger vegetables.

To sow or to plant?

We opt for sowing organic and local, traditional seeds which we can get from organic seeds merchants. We sow either on the garden directly or we make seedbeds earlier and have our plants ready to be planted so as to crop early enough. Traditional, local seeds will ensure healthy plants and a good crop as those seeds have been used for years and come from plants that flourish in the local soil and climate.

Greenhouses for amateur gardeners

By Despina Vasiliadou

In recent years, greenhouses have become more and more popular and have contributed a lot to the progress of cultivation techniques.

Greenhouses vs open gardens

Greenhouses protect plants from extreme weather conditions, give us the possibility to consume vegetables throughout the year and in organic culture they can ensure suitable conditions for “useful” insects which are used against diseases. Those insects cannot escape when they are in a greenhouse, in an open garden they will.

Construction

It would be wise to consult specialists regarding size, materials and cost. However, a small greenhouse can be constructed by ourselves.

Where to place the greenhouse?

On a sunny area (sun is needed all day), protected from north, cold winds and where the land is slopy so that water is well drained.

Temperature

The temperature inside the greenhouse should be regulated according to the plants needs and it should be 2-4 degrees higher during the day. A thermometer is necessary in the greenhouse.

Ventilation

The greenhouse should have openings at its sides to let air in, especially in summer, and protect plants from drying out. Also, adequate ventilation prevents humidity accumulation which can cause fungi and other diseases.

Reasons of vegetable problems

By Despina Vasiliadou

Prevention is always better than cure, so the table below could help a gardener act before it's too late.

Leaves

Appearance	Reason
Abraded	
at foothold	rabbits
with small, round holes	earwigs
with big holes and traces of slime	slugs/snails
leaves + flowers + eyes	earwigs
Deformed	
mostly of greenhouse vegetables	vaulter
Molted	
with yellow blemishes and thin spider web	mites
with silver blemishes and black spots	thrips
with rough blemishes	nematodes
Discoloured	
light green leaves, yellow between the nerves	chlorosis
with white speckles	white rust
white speckles and dust texture	mildew
black speckles and pink mycelial texture	fusariosis
black speckles and sticky honeydew	mealy
brown / orange-brown speckles	rust
grey, soft speckles	botrytis
orange-brown speckles and mycelial texture	white rust

Stalks

Appearance	Reason
white mould round stalk foothold	sklirotonia

Appearance	Reason
bulky stalk	nematodes
vegetable dying, stalk foothold partly abraded, dark grubs on the ground	titoula larvas
vegetable dying, extremely dry period, no extra watering	drought
vegetable dying, blemishes on leaves and stalk	fusariosis
vegetable dying, brown stripes on stalk	verticillium wilt

Roots and Tubers

Appearance	Reason
black roots, black blemishes on leaves and stalk	fusariosis
brown roots, stalks with brown stripes	verticillium wilt
deformed, bulky roots	cabbage cancer
abraded roots with small holes	wireworms

All about traditional seeds

By Despina Vasiliadou

How to keep traditional seeds?

1. Let the best* of the first fruits overripe on the plant, preferably one near the plant's roots
2. Let the best* of the last fruits overripe on the plant, as this one's seeds will give us plants which can stand colder temperatures.
3. Put the seeds in a bowl and rinse them with water. We should throw away seeds that float as they are sterile, and keep the ones that go to the bottom.
4. Dry the seeds in the shade and not under the sun as it will burn their tiny vessels. Spread them on a piece of paper for about a week until they are totally dry.
5. Keep seeds for 3 years maximum. After 3 years, seeds usually go bad and they rot when sowed, they don't germinate.
6. Always put labels with a short description and date of storage.
7. Register your seeds.

*Keeping the best fruit seeds leads to a gradual fruit optimization.



Organic seeds

"The seed is the source of life, therefore it must be spread and multiplied freely."

Our visit at [Bioporos organic garden](#) helped me understand basic ideas regarding vegetable cultivations and what I heard Mr. Vlassis say will definitely come into my mind when I am about to buy and consume vegetables.

As a results, I wrote this short tutorial which I hope you'll find interesting and useful.

Organic vs conventional vegetables

- conventional vegetables can be genetically altered, organic can't
- conventional vegetables are very sensitive to diseases, organic aren't
- seeds from conventional plants can't be reproduced, organic seeds can
- consumers can't always be sure of the quality of conventional vegetables, organic are always certified

Why use organic seeds in our garden

- to be sure of what we eat

- to be independent of multinational companies and their genetically altered products/chemical pesticides/fertilizers
- to contribute to the well-being of our environment and planet
- to save money

How to help seed spreading

- take part in seed exchange events
- exchange seeds with people you trust
- help campaigns against the import of genetically altered plants

How to keep seeds from our vegetables

Let the best, fruit on the plant overripe, take out its seeds, let them dry and keep them in a dry, dark place until next year.

Seedbed making



January is towards its end, there is only one winter month left, February, so wise gardeners should prepare their spring planting. A good and cheap way to grow our spring vegetables (tomatoes, cucumbers, courgettes, peppers e.t.c.) is to make seedbeds and have our plants ready for transplanting in Spring.

When to sow the seeds?

- in February – March in warmer countries
- in April in less warm countries

Suitable season for transplanting

- after mid-April in warmer countries
- in May in less warm countries

Where to sow the seeds?

- in coconut tablets which have the advantage of being both, little pot and soil (2 in 1), and when the plants sprout we plant the tablet directly (as it is together with the sprout) in the earth. Coconut tablets need to absorb enough water before they can be used, so we lay them on a tray, we pour water on them, we wait until they bulge, then we can sow the seeds in them.
- in any small pots (pots we can buy, yoghurt tubs, plastic cups, cartons we have cut, e.t.c)
- in sowing trays

The procedure

1. Fill the pots with soil (we don't need soil if we use coconut tablets)

2. Put a couple of seeds in each pot. If the seed is big, one is enough
3. Add a thin layer of soil on top of the pots
4. Spray water on the pots trying not to push seeds very deep in the soil
5. Put a label on each pot so as to know what species we have sowed
6. Cover the seedbed with transparent plastic or glass. The cover should be placed at a height of 2.5-3 cm over the seedbed to let the plants rise, so we can put stones, bricks, pieces of wood (whatever else we can think of) round the seedbed, on which the plastic or glass will be placed
7. Cover the glass/plastic with a dark cloth or newspaper so that the seedbed stays in dark. Another option is to keep the seedbed somewhere dark (e.g in the cellar)
8. Store the seedbed in a warm place: our kitchen, on an electric blanket, on a warm mat e.t.c. Our seedbed needs a steady temperature of around 22 °C.
9. Water the seedbed when we feel the soil dry and we avoid pouring water on the new, tiny sprouts.
10. Remove the dark cloth or the newspaper from the cover when the seeds sprout because the sprouts need light for photosynthesis.
11. When the sprouts grow a bit and where we have two plants, we remove the weaker sprout and leave the stronger one only.

When to transplant the plants?

We wait

- until our plants reach a height of at least 15-20 cm, then we can plant them in the garden or we wait until the sprouts have their 3rd leaf (courgettes), 4th leaf (tomatoes, peppers), 5th-6th leaf (aubergines)
- for quite warm environment temperature before we transplant.

If the temperature outdoors isn't warm enough we can transplant our new vegetables in bigger pots as they need space to grow, and transplant them in the garden later.

What to do with surplus seeds?

Keep them wrapped in dark, not transparent bags, in a dry place, at a temperature of 4 degrees (maybe in the fridge). Make sure they don't get wet as this will shorten their lifetime.

If we notice yellowish leaves on the sprouts, then this means that they lack nutrition and we should add some fertilizer, preferably organic.

Therapeutic herbs and plants

By Despina Vasiliadou

Angelica archangelica

English: angelica | French: angéline officinale | German: Engelwurz

Therapeutic properties

Digestive, antispasmodic, antibacterial, antifungal, diuretic, stimulant. It regulates menstruation and relieves from its pains.

How to use

We make infusion or decoction from the roots or the seeds. We drink 1 – 2 cups a day after meals. Its use should be interrupted every 2 weeks.

Cucumis sativus

English: cucumber | French: concombre | German: Gurke

Therapeutic properties

Diuretic, tranquilizer, hair tonic, astringent. It helps intestine function and it's against renal lithiasis, cholelithiasis, gravel, nephritis, arthritis.

How to use

We eat it. We can use the slices or pulp or porridge for skin and hair care.

Cynara scolymus

English: artichoke | French: artichaut | German: Artischocke

Therapeutic properties

It reduces cholesterol and triglycerides, it's against arteriosclerosis, rheumatism and liver disease, it's blood purifying.

How to use

We boil the roots with white wine and we drink. For rheumatism and neuralgia treatment we can use the tincture or the extract of artichoke. The decoction from leaves or stalks can be used for gargles against tonsillitis. For liver disease treatment we can drink 3 cups of decoction per day. The extract should be used on a doctor's prescription and the tincture in a dosage of 6-9 gr, 3 times a day.

