

BALCONY VEGETABLE GARDENS

GLOBAL VEGETABLE GARDENS FOR SMALL SPACES



10 TIPS
TO SET UP SUSTAINABLE VEGETABLE GARDENS
IN SMALL URBAN SPACES USING
COMMON AND RECYCLED MATERIAL



CO-FUNDED BY
THE EUROPEAN UNION



PROMOTED BY
Comune di
Milano



GLOBAL VEGETABLE GARDENS FOR SMALL SPACES

This booklet includes technical though easy-to-apply advice on how to start experimenting with home gardening.

It is an **EXPERIMENT**, but it can be the beginning of a long-lasting journey.

It is an **OPPORTUNITY** to experience contact with nature even in small spaces and to keep your windows, heart and mind open to the world!

It is good **ACTIVE CITIZENSHIP PRACTICE**, a commitment to greener and more sustainable cities and world.

WHAT DO YOU NEED TO EXPERIMENT?

- balcony, garden, windowsill;
- some soil;
- imagination, creativity, willingness to get your hands dirty;
- pots or fruit crates or small containers to be recycled.

The following are useful but not essential:

- seeds;
- gardening tools (shovel, watering can and beach sieve);
- rain boots, apron and work gloves to get things done;
- camera and/or mobile phone to tell your story;
- garden schedule to remind you when to water or transplant and to be marked when your seedlings sprout (pre-made diagrams exist or you can create your own).

1. GROWING IN UNUSUAL POTS 

2. PLANTING POTATOES WITH SPROUTS 

3. PLANTING SPROUTED GARLIC CLOVES OR ONIONS 

4. BREEDING PLANTS USING CUTTINGS 

5. COLLECTING TOMATO SEEDS 

6. GROWING 'MISTICANZA' SALAD MIX 

7. MAKING SEEDBEDS FOR PLANTS 

8. MAKING COMPOST 

9. SEED BOMBS 

10. TIPS FOR OUTDOOR SPRING VEGETABLE GARDENS 

BALCONY VEGETABLE GARDENS

GROWING IN UNUSUAL POTS



For above-ground grows you can use ordinary pots, but also some recycled objects that you can rearrange creatively, for example wooden fruit crates. This is an extraordinary opportunity to put your artistic skills to use by painting the outside of the crates in bright colours and then lining them with plastic sheeting on the inside. You can use rubbish bags for your lining, but they should be slightly perforated underneath to prevent waterlogging. They should then be filled with good soil and fertilised with a few handfuls of manure (or coffee grounds), and then you can start growing.



WHAT YOU NEED

1. Wooden box
2. Plastic bag
3. Scissors
4. Potting soil (also taken from old pots)
5. Seeds or seedlings



What you can grow in crates

In tall crates you can put large vegetables such as tomatoes, aubergines, courgettes, one plant per crate, as they require a lot of soil. In low crates you can put less demanding vegetables such as salads, parsley, onions or strawberries. Be careful not to water too much, because water can run underneath the crates as there is no flowerpot dish.

2

PLANTING POTATOES WITH SPROUTS



If you happen, as it is often the case, to find sprouted potatoes, do not dispose of them, use them as seed tubers. The ideal time to plant them in the ground, even in pots, is in spring, when new plants grow and produce potatoes. Typically, 1 kg of seed potatoes can yield up to 8 kg of new potatoes.

Potatoes in burlap bags

Growing potatoes in burlap bags is a nice and very productive alternative. You put soil into the bag, fill it up to 30-40 cm and roll the edges so that they reach just above the layer of soil. The bottom of the bag, which is only partially filled, tends to expand on the ground and you can put up to 4 whole or half potatoes in it. The bag is porous, which prevents any waterlogging issues. As the aerial part grows, you will cover it with new soil by unrolling the edges of the bag, so that the plant is stimulated to grow new tubers and new shoots and will continue to do so until the bag is completely filled.

WHAT YOU NEED

1. Sprouted potatoes
2. Pot or burlap bag or old jeans bag to be turned into a sack
3. Soil
4. Needle and thread or stapler to make the sack



Planting technique

Large potatoes can be cut for planting, to get more of them, the important thing is to cut them lengthways so that the number of buds is well balanced between the two parts. Each half potato should be buried about 10 cm deep and 25 cm apart. Large pots are therefore needed for 1 kg.

3

PLANTING SPROUTED GARLIC CLOVES OR ONIONS

Sometimes you may forget some garlic and onions in your cupboard and then find them sprouted. Throwing them away would be a waste and if you no longer want to use them to cook, you can always plant them by burying them 12-15 cm apart. You can do it as follows:



ONIONS: plant your unpeeled whole onion with the sprout sticking out of the ground. Over time the bulb will provide nourishment for the birth of several small bulbs that you can use as fresh spring onions, remembering that onion stalks are very good for cooking.

GARLIC: all the bulbs that make up heads should be separated and buried at distances indicated above. Garlic should be planted by the end of winter, but even in spring you can still get small garlics to be eaten while still fresh, also using stems when they are green, without letting them dry out.

WHAT YOU NEED

1. Sprouted garlic or onion
2. Soil
3. Pot, wooden crate (see point 1), small containers with holes on the bottom



4

BREEDING PLANTS USING CUTTINGS

Cuttings offer the opportunity to multiply plants without using seeds, but rather literally cloning an individual by taking and rooting a part of it. Specifically, you have to cut a twig from the mother plant and root it. Using this method you can very easily and quickly breed mint, an aromatic herb that you can use to prepare thirst-quenching drinks or cocktails in summer, but also many ornamental species, such as the very common forsythia, bougainvillea, laurel, wisteria and many other beautiful plants.



WHAT YOU NEED

1. Small pots
2. Potting soil 
3. Mother plant twig (perhaps a neighbour can give it to you?) 

How to make cuttings

The twig should be approximately 10 cm long and you should remove lower leaves before burying it. You can root it in small pots filled with potting soil that must be constantly moistened. When you see new shoots you can be happy of your cutting and have a new seedling that is genetically identical to its mother.

If you are intrigued or a photographer: for a better view of the roots, root the twig in a glass jar with a little water at room temperature and away from direct light (this works well with rosemary).

5

COLLECTING TOMATO SEEDS

If you are keen on making as much as possible of what you have at home, you can try taking tomato seeds directly from the fruit. Tomatoes are in season only for a limited period of the year, but if you find extremely good ones and know for sure that they are well-defined varieties and not F1 hybrids, you can easily obtain seedlings that will bear the same good fruits using those seeds.

METHOD

1. Open ripe fruits and extract seeds from the pulp.
2. Before using them, ferment them in water for two days to eliminate any mucilage.
3. At this point they are usually left to dry because they are picked in summer to be ready for the following spring, but you can use them immediately, putting them in jars filled with soil to be placed inside a mini greenhouse that is well placed in the sun. Avoid keeping your pots near a window because light would be too low.





GROWING 'MISTICANZA' SALAD MIX

Misticanza, which is a mixture of leafy species that can be eaten raw as salad, including lettuce, several types of radicchio, rocket, valerian or others, is very easy to be grown and quick to be harvested. Crates are more convenient than pots because they offer larger areas to be used for growing and, moreover, you do not need great depth, this is why you can also use lower crates that are not suitable for other species.



WHAT YOU NEED

1. Wooden crate
2. Potting soil
3. Dry soil
4. Sieve or colander
5. 'Misticanza' seeds

METHOD

- Fill the crate to the brim with potting soil.
- Gently moisten the soil.
- Distribute your seeds using the "scattering technique", i.e. spreading them evenly but without overdoing it.
- Cover with dry potting soil that has been previously sieved using a sieve, as if you were putting icing sugar on a cake. An ordinary colander can be used for this purpose.
- After 2 to 3 weeks you can cut your first salad, which will be tender and full of valuable vitamins. For new production you need to cut 1 to 2 cm from the base so that the heart of the plant remains intact and then water to promote regrowth.