Agropyron repens

English: common couch | French: chiendent commun | German: kriechende Quecke

Therapeutic properties

The tisane from common couch is a medicine known worldwide as emollient, refreshing, diuretic and inflammatory especially for intermittent fever, gastrointestinal infections, urinary tracts infections, liver and kidney colic.

How to use

We can make alcohol of an excellent quality by fermenting or distilling the roots. Any proportion is harmless. We can drink the extract, the decoction (20-30 gr in 1 litre of water + a little honey), the juice (from 30-100 gr of young leaves and stalks). We can also let 2 spoonfuls of sliced root soak for a while in 1 litre of water, then we boil for 10 mins and drink 1 glass per day.

Adiantum capillus-veneris

English: maidenhair | French: capillaire | German: Frauenhaar

Therapeutic properties

Antitussive, expectorant, demulcent in case of dry cough and respiratory infections, it cures dandruff and hair loss.

How to use

For respiratory infections we can drink the infusion. For dandruff treatment we can massage hair roots with cold decoction every day for 2 weeks.

Althaea officinalis

English: marsh mallow | French: mauve | German: Malve

Therapeutic properties

Antitussive, emollient, inflammatory. It relieves muscular pains, effaces bruises, mellows aposthymas, combats gingivitis, mouth ulcers and constipation. It's very effective against stomatitis, pharyngitis, stomach and intestine ulcer.

How to use

We drink the decoction from leaves and flowers against infections and cough (3 cups a day). We can also add decoction in bath water against skin irritations, we can gargle decoction against gingivitis, mouth ulcers, tooth aposthymas. For a more drastic decoction: we boil 100 gr of root in 10 cups of water, let evaporate to its half and filtrate. We use it against internal infections as well as externally against bruises and muscular pains (we spread it on the skin). We can take a sachet of marsh mallow root powder dissolved in a little water every day against constipation.

Aloe vera

English: aloe | French: aloès | German: Aloe

Therapeutic properties

Aromatic, stimulative, laxative, apertizing and digestive in small dosage, emollient and vulnerary.

How to use

The yellow bitter juice that flows from leaves when we cut them can be dried and used as a laxative. The leaves themselves when cut and peeled off their membrane can be placed on skin burns, insect bites, cuts. They have an antifungal, antibiotic and inflammatory effect. Aloe is extensively used in cosmetics industry.

Anethum graveolens

English: dill | French: aneth | German: Dill

Therapeutic properties

Diuretic, digestive, against colics, vomit, stomach disorders.

How to use

For decoction we boil 2 tea spoonfuls of dill seeds in 1 litre of water for 10-15 mins. We drink half a cup once or twice a day.

Juniperus communis

English: juniper | French: genévrier commun | German: Wachholder

Therapeutic properties

Against wheeziness, gout, rheumatism. It's a good digestive, tonic.

How to use

Massage with the juice or tincture from fruits relieves from joint pains. Eating the fruits helps with indigestion and burning them helps with respiratory problems. It also decontaminates the air in closed spaces.

Achillea millefolium

English: yarrow | French: millefeuille | German: Schafgarbe

Therapeutic properties

Diaphoretic, febrifuge, hemostatic, inflammatory, menstruation regulating, heart stimulative, anti-rheumatism. Against colitis, gastrointestinal diseases, diabetes at its start.

How to use

We drink 3 cups of infusion for quite a long period. We can use the infusion in dressings on the skin, massaging the hair, in a steam bath for the skin greasiness decrease. Inhaling infusion vapour helps with respiratory problems.

Valeriana officinalis

English: valeriana | French: valeriane | German: Baldrian

Therapeutic properties

Sedative in case of nervous tension, insomnia and stress. Antispasmodic, headache relieving, reduces high blood pressure, calms down hysteria, cough and asthma.

How to use

It must be used for one week only then interrupted for 2-3 weeks. We can use the decoction or the maceration from the roots, we drink 2-3 cups a day. Tincture: 5-10 drops in some water. Small doses of decoction or maceration relieve from headaches, calm the nervous system and fight insomnia.

Hypericum perforatum

English: common St John's wort | French: millepertuis perfozé | German: Johanniskraut

Therapeutic properties

Known as “the” herb for healing wounds. It is considered to be very effective for neuralgia, depression, thrombosis, rheumatism, diarrhea, it's a good hemostatic, spasm soothing, revitalising.

How to use

The essence works wonders in healing wounds, burns, bruises, bites, skin eruptions. We massage or spread. For all the above problems we can also apply chopped leaves poultice on the skin. The herb infusion in alcohol as well as the distillate (eau-de-vie-rouge) are widely used. A cup of warm decoction every morning is really beneficial.

Ocimum basilicum

English: basil | French: basilic | German: Basilikum

Therapeutic properties

Stimulative, tonic, antispasmodic, antiseptic, expectorant, against dizziness and migraine.

How to use

It can be dried and pulverized. We can drink the infusion, we can use the tincture from fresh leaves: mixed with wine it becomes a good tonic, mixed with oil it is against constipation, a few drops of tincture act against headaches. Basil powder will help sneezing thus curing rhinitis.

Rubus fruticosus

English: bramble | French: ronce commune | German: Brombeere

Therapeutic properties

Diuretic, anti - diabetic, anti - diarrheal.

How to use

The infusion or decoction from leaves, boiled with a little honey or vinegar, can be used for gargles against pharyngitis, sore throat, gingivitis, mouth ulcers. It will facilitate birth (1 cup per day from 6th month of pregnancy). The sirup from fruit is an excellent anti - diarrheal (we boil bramble juice with double quantity of sugar until it thickens).

Syzygium aromaticum

English: carnation | French: oeillet | German: Nelke

Therapeutic properties

Carnation oil is a strong antiseptic, it ceases toothache, aborts vomit and nausea. It's an effective digestive, antispasmodic, anti cancer.

How to use

We use carnation oil or decoction for wounds, insect bites, toothache. For nausea we can drink some water with a few drops of carnation oil. Alcoholic drinks with a few drops of carnation oil become good tonics.

Portulaca orelacea

English: purslane | French: pourpier | German: Portulak

Therapeutic properties

The whole plant is useful except for its roots. It's sedative, diuretic, against biliary stones, colitis and amoebas.

How to use

The juice can be used against biliary stones. Daily consumption of the plant in salads helps curing colitis and amoebas.

Anisum vulgare

English: anise | French: anis cultivé | German: Anis

Therapeutic properties

Diuretic, apertizing, digestive, expectorant, antispasmodic, emmenagogue.

How to use

The oil extracted from seeds can be used slightly diluted. It's a very effective expectorant and lice and other parasites repellent. We can also use the decoction, infusion, maceration and tincture. We make anise maceration by soaking seeds in water for a few hours, then we can take a tea spoonful 3 times per day.

Rosmarinus officinalis

English: rosemary | French: romarin | German: Rosmarin

Therapeutic properties

Tonic, antispasmodic, emmenagogue, vulnerary, antiseptic, anti rheumatism, headache killer, carminative, helps with indigestion.

How to use

We should be careful with rosemary consumption as in big quantities it might be poisonous. The flowers and leaves are very effective against asthma, flu and pertussis. Poultices and washings are good for the skin. Rosemary in wine is a good heart stimulant, boiled with wine helps people suffering from insomnia. Powder from leaves heals skin wounds, the essence is moth repellent. The decoction can be used for healing gangrene ulcers (we put it on ulcers), rheumatism and swellings (we massage aching parts with it). Rosemary tea prevents fainting. Rosemary flowers clobbered with sugar until they become a paste help with dizziness. Rosemary fresh leaves put on an abscess make it ripen quickly. A piece of cotton wet with rosemary juice and put in the ear will relieve earache. For bruises, wounds, skin eruptions we can use rosemary ointment whereas gargles with infusion will heal mouth ulcers.

Amaracus dictamnus

English: dittany | French: dictame | German: Eschenwurzel

Therapeutic properties

Tonic, stimulant, antispasmodic, vulnerary, sedative, diuretic, it fights amoebas.

How to use

We can use the decoction or infusion (we drink 2 cups a day). Poultices help heal wounds, ulcers, abscesses. Chewing leaves relieves toothache and headache.

Mentha viridis

English: mentha viridis French: menthe | German: Minze

Therapeutic properties

Tonic, stimulant, antispasmodic, diuretic, diaphoretic, against indigestion, vomit, tachycardia, urinary retention, vertigo.

How to use

Washings or poultices are good for skin diseases, the dressings relieve headache. Spearmint tea prevents vomit, spasms, cramps, colics (1 tea spoonful every so often).

Eucalyptus globulus

English: eucalyptus | French: eucalyptus | German: Eucalyptus

Therapeutic properties

Eucalyptus oil is antiseptic, antispasmodic, febrifuge, disinfectant, deodorant, insect killer, vulnerary. It is used for curing respiratory inflammations, cough, asthma, sorethroat. The leaves have antibiotic properties and can be used for decoction making and steam inhaling.