7

MAKING SEEDBEDS FOR PLANTS

Your balcony can be a great place to set up a good seedbed. You can use a ready-made, easily assembled structure covered with transparent sheeting that provides the right amount of warmth for plants inside it. Alternatively, you can build one yourself using simple wooden planks, nails and a hammer, or even an old bookshelf, as long as it is open at the back to provide light.

HOW TO DO IT

Put all your containers for sowing on the shelves: jars and trays specially designed for seedlings, but also recycled containers such as yoghurt pots that are perforated underneath or toilet paper rolls folded on one side so that they become jar-shaped. Very fine and soft soil is needed for planting seedlings, but it is not important to fertilise it.



WHAT TO PLANT

In spring you can plant whatever you prefer: lettuce, tomato, aubergine, pepper, courgette, various cabbages, cucumber, pumpkin, annual flowers such as borage, marigold and much more. Do not bury your seeds too deeply, just cover them slightly.



MAKING COMPOST



All organic waste from cooking and growing is normally, and quite rightly, disposed of in the wet fraction of your separate waste collection. But at least some of it could be spared as compost, excellent organic fertiliser to be used for your home garden, your garden and all your potted plants. If you have a vegetable garden or a garden, you can also mark it using nets or pallets, or even leave your compost heap free, alternatively, a small balcony composter can be a good idea. It is recommended to only put plant and uncooked materials in your compost heap to avoid unpleasant odours that can be disturbing for your neighbours and you.



SMALL TRICKS FOR GOOD COMPOST



1. Put in fairly finely chopped materials to speed up decomposition, but not excessively fine ones because air needs to circulate.
2. Aerate your heap by means of a fork or frequently open the openings of your composter.
3. Put in both fresh and fibrous waste to achieve a balanced material and do not put in any meat or fish waste.



9

SEED BOMBS



Seed bombs are a fun practice of Guerrilla gardening, a non-violent movement promoting planting of flowers and plants in neglected or abandoned areas of the city or in areas that are too full of concrete. Seed bombs must be literally thrown into the chosen area so that they will give birth to beautiful and environmentally beneficial flowers and plants.

METHOD

1. To prepare your seed bomb you need: 2 parts potting soil, 5 parts powdered clay, 1 or 2 parts water, seeds of your choice.
2. Mix soil and clay in a large container.
3. Gradually add water until the mixture is malleable and pliant but not soggy.
4. Put your seeds in the mixture and mix.
5. Shape small balls of any size.
6. Place balls to dry.
7. Throw them in your garden or in places that are visibly abandoned and bare.



Which flowers to choose

The most spectacular annual flowers include garden cosmos, which can be white or pink when flowering and have tall stems. They are frequently visited by bees and butterflies and are therefore excellent for environmentally-friendly purposes. You can add any flowers you like including nigella, poppies, borage, tagetes and many more.



10

TIPS FOR OUTDOOR SPRING VEGETABLE GARDENS



Spring is a great time to get your vegetable garden up to speed. If you haven't already done so, it is useful to define arable spaces and only walk in dividing paths, so that soil remains soft. Beds can be filled with spring vegetables and many of you already know common species. However, for a quantum leap, you can take some factors into account:

ROTATIONS

For environmental and productive reasons, it is ideal to always take note of vegetables occupying the different beds each year and not have them in the same ones for the next 2 or 3 growing cycles. It is also useful to know botanical families to which species belong, e.g. tomatoes are solanaceous plants, carrots are umbelliferous plants, chards are chenopodiaceous plants and so on.

SPECIAL VEGETABLES

Besides classic vegetables, those who are in the mood for experimenting can grow parsnips, a kind of white carrot that was grown in the past, or borage, of which leaves are eaten and flowers are very attractive to bees, or many other unusual species.

SUCCESSION PLANTING AND TRANSPLANTING

To avoid harvesting at the same time more salads, green beans or courgettes than you can eat, organise several cycles of seeding or transplanting so that they are at least 2 to 3 weeks apart.

SCARECROWS

You can reuse some old CDs, jars or plastic bottles to make fun and creative scarecrows.