How to use

5-10 drops of eucalyptus oil for chest massage or in boiling water for steam inhalation. We can also boil eucalyptus leaves and inhale the steam which helps get rid of colds. A hot bath with boiled leaves added in the water will also relieve from cold symptoms. We can drink decoction or infusion.

Helianthus annuus

English: sunflower | French: helianthus | German: Sonnenblume

Therapeutic properties

The seeds are nutritional, they calm down the nervous system, prevent bile and kidney stone formation, arthritis. They improve vision. Sunflower oil extracted under cold seed pressure reduces cholesterol and protects from arteriosclerosis.

How to use

We eat the seeds and the oil.

Thymus capitatus

English: thyme | French: thym | German: Gartenthymian

Therapeutic properties

Powerful antiseptic, antispasmodic, digestive, against colics, mites and aciduria. It tranquilizes from cough, bronchitis, pertussis. It increases mental clarity, tonifies nerves, relieves from toothache, helps us sleep (some thyme under the pillow)

How to use

Infusion: against colds, cough, headache, sorethroat (gargles). Ointment or extract: for healing wounds, against itching. Essence: toothache killer, it can be added into bath water (1-5 drops). Decoction: digestive, tonic, against colics (2 cups per day)

Lepidium sativum

English: garden cress | French: gresson alénois | German: Gartenkresse

Therapeutic properties

Appetizing, diuretic, blood purifying, beneficial to the liver, antibiotic.

How to use

It can be eaten as a salad. Its juice mixed with honey is a curing ointment for face freckles.

Hedera helix

English: ivy | French: lierre | German: Efeu

Therapeutic properties

Against whooping cough, thrombosis, rhinitis, scurf, scabies, psoriasis and other skin diseases.

How to use

The tincture can be used against rhinitis and whooping cough (10-20 drops per day) the leaves in poultices and the ointment are beneficial for joint pains and skin diseases.

Coriandrum sativum

English: coriander | French: coriander cultivée | German: Koriander

Therapeutic properties

Digestive, antispasmodic, carminative, intestine regulating, against headaches.

How to use

We can take seed decoction and infusion as a digestive and carminative. Attention! big quantities of coriander juice might cause drunkenness!

Galium aparine

English: grosgrass | French: goillet gratteron | German: Klebkraut

Therapeutic properties

Vulnerary, hypotensive, antispasmodic, inflammatory, anti rheumatism, blood purifier, lithotriptic, against bladder diseases and incontinence.

How to use

We can boil the fresh leaves and plant sprouts and eat them as a salad. Also, wine and tincture can be produced from grosglass (the tincture helps with rheumatism).

Colchicum autumnale

English: meadow saffron | French: colchique d' automne | German: Herbstzeitlose

Therapeutic properties

Despite the fact that the plant is dangerous because of its toxicity, meadow saffron is precious when used suitably. It's considered a classical medicine against acute gouty arthritis, an effective analgesic (in small dosage it is used against toothache too). Meadow saffron shouldn't be used in cases of renal insufficiency.

How to use

We can use the tincture from seeds (1-5 gr within 24 hours) and the extract but always according to a doctor's advice.

Arbutus unedo

English: strawberry tree | French: arbousier | German: Erdbeerbaum

Therapeutic properties

Strawberry tree leaves have antiseptic, diuretic, inflammatory and hemostatic properties. Ripened fruit help a lot with constipation.

How to use

The decoction from leaves is very effective for the cure of flu especially if it is mixed with honey and cinnamon. We can also use it for massage to lower fever.

Crocus sativus

English: saffron | French: safran cultivé | German: echter Safran

Therapeutic properties

Emmenagogue, sedative, antispasmodic, tonic, digestive, diuretic.

How to use

We can use the sirup (very effective when massaged on gums, it relieves teething pains) and the infusion. Caution! In big dosage (a few grams!) it might be toxic and cause bleeding.

Lavandula officinalis

English: lavender | French: lavande officinale | German: Lavendel

Therapeutic properties

One of the most effective “medicines” for burns and insect bites. An excellent anti microbe, it exterminates streptococcus and pneumococcus. It's tonic, antispasmodic, stimulant, calming, light sedative, vulnerary, against cough, asthma, flu, laryngitis and headaches.

How to use

We use the infusion, the tincture from fresh flowers for massaging aching parts of the body or skin. We can use dried flowers to repel insects from drawers and wardrobes. Massage with the plant extract relieves from headache, cures bruises and swellings.

Lippia trifylla

English: Aloysia citrodora | French: verveine odorante | German: Zitronenstrauch

Therapeutic properties

Digestive, against nausea, sedative, nervine.

How to use

We drink infusion from aloysia with honey or sugar. We can also season our food with dried flowers or leaves.

Petroselinum crispum

English: parsley | French: persil | German: Petersilie

Therapeutic properties

Diuretic, liver detoxifier, antispasmodic, stimulant, tonic, appetizing, expectorant. It's against eczema, other skin diseases, edema, indigestion. It's got a beneficial action to blood circulation and rheumatism cure.

How to use

We can drink a wine glass of parsley decoction every morning before eating but not for over 3 consecutive days. For more intensive use it's better to drink the infusion. We can also use the juice from parsley or the decoction from the seeds or poultices with boiled leaves for the cure of skin diseases, insect bites.

Origanum marjorana

English: marjoram | French: marjolaine | German: Majoran

Therapeutic properties

Digestive, sedative, stomachache relieving, expectorant, anti diabetes, vulnerary, helps with colds, asthma, tonsillitis, bronchitis.

How to use

We can drink the decoction (2-3 cups a day), the infusion, the tincture (3-4 drops in a teaspoonful of honey, 2-3 times a day). We can inhale hot decoction steam to help us with cough. Dressings wet with decoction as well as massage with the essence are an excellent vulnerary. The seeds can be used in cooking.

Foeniculum vulgare

English: fennel | French: fenouil | German: Fenchel

Therapeutic properties

Tonic, appetizing, digestive, diuretic, analgesic, expectorant, sedative, helps digest fat so it helps in losing weight.

How to use

We use the leaves infusion as a good digestive, the seed decoction boiled with red wine (2 teaspoonfuls of seeds in ½ litre of wine) is an excellent tonic and appetizing. Chewing seeds prevents the flu. Massage with fennel oil helps reduce edemas.

Melissa officinalis

English: balm | French: mélissa officinale | German: Melisse

Therapeutic properties

Digestive, antispasmodic, anxiolytic, stimulant, tonic, antacid, against indigestion, toothache, it brings longevity.

How to use

We can use poultices against joint pains, massage with juice against headaches, the tea in bath water calms down nerves. We can drink hot infusion or decoction with lemon against colds (2-3 cups a day). The essence is used as a digestive, antispasmodic and sedative (a few drops in some water). The herb is also used for making the drink “Eau de melisse des Carnes” (flower sprouts of balm with lemon skin, cinnamon, cloves, nutmeg and coriander soaked in strong white wine).

Malva silvestris

English: common mallow | French: mauve sylvestre | German: wilde Malve

Therapeutic properties

Demulcent, expectorant, laxative, it heals insect bites and itching.

How to use

We use the decoction from leaves in poultices or dressings for the cure of skin eruptions, calluses. Gargles with infusion helps with throat irritations and mouth ulcers. When we drink it it's a good expectorant, it helps cure urinary and stomach diseases(2-3 glasses per day). We can also drink decoction from the herb roots or flowers (several cups a day).

Atropa belladonna

English: deadly nightshade | French: belladone | German: Tollkirsche

Therapeutic properties

Antispasmodic, sedative, analgesic, against incontinence, constipation, colics, nausea, dizziness, whooping cough.

How to use

It is used in various forms such as extract, tincture, powder, pills, suppositories but only on a doctor's prescription as, apart from being an effective medicine, it's also extremely poisonous.

Vaccinium myrtillus

English: bilberry | French: myrtille | German: Heidelbeere

Therapeutic properties

Astringent, disinfectant, anticatarrhal, against diarrhea, common cold, throat infections.

How to use

We can drink the decoction for colds and throat infections. The fruit (10-25 dried or fresh fruit or jam or juice or sirup or compote) are very effective against diarrhea, they are an excellent astringent and disinfectant for the intestine.

Origanum Vulgare

English: oregano | French: origan | German: Oregano

Therapeutic properties

Tonic, appetizing, digestive, antispasmodic, antiseptic, diuretic, astringent.

How to use

The decoction is a very effective antiseptic, diuretic, antispasmodic. The infusion is a good expectorant. We can use oregano oil for massaging aching parts of the body and for healing wounds. Chewing oregano can relieve from toothache.

Orchis mascula

English: early purple orchid | French: orchis male | German: Knabenkraut

Therapeutic properties

Demulcent and antidiarrheal.

How to use

We drink tea, we eat jelly, they both are very nutritional and beneficial to convalescent people. The decoction is an excellent demulcent, very effective against diarrhea and throat irritation.

Salvia officinalis

English: sage | French: sauge officinale | German: Salbei

Therapeutic properties

Astringent, sedative, tonic, antidiarrheal, digestive, it helps blood circulation and moderates nervous irritations.

How to use

We drink tea (“greek tea”), infusion to cure nervousness, vertigo, depression. Infusion gargles help cure throat infections, pharyngitis, mouth ulcers. When used in steam baths it's refreshing and it tranquilizes skin irritations. As it causes warming up, it should be avoided by people who suffer from high blood pressure.

Tilia platyphyllos

English: linden | French: tilleul | German: Linde

Therapeutic properties

Antitussive, antispasmodic, sedative, slightly hypnotic, against constipation, indigestion, migraine.

How to use

We drink the decoction or infusion from leaves and flowers or plant bark (2-3 cups per day). The decoction is also used externally as a hair tonifier, anti wrinkle and freckle. A bath with decoction helps us calm down.

Mentha aquatica

English: water mint | French: menthe aquatique | German: Bachminze

Therapeutic properties

Carminative, anti diarrheal, expectorant, anti rheumatism, anti vomit. Against vertigo and migraines.

How to use

We drink decoction (2-3 cups a day), we massage with essence to cure migraines and vertigo. The leaves extract is a good anti diarrheal. The juice mixed with vinegar is a good anti vomit.

Chamomilla recutita

English: camomile | French: camomille | German: Kamille

Therapeutic properties

Worldwide known for its sedative and antiseptic properties. It's very effective for migraines, anti rheumatism, stimulates blood flow, helps cure colds and allergies.

How to use

We can drink the decoction (2-3 cups a day) or spread it on our skin to cure itching and irritation. We can gargle it as an effective mouth antiseptic. The infusion added in bath water helps us relax. Also the essence is an effective sedative and tranquilizer.

How to use plants and herbs therapeutically

By Despina Vasiliadou

In the list below we included plants and herbs that can be found in most european countries, those we considered most known and beneficial as well as easy to collect.

To help our readers in using plants and herbs, we give brief directions on how to make decoction, infusion, tincture, essence e.t.c.

Infusion

Proportions

1 tea spoonful (2 - 3 gr.) of dried or 2 tea spoonfuls (4-6 gr) of fresh herb in a cup of water.

Preparation

We put the herb in a cup which we fill with water that has just boiled. We cover the cup and let 10-15 minutes so that the ingredients of the herb are enough infused. Then we filtrate in another cup. The infusion can be stored in a closed, preferably glass, container in the fridge or any other cool place for as many as 24 hours.

Decoction

Proportions

20 grams of dried or 40 grams of fresh herb in 750 gr. of cold water. We boil the mixture until it is reduced to 500 gr. (we make approximately 3 cups)

Preparation

We boil at a low temperature the water with the hardest parts of the plant (roots, branches, fruits) as they need a more intense process than the leaves before they can release their healing ingredients. We store in a closed, glass container in the fridge or any other cool place for as many as 48 hours.

Maceration

We soak the herb in cold or hot water for quite a long time – a few days.

Tisane

Proportions

2-3 spoonfuls of herb in a medium sized thermos filled with boiled water.

Preparation

We let soak all night, next morning we filtrate.

Tincture

Tinctures can be stored for a long period of time, 2-3 years, so we can have them stored and ready to use when necessary. They are made by soaking herbs into alcohol. Alcohol helps active ingredients of herbs dissolve more easily that's why tinctures are more effective than infusions or decoctions. We must use pure alcohol at a proportion of 1: 5 (one part of herb into 5 parts of alcohol). Also, we must store them in dark, glass bottles, in a dark, cool place.

Proportions

200 gr. of dried or 300 gr of fresh sliced herbs in 1 litre of alcohol 40% (vodka, gin or white rum).

Preparation

Put the sliced herbs in a big, dark container and pour the alcohol to cover them completely. Put a lid on the container and store at a dark, cool place for at least 15 days. Shake the container every 2 days. The more we leave the mixture in the container the more effective the tincture, the longer it lasts.

After 15 days, filtrate the liquid pressing the herbs tightly to strain them. Put the tincture in clean, sterile dark bottles.

Sirup

Sirup can be made by mixing equal parts of infusion or decoction with honey or sugar. It can be stored for almost 6 months.

Proportions

500 ml of infusion or decoction and 500 gr of honey or sugar.

Preparation

Put the infusion or decoction in a saucepan and add the honey or sugar. Warm the mixture at a low temperature stirring continuously until it dissolves and gets the texture of sirup. Let it cool and then put it in dark sterile bottles. Store the sirup in a dark, cool place.

Ointment

The easiest way to make ointment is by using vaseline or bee wax. Ointments can last up to 3 months.

Proportions

60 gr of dried or 150 gr of fresh herbs in 500 gr of vaseline or bee wax.

Preparation

Mix the vaseline or wax with sliced herbs in a glass container over a low temperature in a “bain marie”. Stir the mixture continuously for about 15 minutes. Filtrate and strain the mixture carefully (it's hot!!) and put it in dark, sterile jars. Put the lids on top without tightening them. Tighten when the ointment gets cold.

Essences

We can get essences through steam distilling so we need an evaporator. Such evaporators for essences can be found everywhere in the market.

Preparation

We put boiled water in the evaporator. The heat of the water passes to the herbs, breaks their fibers where essences are released from. When the steam gets cold it liquifies. This liquid contains both water and essence which split by themselves as the essence is lighter and stays on the surface of the container where they arrive. We collect the essence from the surface with a spoon.

Extract

The best extracts are made with glycerin as our product will not only contain the herbs useful ingredients but it will also be moisturizing and emollient because of the glycerin. We can use these extracts for making refreshing lotions e.t.c

Proportions

15 grams of herb, fresh or dried, in 100 grams of glycerin. We can possibly increase the herbs for a stronger extract.

Preparation

We put the herb with the glycerin in a container and store it in a dark, dry place for 4-6 weeks, then we filtrate the mixture in a dark bottle.

Useful Tip

We can usually drink 2-3 cups of herb decoction / infusion / tisane / tea per day. However, with some herbs we need to be cautious and use them with a doctor's or pharmacist's advice.

How to build a vertical garden?

By Pedro Carrana

Vertical green walls

The vertical garden, also known as green wall, is a modern technique of landscaping increasingly widespread in the world. It is a trend that grows next to the building industry and has called in the trade and also in homes.

This new modality began with the French botanist Patrick Blanc, who specialized in plants from tropical forests, being responsible for the innovation and popularization of vertical garden. In this system, the vertical gardens are so light that can be installed on any wall and watering and fertilization are automated. The benefits are not counting the unique beauty in the urbanization of the city, thermal comfort, reduced pollution and external noise that vertical gardens provide. Green panels or assembled vessels give life to walls, corridors, rooms or corners.



Photo: Quai Branly Museum in Paris - Artwork by Patrick Blanc

Building a vertical garden using technical ceramic blocks



There are many techniques to make a beautiful vertical garden. Some of them are great for indoors and even apartment balconies.

The green wall on the picture uses ceramic blocks measuring 29 (L) x 25 (h) x 19 (w) cm. The central span of each block is filled with substrate (plant nutrient). In small gardens the watering can be done manually.

In larger gardens it's recommended to install an automated irrigation system (drip irrigation) which waters your plants according to their needs.

Building a vertical wall using recycled materials

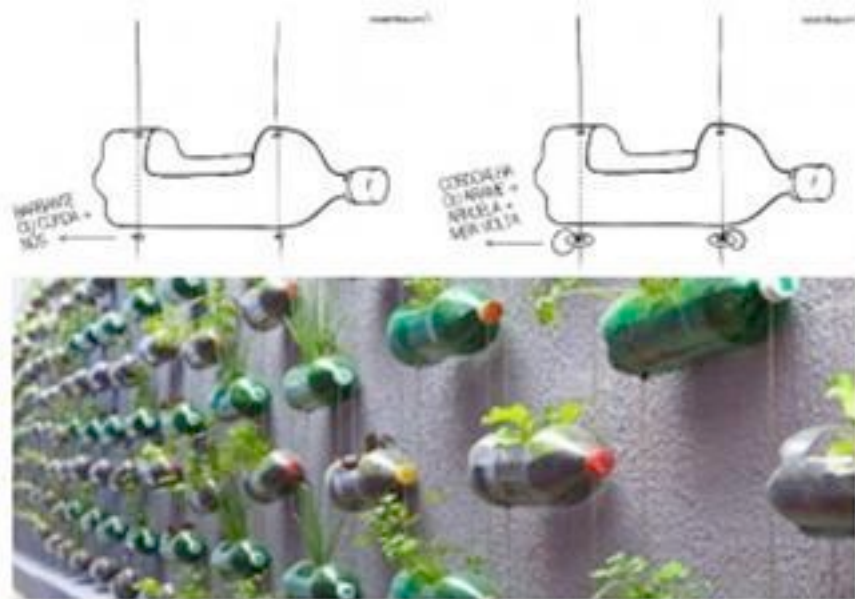
Location

Select the area where you would like to place your vertical garden ;Note that the moisture occupies the same space as above , so a wall bracket is necessary to maintain the garden moisture. If using bottles as support for your plants , take into consideration the flow of water. Normally it falls on the floor, being preferable for the garden to be built in a place of easy disposability.