TIPS FOR VEGETABLE GARDENS FROM SUMMER TO WINTER

SUMMER

1 WATERING: HOW MUCH AND HOW?

It is a well-known fact that vegetable gardens need to be watered in summer: it is hot and the sun is strong. The main difference in water management is first and foremost between plants grown in a vegetable garden and plants grown in pots, as the former develop their roots deep down and are therefore more autonomous.

Potted plants

Plants that are grown in pots, planters or containers need to be watered more, especially if these containers are made of terracotta, which is more breathable.

Tips:

- Do not water with cold water to avoid stressing roots;
- Irrigate by wetting the plant base and not the aerial part because moisture on the stem and leaves attracts fungi leading to plant diseases;
- Collect rainwater or reuse waste water after washing fruit and vegetables to reduce waste of water resources.

2 PREVENT SUNBURN

Seedlings in the seedbed should be protected from excessive light by means of a shading net to be kept over them at least during the hottest hours. When growing on a south-facing terrace or balcony and close to light-coloured walls, it is important to use protective screening that attenuates incoming light.



3 MULTIPLYING AND CARING FOR STRAWBERRIES

Strawberries have a natural ability to produce stolons, i.e. creeping stems at the end of which a new seedling is generated. In summer, new seedlings can be separated from their stolons and planted elsewhere after checking they have a minimum of roots. The pot in which they are to be planted should be fertilised, preferably with natural products, and the transplanting distance should be at least 25 cm.

Mother plants that have borne fruit or are still producing should be given some more attention. In particular, it is important to remove dry leaves and those affected by scab (a fungal disease leading to the appearance of many circular spots that can be seen on the leaves). Be careful not to water them too much, otherwise you may get botrytis, another common disease of strawberries.

AUTUMN



4 THE RICH UNIVERSE OF AUTUMN CABBAGE

The term "cabbage" defines a very wide and interesting range of vegetables, which are usually associated with autumn and winter. To harvest them at these times, it is important for seedlings to be transplanted in summer, roughly by mid-August in southern Europe. This is due to the fact that the first stage of their cycle must benefit from summer heat and still fairly long days.

What cabbages to choose

If you have a small vegetable garden or a balcony, you should choose kohlrabi, kale and curly kale, which take up little space and perform well. Seedlings can be planted only 30 cm apart in soil that has been well fertilised with manure.

When growing in pots, you should use containers having a diameter and depth of at least 30 cm for each seedling. Several plants together can only be kept in larger containers, such as planters or boxes.



5 PLANTING FRUIT PLANTS

If you feel like adding a fruit plant to your vegetable garden or terrace, autumn is a good time to plant it. Whatever your preference (apple, pear, plum, apricot or other), you should choose a location that is sufficiently lit and sheltered from prevailing wind.

Potted plants cannot grow to their full potential on a balcony, it is therefore better to opt for species that already have a limited growth potential, such as blueberries, currants, raspberries and even goji, which, although exotic, can be grown very well in southern Europe.

AUTUMN/WINTER

PLANTING PEAS AND FAVA BEANS

Peas and fava beans are planted mainly in late winter or early spring, but you can also try it in autumn. In the event of severe winter cold, plants can be covered with non-woven landscape fabric.

TIPS FOR VEGETABLE GARDENS FROM SUMMER TO WINTER

Production will take place in spring as growth stops in winter, but at least it will be earlier than it would be with late winter/early spring planting. In autumn and winter pea and fava bean plants do not need watering: rainfalls are generally sufficient to meet their needs.

Growing on a balcony

You can also grow peas and fava beans on your balcony because, although you cannot expect large harvests, it will still be satisfying to watch them grow and produce. In a pot that is at least 30 cm high and 30 cm wide, filled with good potting soil and a light handful of manure, you can plant 5 or 6 seeds in a small circle at the centre of the pot. A tuft of seedlings will grow that will produce pods in spring.

ANNUAL

7 COLLECTING MARIGOLD SEEDS

Marigold is one of the annual flowering species that are most suitable to be combined with vegetables or to embellish borders. It is also one of the flowers from which it is easier to take seeds and have them available the following year without having to purchase them again. You will notice that the corolla of withered flowers turns brown and dries out. You will only have to move it around in your hands to notice that it crumbles and comma-shaped parts come loose: these are the seeds that you can then store in a jar in a cool place until the following year.