The Wall

Please note that if the wall gets too sunny during the day, replace its location considering the inherent process of plant photosynthesis. It is advisable to waterproof the wall. There are several ways to attach the bottles to the wall, depending off course on the material used and on the characteristics of the wall. The most common way

of fixing it is by drying wire and placing the bottles in a sequence.

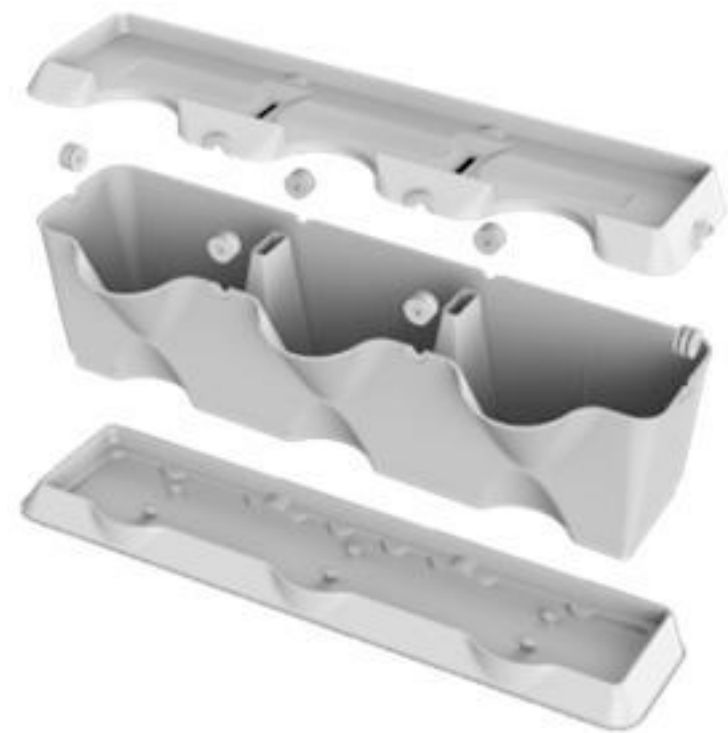


1. Using only bottles of the same size and preferably at least 2 L.
2. Make holes at both ends of the cylinder. The holes should be very close both to the lid and to the bottom of the bottle , where the plastic is harder. The two holes should be "on the same line , so that the wire is straight and will not scrape the bottle . The holes should be just big enough to pass the wire or cable to be used to prevent the water passing through them.
3. Now is the time to prepare/cut the place of the bottle where the plants will be planted. The cutaway portion should be approximately 12 cm width and 15 cm length (the measurements depend on the size of the bottles).
4. Make one or two holes on the opposite side of the opening to let out water, which will fall down into the next bottle.
5. Cut the two cables or wires with the approximate height of the wall where the garden will be placed. Make one or two knots, on the tip of each one and pass the other end through the holes of the first bottle. Then again do one or two nodes in each wire. The nodes must be at the same height and with a suitable distance from the bottle that has already been placed. Then place the second bottle. And do so, with how many bottles you want. Remember that the bottles just have to stay at the same height, if not the garden will be twisted. And avoid putting many bottles in the same row, because it will be quite heavy.
6. Attach the ranks in the chosen wall. Fix it with sufficient large nails or screws.
7. Put the earth and the plants you want. Remember to put a layer of stones, clay or newspaper in the bottom of the bottle to let water drain out.

How to build a vertical wall using a Mini Garden system

There are several system you can by install a vertical mini garden in your home, designed modular to cultivate ornamental, vegetable or aromatic plants.

The design is self-supporting and self draining and can be installed indoor or outdoor environments. Its modularity is its greatest virtue and allows you to design and install vertical gardens of any size with great ease, leaving room for your creativity. Each module of the Mini Garden Vertical system consists of only 3 types of pieces for easy assembly: a lid, a circular clip and a container with 3 wells. Additionally, the system includes a base plate, designed to collect any seepage of drainage water. Lets sow or plant a huge variety of plants from small and medium size.



Installation and configuration

Mounting the Vertical Mini garden is extremely simple and its limitless possibilities. Its modular features allow it to fit vertically and horizontally modules, or simply "back-to-back", yielding countless combinations. It may also be combined with the Corner Mini garden to increase the number of settings.

The Vertical Mini garden can be installed indoors or outdoors , or embedded to the surface of walls , walls and gables , very easily. The versatility and simplicity of Mini garden system allows an easy and durable installation from the ground or from any wall height.

The combination possibilities are limited only by the creativity, since, in addition to the modular shapes, can still play the types and colors of plants to create unique effects.

It also has the advantage of replacing the plants in Mini garden already installed with ease.

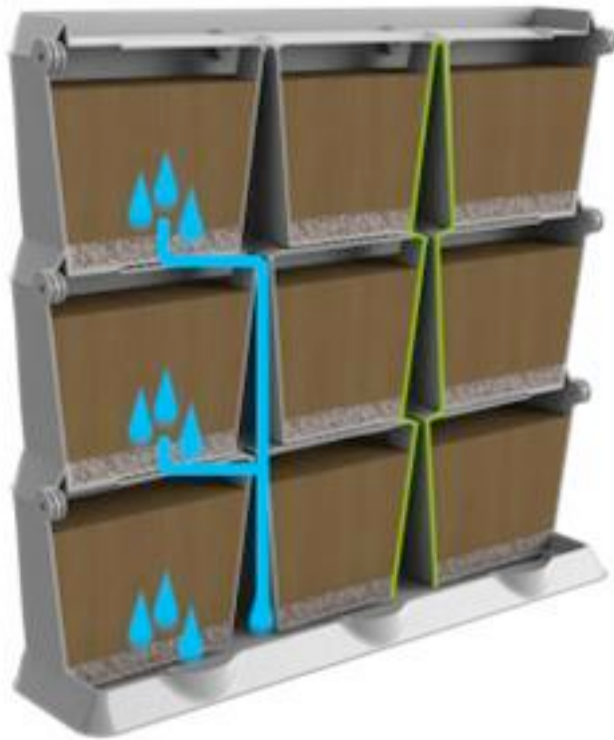
Each module can be successively stacked and / or connected on the same level with other modules through the circular clips. The connections between modules of the same level may be longitudinal or back to back , creating several configurations : single or double structures .

Materials

The Vertical Mini garden is made of high strength polypropylene copolymer and contains additives to protect against UV rays , making it able to withstand extreme weather conditions (solar radiation and temperature) and are guaranteed their integrity for ten years. It is also reusable.

Irrigation and drainage

The Vertical Mini garden was developed in order to receive an irrigation system and has an innovative mechanism of gravity drainage. This feature ensures that all excess water for watering the root of the plant is drained to the plate which forms the base of the assembly. This system is very important for the sustainability of plantations in the long term .



Thermal performance

Vertical Mini garden is contributing to the increased thermal efficiency and, consequently, reduce the energy consumption of air conditioning in your home. The Vertical Mini garden properly planted, if placed against an outside wall, serve as an excellent thermal insulator.

Decrease in greenhouse effect

In the process of production is inevitable Mini garden Vertical gas emissions greenhouse. With the growing of plants in Mini garden Vertical, taking into account its high planting density, associated with its long life cycle, is contributing to the reduction of greenhouse gases in the atmosphere of greenhouse gases such as CO₂. The balance is incredibly environmentally friendly. We recall that the raw material used in Mini garden Vertical is recyclable.

Contribute to a better environment!

Further Information

We researched some gardening approaches around the world to learn from others and to get inspired.

Community Gardens

Benefits of Community Gardening

Community Organizing:

- Community gardens increase a sense of community ownership and stewardship.
- Community gardens foster the development of a community identity and spirit.
- Community gardens bring people together from a wide variety of backgrounds (age, race, culture, social class).
- Community gardens build community leaders.
- Community gardens offer a focal point for community organizing, and can lead to community based efforts to deal with other social concerns.

Crime Prevention:

- Community gardens provide opportunities to meet neighbours.
- Community gardens build block clubs (neighbourhood associations).
- Community gardens increase eyes on the street.
- Community gardening is recognized by the many police departments as an effective community crime prevention strategy.

Cultural Opportunities:

Community gardens offer unique opportunities for new immigrants (who tend to be concentrated in low income urban communities) to produce traditional crops otherwise unavailable locally, take advantage of the experience of elders to produce a significant amount of food for the household, provide intergenerational exposure to cultural traditions,

Community gardens offer a cultural exchange with other gardeners, you will learn about block clubs, neighbourhood groups, and get other community information and these gardens can be an access point to non-English speaking communities.

Community gardens allow people from diverse backgrounds to work side by side on common goals without speaking the same language.

Community gardens offer unique opportunities to teach youth about:

- Where food comes from
- Practical math skills
- Basic business principles
- The importance of community and stewardship
- Issues of environmental sustainability
- Job and life skills

And, community gardening is a healthy, inexpensive activity for youth that can bring them closer to nature, and allow them to interact with each other in a socially meaningful and physically productive way.

Food Production:

- Many community gardeners, especially those from immigrant communities, take advantage of food production in community gardens to provide a significant source of food and/or income.
- Community gardens allow families and individuals without land of their own the opportunity to produce food.
- Community gardens provide access to nutritionally rich foods that may otherwise be unavailable to low income families and individuals.

Urban agriculture is 3-5 times more productive per acre than traditional large scale farming!

Community gardens donate thousands of pounds of fresh produce to food pantries and involve people in processes that provide food security and alleviate hunger.

Health

Studies have shown that community gardeners and their children eat healthier diets than do non gardening families. Eating locally produced food reduces asthma rates, because children are able to consume manageable amounts of local pollen and develop immunities.

Exposure to green space reduces stress and increases a sense of wellness and belonging. Increasing the consumption of fresh local produce is one of the best ways to address childhood lead poisoning.

The benefits of Horticulture Therapy can be and are used to great advantage in community gardens.

Green Space

- Community gardens add beauty to the community and heighten people's awareness and appreciation for living things.
- Community gardens filter rainwater, helping to keep lakes, rivers, and groundwater clean.
- Community gardens restore oxygen to the air and help to reduce air pollution.
- Community gardens recycle huge volumes of tree trimmings, leaves, grass clippings, and other organic wastes back into the soil.
- Community gardens provide a place to retreat from the noise and commotion of urban environments.
- Community gardens provide much needed green space in lower income neighbourhoods which typically have access to less green space than do other parts of the community.
- Development and maintenance of garden space is less expensive than that of parkland.
- Scientific studies show that crime decreases in neighbourhoods as the amount of green space increases.
- Community gardens have been shown to actually increase property values in the immediate vicinity where they are located.

Notes:

We thank St. Paul Park and Recreation for posting a list of community gardening benefits on their website.

The above is mainly from that source with a couple of additions. Any list of benefits can never be complete.

<http://www.stpaul.gov/depts/parks/environment/gardens/index.html>

<http://communitygarden.org>

<http://www.gardendallas.org/benefits.htm>

Princess Garden Berlin

Created in 2009 on an abandoned place in downtown Berlin, this movable community garden with its own coffee shop, toilets and bar has become a popular destination for people living around there.

In containers, they grow fruits, vegetables and flowers, without any artificial fertilizers and pesticides. Furnitures are made from recycled materials. The whole project is run by volunteers. These are people of all ages who are living nearby, associations and environmental activists.

The garden is open from April until October and moves then into a market hall to survive the winter. During this period, people can buy seeds and plants for their own gardens.

How it works

The garden was initiated by a group of people to revitalize a 6000 sqm place in Berlin Kreuzberg. The area itself was abandoned for long time and turned into an illegal wasteland. The initiators convinced the local municipality to rent them the place and mobilized friends and people living around there to clean the place and started planting in movable containers, pots and available vessels.

A social enterprise “Nomadic Green” was founded to be able to generate income by running a garden cafe, selling plants and seeds, consult and teach schools, kindergartens, associations and private persons in ecological agriculture and gardening. The overall aim is to establish a place for social and ecological agriculture and learn how to make local food together and to create a new urban city life in a district with a high population density and many social problems. The rental agreement lasted for one year each until recently.

In 2012, the municipality decided to privatize the place and give a building permission to a private investor. In a campaign, about 30.000 signatures were collected, resulting in a petition to the municipality to reclaim the right for running the garden. Finally, the municipality took back their privatization agreement and confirmed a long term allowance for keeping the garden.

URL: <http://prinzessinnengarten.net/>

Community Supported Agriculture

Projects of Community Supported Agriculture are becoming more and more popular in Germany over the last years, with a variety of models and a boom in new initiatives, about 40 are currently listed in the national network, and three of them exist in the vicinity of Freiburg!

It is based on the idea to establish direct links between producers and consumers of agricultural products, in contracts between the farmer and an association of households.

CSA members pay at the beginning of the growing season for a share of the harvest, and as such share the risks of the farming as well (extreme weather conditions, pests, etc.)

The consumers' benefits are: access to fresh, seasonal and (mostly) organically grown products from the region, an insight into farming practices (hands-on involvement is invited by many projects) and the community effects of running the association and

the cooperation with the farmer.

For the farmers, the main benefits are the economic support and guaranteed consumption of their harvest, as well as the direct contacts with the consumers and their support in the farming activities.

One successful CSA initiative is the GartenCoop in Freiburg, with the farm in nearby Tunsel. More than 250 members commit to paying fair wages to the team of 5 farmers (part-time), to helping with the weeding, harvesting etc. at least 5 times a year, to organising the distribution of the harvest to several points of collection. In result, they receive tasty, organic vegetables, fruit and grains from persistent seeds, many of them rare species.

Website of the German CSA Network: <http://www.solidarische-landwirtschaft.org/>

Website of the International Network of CSA's (in French, English, Spanish and Portuguese language): <http://www.urgenci.net/>

If you feel like learning more, or even initiating a project in your region, have a look at the European Handbook for Community Supported Agriculture which can be downloaded free of charge:

<http://www.urgenci.net/page.php?niveau=3&id=European%20Handbook%20on%20CSA>

(and note that it was developed as a product of another Grundtvig Learning Partnership :-)

The CSA projects in Freiburg region: GartenCoop Freiburg e.V.: <http://www.gartencoop.org>

Luzernenhof Seefeld: <http://www.luzernenhof.de/>

Lebensgarten Dreisamtal: <http://lebensgarten-dreisamtal.de/>

Dyfi Valley Seed Savers

Dyfi Valley Seed Savers is a not for profit organisation, based in Machynlleth, mid-Wales, and run mainly by volunteers. We promote the saving and swapping of seed with the aim of preserving old or unusual vegetables, nurturing our local knowledge and plant heritage, promoting sustainable gardening and a flourishing local community.

Going strong since 2004, our events include an annual seed swap (Seedy Sunday) and plant swap (Seedling Saturday), as well as workshops throughout the year. It's a chance for experienced and novice gardeners to get together, exchange their seeds and plants, learn something new and share their expertise.

Our projects include the Welsh Vegetable Project which is discovering local vegetable varieties and bringing them back into cultivation in the area. We're also compiling The Apple Mach Register, a record of apple varieties being grown locally.

<http://www.dyfivalleyseedsavers.org.uk>

Ian Sturrock and Sons

Ian Sturrock is famous for saving rare varieties of Welsh fruit trees through careful cultivation and research, he is especially famous for saving the rare Bardsey Island apple and the Denbighshire plum trees. Both varieties are now being planted in local gardens throughout Wales, Europe and even in the southern hemisphere. They are wonderfully resistant to so many modern diseases

<http://www.iansturrockandsons.co.uk/>

Gardening models

Natural farming

The method is based on 4 principles:

1. no ploughing the soil
2. no fertilizers
3. no weeding
4. no pesticides.

It can be applied in gardening of both, small and large scale. More details on natural farming at:

<http://www.youtube.com/watch?v=qKfh82wKn50>

http://www.naturalfarming.eu/?page_id=68

<http://garden-future.eu/2013/04/11/fysiki-kalliergeia>

Urban farming

Although urban farming is not widely applied in Greece, there are some initiatives to grow gardens on balconies and terraces using hydroponic systems: <http://greekurbanfarmer.wordpress.com/page/2/>

Urban farming in other parts of the world:

<http://www.youtube.com/watch?v=d39bilxeuss>

<http://www.urbanfarming.org/>

<http://theurbanfarmingguys.com/>

Permaculture

A useful link with questions and answers on permaculture: <http://www.greenliving.co.uk/Articles/what%27spermacultu.html>

Forest Gardening

It's a garden that is deliberately planted to mimic a natural forest ecosystem, except that the species chosen are mainly edible rather than (or as well as) decorative. Some will be chosen for other reasons though for example firewood, nitrogen fixing or medicines. So a forest garden is sustainable garden using diverse, perennial edible species, based upon the structure of native woodland, which means that there are layers from the tops of trees down to the ground, and to the roots under it.

http://www.lowimpact.org/factsheet_forest_gardening.html

<https://sites.google.com/site/bangorforestgarden/>

Organisation models

Cooperatives in Greece

Cooperatives seem to be an efficient and profitable way of gardening especially for those who own small pieces of land. Cooperative establishment in Greece follows the European Common Agriculture Policy (CAP) so we believe that our research on how to establish a cooperative might interest people from other european countries as well. More at <http://garden-future.eu/2013/03/13/about-cooperatives>

Professional organic farming

Organic food is more and more gaining ground in local markets and could give a remarkable income when certified and exported. Our research results on how to get organized, how much to invest, what income to expect. More at <http://garden-future.eu/node/109>

Red Huertos Urbanos

A network of urban plots cultivator associations in Madrid, Spain. Organic agriculture's of urban public / community plots. A meeting point for socializing and exchanging knowledge, experiences, activities. More at <http://redhuertosurbanosmadrid.wordpress.com/>

Free & Real

A sustainable, self sufficient community in Greece. It's a non profit NGO, established in spring 2009 by 30 members. They are open to cooperation with municipalities, communities, organisations, universities, foundations, local and international agencies. They research, create and apply a social structure in a developing,

self-sufficient eco-community in Greece, aiming at functioning as a school of self-sufficiency and sustainability. More at <http://www.freeandreal.org/>

Crofting

A smallholding is an area of land bigger than a garden and smaller than a farm, used for productive agriculture or forestry. The lines between garden, smallholding and farm are blurred however. It's just a very small farm, small being relative to the size of farms in that particular society.