Make sure that flowers are completely dry, discard those that are still partly green or wait until they have completely dried out. Growing annual flowers in your vegetable gardens and balconies is good for the environment and for biodiversity and it also attracts beneficial insects: always provide at least one corner for them.



8 SETTING UP A SMALL GREENHOUSE

If you want to extend the growing season as much as possible, a greenhouse can be a great help, but if you want to benefit from it in autumn, it is better not to wait until the beginning of the season to set it up. Various models are available on the market, even though it is not complex to build a greenhouse from scratch using wooden poles and transparent covering material such as plastic sheeting, glass or Plexiglas. Tall options with shelves are recommended for balconies, so as to exploit vertical space and save room, and in this case they will be used to protect potted perennial plants, cuttings that have been put in to take root, sown vegetables and ornamental succulents. In early autumn you can plant as much spinach, lamb's lettuce, rocket and chicory as you like inside the greenhouse to have fresh salad until winter. Always keep a watering can full of water inside it, so that you can water at the same temperature.

TIPS FOR INSECT ISSUES:

- **Garlic and onion macerate:** to be sprayed on plants, useful as a repellent for aphids and Asian bugs.
- **Burnt wood ash or chopped eggshells:** to be spread on the ground around the plants to keep slugs away.
- **To keep away popillia,** the black and shiny scarab beetle, simply pick it up and move it away from your plants.
- **Wrap your plants in insect netting** or treat them with azadirachtin (neem oil) to protect them from common pests.

BALCONY VEGETABLE GARDENS

AND FOR YOUR GARDEN TO BE GLOBAL?

Look at the origins of your plants, fruits and flowers and place them on a planisphere or globe to discover how sometimes what we consider to be “typical” can have a history coming from far away.

Share the techniques you are experimenting with your friends, classmates and relatives, also through social media, gather tips on how to improve and maybe even launch a “gardening” challenge or contest!

Scatter seed bombs and unusual pots in forgotten corners of your town.

Start a community garden by involving your neighbours or your neighbourhood to build communities starting from the ground.

Promote school and youth centre gardens to involve more and more youngsters!

ACRA is a Milan-based non-governmental organization, engaged for over 50 years in the fight against poverty and in international cooperation on: food, education, water, energy and environment. In Europe and in Italy it fosters a culture of dialogue, integration, intercultural exchange and solidarity. For more than 20 years it has been implementing projects, initiatives and workshops on Active and Global Citizenship Education.

ACRA, via Lazzaretto 3 - 20124 Milan, Italy
CF 97020740151 - T +39 02 27000291
www.acra.it

“Global vegetable gardens for small spaces” was produced by ACRA with the scientific contribution of *Sara Petrucci*, agronomist.

Graphic design and layout by *Chiara Baggio*.

Adapted from a publication with the contribution of *Fondazione Cariplo*.

Translated from Italian by *Valentina Gianoli*.

Food Wave - Empowering Urban Youth for Climate Action - is a project promoted by the Municipality of Milan with ACRA, ActionAid Italia, Mani Tese and 26 other partners (18 Local Authorities, 8 Civil Society Organisations). Food Wave has the aim of increasing knowledge, awareness, and engagement of young people on sustainable patterns of food consumption and behaviour. The project is co-funded by the European Commission in the framework of the program DEAR - Raising public awareness of development issues and promoting development education in European Union. The project is developed in over 21 locations across 17 countries (16 within the European Union and 1 in the Global South - Brazil). The global network C40 is also an associate of the project.

www.foodwave.eu - info@foodwave.eu
Facebook / Instagram @foodwaveproject



CO-FUNDED BY
THE EUROPEAN UNION



PROMOTED BY
Comune di
Milano



This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of ACRA and do not necessarily reflect the views of the European Union.

This work is licensed under a Creative Commons Attribution - Non Commercial - ShareAlike 4.0 International License.





CO-FUNDED BY
THE EUROPEAN UNION



PROMOTED BY
Comune di
Milano



ACRA