Crofts (Scotland) are smallholdings, although there is a legally defined tenure for a croft, but not for a smallholding. Smallholdings can be comprised of families, individuals or communities, where people pool resources to hold land together.

<http://www.crofting.org/index.php/faqs/67>

Ecovillage

The concept for the Lammas ecovillage is that of a collective of eco-smallholdings working together to create and sustain a culture of land, based self reliance. The project supports a permaculture approach to land management in which human beings are considered an intrinsic part of the ecosystem. As a result the approach to environmental management is one of stewardship for future generations rather than exploitation for short term gain.

<http://lammas.org.uk/>

All about seeds

We experienced that there are a lot of questions about growing plants from own seeds. Therefore, we decided to collect some links to useful websites where you can get very good information about seed saving and learn the procedure from scratch. There is no weighting, we just listed a few sites which we think explains the process in a clear and understandable way.

- Especially that forum we found very useful as it answers some important questions regarding seed harvesting, storage and exchange: <http://faq.gardenweb.com/faq/exseed/>
- A clearly structured seed saving handbook in which about 50 vegetables are listed with instruction when to harvest seeds. In an FAQ section are some general explanations about how to collect, store and breed your own seeds <http://howtosaveseeds.com/>
- The International Seed Saving Institute (ISSI), a non-profit, educational organization is dedicated to seed saving, seed saving education and permaculture. The ISSI published on their website a beginners guide to seed saving which is divided into three level of difficulties so that even beginners can be successful and stay motivated. The guide contains a glossary, basic principles and detailed instructions about 25 most common vegetables with explanations about the plant itself, it's traits and the seed harvest: <http://www.seedsave.org/>
- Explanations of collecting, storing, sowing and germinating seeds. There are an FAQ section and links to other seed saving websites too: <http://theseedsite.co.uk/>
- A guide to start growing plants from your own seeds, containing instructions for how to choose the right containers, when to plant, how to fertilize and moisture and how to potting it up: <http://www.gardeners.com/How-to-Start-Seeds/5062.default.pg.html>

Sources of sustainable seeds

Of course, the most sustainable way of growing plants from seeds is growing seeds yourself! However, everyone has to start from some point, and not all of us may feel experienced or patient enough to grow his or

her own seeds. But great relief: thanks to all the committed gardeners and associations who are working to preserve self germinating seeds and heirloom species we can still find sources of sustainable seeds:

The „Samengarten Eichstetten“ in the Breisgau Region of Germany are supported by the Foundation „Kaiserstühler Garten“ <http://www.kaiserstuehler-garten.de>. You can learn more about the project, see the list of available species and order seeds online at <http://www.samenfest.de/>

The Pro Specie Rara Foundation for the conservation of heirloom species is active in Switzerland, Italy and Germany <http://www.prospecierara.ch/de/home>

The “Samenfest” campaign intends to inform about the importance of heirloom species <http://www.samenfest.info/info.html> and provides a map of Germany, inviting gardeners to spot locations where GMO free and heirloom species are cultivated: <http://www.samenfest.info>

Organic seeds can be ordered online from different sources:

- Bingenheimer Saatgut (English catalogue available!) <http://www.bingenheimersaatgut.de/>
- Dreschflegel (an association of organic seed farmers): <http://www.dreschflegel-shop.de/>
- Biogartenladen <https://www.biogartenladen.de/index.html>
- Bio-Saatgut: <http://www.bio-saatgut.de/>
- Seeds of Change (a Canadian retailer): <http://www.seedsofchange.com/>
- Grow Organic (another Canadian source): <http://www.groworganic.com/seeds/organic-seeds.html>

Diversity

The networks below make hard efforts to reduce the influence of seed industries at decision making centres and at the same time they try to join their voices at a national and international level for keeping diversity.

- ARCHENOAH in Austria: <https://www.arche-noah.at/>
- PROSPECIERARA in Switzerland: <http://www.prospecierara.ch/de/home>
- DRESCHFEGEL in Germany: <http://www.dreschflegel-saatgut.de/>
- Seed Campaign: <http://www.seed-sovereignty.org>
- The European community Longo Mai http://en.wikipedia.org/wiki/Longo_Mai
- The BUKO campaign against Biopiracy, in Germany: <http://www.biopiraterie.de>
- The Corporate Europe Observatory (CEO): <http://www.corporateeurope.org>
- IFOAM in Brussels: <http://www.ifoam.org>
- Kokopelli in France: <http://www.kokopelli.asso.fr>
- Seedy Sunday in England: <http://www.seedysunday.org>
- The International Gardens in Germany: <http://www.internationale-gaerten.de>
- The Intercultural Foundation in Germany: <http://www.stiftung-interkultur.de>
- The Green Foundation: <http://www.greenconserve.com>
- Grain in India: <http://www.grain.org>
- The Greek networks (“Seedsavers”)
- The “Peliti” network which organises a popular festival every year, which lots of seed savers from all over the world participate in. Peliti gathers and registers local seeds. It also registers gardeners of those seeds: <http://www.peliti.gr>
- The “Aegilops” network for Biodiversity and Ecological Agriculture. They focus on wheat varieties and the scientific approach for saving biodiversity: <http://www.aegilops.gr>
- The “Archipelago”, an environmental NGO with an extended seed bank from the Aegean islands varieties: <http://www.archipelago.gr>

- The “MAIX” foundation in Crete with a well organized seed bank: http://www.maich.gr/el/news/past_events?page=5

About the sustainable water use in our gardens, green spaces and urban plans

We are seeing more and more water shortages and floods, sometimes and also in quick succession. This is partly because climate change is producing more extreme weather patterns but it also has a great deal to do with the way we manage the land. As we have removed hedges and woodlands and drained its natural wetlands, the countryside has become far less absorbent. As a consequence, rain in the hills now flows more rapidly down the streams and rivers into lowland towns and cities with potentially devastating results.

There is also less time for the rain to soak in to the ground and less opportunity for natural reserves of drinking water to be replenished. In urban areas something similar has happened. As we have built and paved over more of our villages, towns and cities the rain that might once have soaked into the soil disappears down gullies and drains in double quick time so that a short sharp downpour can cause serious problems. Car parks, roads and roofs all serve to speed up the rate of rainwater run off and increase the risk of flash flooding.

For some time, environmentalists have been making the case for more water retentive towns, cities and countryside as ways of managing water more wisely. Climate change is predicted to deliver even more extreme weather in the future, so these arguments for more intelligent and sustainable land and water management should be irresistible. Sustainable Drainage Systems, known as SuDS, are widely accepted as the wise way forward. There are many excellent examples of inspirational good practice across Europe, North America and elsewhere and SuDS are now being encouraged in England and Wales through the Flood and Water Management Act 2010.

The best sustainable drainage schemes incorporate a range of habitats that are good for water management and also good for wildlife. In the countryside, peat bogs and heather moorland, broadleaved woodland, wildflower meadows and reed beds can all serve as natural sponges, soaking up the rainwater and filtering pollution at the same time. In built up areas parks and gardens offer much the same opportunity, and well designed SuDS landscapes will often incorporate rain gardens, green roofs, temporary wetlands and a range of other living landscape features that are good for wildlife, good for water management, and very good for people.

Read more about

- the sustainable use of water at <http://www.garden-innovations.co.uk>
- sustainable watering systems: <http://www.goholistic.co.uk>
- garden water saving tips: <http://www.thameswateruk.co.uk/water>

Diseases how to treat them with Permaculture or organic methods.

Most methods of plant-disease control follow one of the six principles summarized by the acronym REPEAT:

- **R**esistance: Using plant varieties that are genetically resistant to or tolerant to a specific pathogen for disease control.
- **E**radication: Controlling disease by eliminating or reducing disease-causing pathogens in the environment.
- **P**rotection: Using NOP-approved materials, including bio-rationales, to interfere with a pathogen's ability to infect susceptible plants.
- **E**xclusion: Controlling disease by preventing the introduction or establishment of a pathogen in an environment.
- **A**voidance: Controlling plant disease by maintaining healthy growing conditions for the plant and growing the plant under environmental conditions not favorable for the pathogen or for the development of disease.

- **Therapy:** Controlling disease by treating infected plants through chemical or biological agents or by manipulating the environment to eliminate or limit pathogen growth and subsequent disease.

The most sustainable approach to disease control is one that integrates several of the methods summarized above. And because successful integration of these methods requires knowledge of the pathogen and the disease cycle, correct diagnosis of the disease is critical. <https://edis.ifas.ufl.edu/pp169>

Prevention

Prevention is much easier than treatment. This is true for our own health, as well as our garden's health. Just as eating right and getting regular check-ups is vital to preventing health issues, providing a healthy environment for your plants is also essential for preventing plant health issues.

Here follows some tips:

- Follow good sanitation practices
- Fertilize to keep your plants healthy
- Inspect plants for diseases before you bring them home
- Allow the soil to warm before planting
- Water in the morning
- Mulch!
- Provide good air circulation
- Watch out for insect pests
- Remove diseased stems and foliage a.s.a.p.

More at :

- <http://organicgardening.about.com/od/diseases/a/Prevent-Plant-Diseases-With-Good-Gardening-Practices.htm>
- From the following link you can download a table with diseases, including fungal, bacterial and viral, plants affected, a description of the damage and organic remedies:
- <http://www.greenharvest.com.au/PestControlOrganic/Information/PlantDiseaseControl.html>
- Some methods and recipes:
- <http://deepgreenpermaculture.com/diy-instructions/strange-brew-homemade-garden-sprays/>
- <http://www.growveg.com/growblog.aspx?t=disease>
- <http://www.ghorganics.com/page15.html>
- <http://organicgardening.about.com/od/diseases/>
- <http://www.offthegridnews.com/2012/03/17/treating-plant-diseases-naturally/>
- https://henklesonline.com/Natural_Remedies_to_Pest.html
- For fruit trees: http://www.small-farm-permaculture-and-sustainable-living.com/fruit_trees_and_homemade_pest.html

Organic fertilizers used in households

Weed slurry

This is fertilizer made of grass or weeds + water. Put grass and weeds in a large bowl and pour some water on it, the proportion is 1 (weeds) : 2 (water) , preferably keep in a warm place, after 10 days it is ready for use. You should dilute it 1:10 with water and water plants with it. Weed slurry contains the same elements as the plants used in its preparation.

<http://www.youtube.com/watch?v=BrpiEnt9Ajk>

Compost

Compost can be used instead of manure, and people can prepare it themselves. The following things can be used to make a compost: kitchen and household waste ; garden waste . You can use weeds from the garden, except for those that have mature seeds.

Disadvantages – the compost making is a long process. A

Advantages – you do not have to pay for plant fertilizers as well as for the removal and recycling of garden waste! <http://www.youtube.com/watch?v=uNW6aUrXkZo>

Earthworm compost

Lately greedy and red California earthworms have undertaken the work of processing fertilizers, they carry out the main work of de-compositing of organic substances. This kind of soil is used as high-quality soil.

<http://www.youtube.com/watch?v=MH9Vt01d8v0>

<http://www.youtube.com/watch?v=pbD8XDIIShU>

Compost and earthworm compost is a rich source of organic matter/substances and contains all the necessary chemical elements. It also houses a large quantity of useful micro-organisms.

<http://compost.css.cornell.edu/worms/basics.html>

Green Manure

Rye, oats, marigolds, oilseed rape or rape are sown among basic cultivars, then wait until they turn green and then incorporated/dig/plough into the soil. It can also be performed after harvesting, you sow it, and when it sprouts, in late autumn, work into the soil. In spring you can plant and sow whatever cultivars you want. <http://www.growveg.com/growblogpost.aspx?id=49>

Manure and slurry

Households mostly obtain manure and slurry by purchasing them from breeders. The manure is worked into soil in spring or autumn, slurry is poured over soil. When diluted with water it can be applied in early spring, it has a very beneficial impact on plants, especially berries.

Manure is a very rich fertilizer containing nitrogen, phosphorus, potassium, calcium, magnesium and a wide range of trace elements. Slurry is rich in nitrogen and potassium it can be easily applied. Slurry can also be obtained by diluting manure with water.

Ashes

Ashes, obtained from the incineration of different trees, are considered to be one of the best complex fertilizers. They contain phosphorus, potassium, calcium and a number of trace elements necessary for plants.

Ashes can be used for all types of vegetables in all soils. If the soil is heavy, you should embed/work in ashes in the autumn, if the soil is sandy and peaty it should be done in spring. The amount of ashes sufficient for 100 square meters is 10 kg. Ash is scattered before digging the soil, but can also be directly poured in a furrow or hole. After the incorporation of ash into the soil its activity lasts for 2 to 4 years.

During the summer you can alternately fertilize plants with organic fertilizer and ash. Take 1.5 glasses of ash per one bucket of water. Stir thoroughly and quickly, while phosphorus containing sludge go down, pour the liquid in the previously made furrows and beds and close them.

<http://www.youtube.com/watch?v=SvI3LhDzG2o>

Traditional agriculture

Ironically, traditional gardening is difficult to define, mostly because there are small and large differences in how people garden around the world and throughout time. It is simply impossible to comprehensively define a common, time-tested method. Until the introduction of technical progress, agriculture maintains extensibility features that constitute an activity with low environmental impact.

The traditional conventional agriculture, which in Italian can be identified with the ordinary agricultural systems until the fifties, maintains in a state of latency weakness of the agro-system under the ecological aspect, thanks to some corrective mechanisms or stabilizers which are manifested in the long period. Subject to specific exceptions, where they put agriculture "robbery", it can be considered a low impact activity and over the centuries has allowed the preservation of agro-systems in terms of stability.

The organic fertilization, without, however - at least in poor soil - the high performance of the mineral fertilization, keeps the soil in a state of fertility generally stable, from which they undoubtedly benefit the same crops.

The mineral fertilization instead provides a significant short-term production potential, which, if not adequately exploited by agricultural species, predisposes the agro-system destabilizing imbalances. For example, the lavish nitrogenous fertilizers on the one hand stimulate a large increase in yields, by another increase invasiveness of weeds nitrophilous and make agricultural plants more vulnerable to pest attacks, particularly by pathogenic fungus. The traditional crop rotations had the implicit goal of optimizing the allocation of resources within a multi-year cycle and contain the ecological pressure on the part of the Species "harmful": for example, the lawn had a multi-year effect of improving the chemical and physical fertility of the ground and, at the same time, limiting against herbaceous plants intrusive, the crop from renewal, such as corn, sugar beet, potato, improved the state of chemical fertility of the soil and, thanks to the accurate machining contained the spread of weed, crops improperly considered impoverishing, such as barley and wheat, exploited the residual fertility and at the same time constitute a system of prophylaxis that prevented the accumulation of pathogenic parasites (fungus, nematodes, soil insects) in the ground, that would occur with a possible return of the crop to frequent renewal.

The address of productive mixed and diversified crop system constituted a rudimentary form of protection of biodiversity. For example, the presence of integrated livestock farm land justified the use of a portion of agricultural land in the grass polifita permanent pasture or crop rotations and the inclusion in the rotation prairie or of the grass, while valorized byproducts by optimizing ' with the use of intra-unit (straw, manure, etc.). The intercropping herbaceous or tree - growing in adjacent plots of herbaceous plants and fruit trees allowed the auxiliary insects (predators and parasitoids) to complete their life cycles within the company.

The use of a portion of the surface in the forest, the presence of natural hedges exploited for the demarcation of borders and headland, different accommodations surface which included the presence of rows trees plant or vines as the stand Cavino Emilia and Veneto are all elements of the rural landscape that favored for the reasons expressed earlier, the establishment of stable and useful insect fauna refuge for vertebrate insectivores.

The choice of species, varieties, races, finally, in addition to having a wide range of genetic types was optimized as a function of environmental conditions. In other words, the choice was mainly based on cultural criteria, so it favored the genetic types that offered the best reliability as widely tested in a local, regional or territorial. This has allowed, with the slow mass selection, the establishment of a germ-plasma varied in its entirety and contains intrinsic factors of hardiness, resistance or adaptation to specific environmental adversity, parasitic or not.

<http://it.wikipedia.org/wiki/Agrosistema>

<http://www.backyardfarmingconnection.com/2013/03/gardening-methods-traditional-and.html>

To have an additional information about the history of agriculture with all related steps of development please read <http://en.wikipedia.org/wiki/Agriculture#History>

Interesting added value about methods of the traditional agriculture: <http://www.nsalg.org.uk/growing-advice/gardening-advice/tradiitional-gardening-methods/>

Discussion on “The Problem with Traditional Vegetable Gardening”: <http://foodfreedomgroup.com/2013/08/27/problem-traditional-vegetable-gardening/>

Discussion about traditional versus organic gardening: <http://voices.yahoo.com/traditional-gardening-vs-organic-gardening-1301137.html>

Traditional gardening methods versus intensive gardening methods: <http://pubs.ext.vt.edu/426/426-335/426-335.html>

Partners in this project were:

	http://cocoate.com
	http://aiforia.eu
	http://sde-kerkyr.ker.sch.gr/
	http://coopcramars.it
	http://pic.dobele.lv
	http://apshstdc.com
	http://dailgwalia.com



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