

# Practical guide to pot veggies

A small guide to sustainable cultivation in reduced spaces



## Table of Content

<b>Why grow a whole vegetable garden in pots?</b>	<b>3</b>
Limitations	3
<b>What do you need?</b>	<b>3</b>
<b>Light: Sun Exposure</b>	<b>4</b>
<b>First step: choosing the right vase/pot</b>	<b>4</b>
The shape of the pot	5
Vase Material	6
<b>Substrate</b>	<b>6</b>
Which soil to start with?	6
Composting at home	6
How to get started?	7
Where to place the container	7
What to do	7
Green Matter (N)	7
Brown Matter (C)	7
Oxygenation and humidity	8
Three simple moves	8
How long should we wait?	8
How to use compost	8
<b>Water: irrigation</b>	<b>8</b>
On holiday	9
<b>Seeds</b>	<b>9</b>
Keyword: heirloom	9
Reproduction of seeds	9
<b>CULTIVATION TECHNIQUES</b>	<b>11</b>
<b>Sowing</b>	<b>11</b>
The seedbed	11
How to sow	11
<i>Saving seeds</i>	<i>12</i>
<b>Plant Nutrition</b>	<b>12</b>
What not to use	13
<b>Problems and natural remedies</b>	<b>13</b>
<b>Conclusions</b>	<b>15</b>
<b>Authors</b>	<b>16</b>
	<b>16</b>

# PRACTICAL GUIDE TO POT VEGGIES

Through this small guide we will walk you to the discovery of pot cultivation so you can start your own garden even in small spaces, such as city balconies.

*The only compromise: avoid synthetic chemicals and use only sustainable farming methods.*

## Why grow a whole vegetable garden in pots?

Having a small garden on the balcony does not mean to be completely self-sustainable, but it is a great way to get closer to cultivation, enjoy the relaxation it provides, have some quiet time, and treat yourself in the kitchen! You will discover that vases can provide beyond enveloping fragrances, but also tomatoes, kales, carrots, lettuce, radishes and many other vegetables to delight your palate.



Last but not least, you can also learn the techniques to reproduce your own seeds from your own plants.

### ***Limitations***

The only limitation is sun exposure: to cultivate on balconies or small gardens we absolutely need enough sunlight to be able to bring fruits to maturation, and to grow healthy plants, at least four hours of direct sunshine per day.

## What do you need?

In order to cultivate, we need a few things:

- Light
- Proper sized vases/pots
- Substrate (soil or self-produced compost)
- Water
- Seeds of varieties that are suitable for pots
- Some small tools such as a shovel, scissors and some cordel.



## Light: Sun Exposure

Light is important for the growth of all plants, and garden plants are no exception. Urban cultivation can be restricted *by the excess of shading sources such as buildings near the balcony or inappropriate exposure of the terrace.*

Depending on the type of vegetable, we will need a minimum time of direct sunlight: according to the table below you can choose what would be suitable for your location.

Direct exposure to sunlight		
Less than 4 hours	Between 4 and 6 hours	Sun Lovers
Aromatics, Celery, Chard, Chicory, Garlic, Greens, all kind of Lettuce, Parsnip, Radish, Spinach.	Beans, Beets, Basil, Cabbage, Carrots, Coriander, Fennel, Gherkins, Kale, Kohlrabi, Onions, Pack Choy, Parsley, Turnips.	Cucumbers, Eggplants, Melons, Okra, Peppers, Sunflowers, Tomatoes, Tomatillo

The ideal garden would be a place that receives light either in the morning or in the afternoon. Balconies located on the north are penalised for both, temperature and lack of exposure. Those who receive light all day may be overexposed, in the middle of summer a shading net might be necessary, especially if the walls of the house are white and therefore reflective.

### First step: choosing the right vase/pot



How big should it be? this is one of the most frequent questions,

There is actually only one correct answer: as large as possible.

We then talk about the minimum measures for the correct development of the plant.

## ***The shape of the pot***

The pot should follow the plant in terms of shape and size: Tomatoes, Beans, Zucchini, Luffa, Chard and other plants of erect bearing need deep containers (minimum 12" x 12"), because the roots will support the foliage, the same goes for those with deep or thick roots: Salsify, Chard, Kale, Kohlrabi. The cucurbitaceae, like Melons, Watermelons and Pumpkins, Gherkins prefer large, even shallow vessels (20" x 8"). For Radishes, Carrots, lettuces, Chicories, we can use long, narrow pots, even shallow ones. Table 2 will help you in your choice.

<b>Tab. 2 Vase shape and dimensions</b>	
	12"x12": Aromatics, Basil, Beans, Beets, Cabbage, Chard, , Eggplants, Kale, Kohlrabi, Fennel, Gherkins, Okra, Parsnip, Pepper, Round Turnip, Dwarf Sunflowers.
	20"x8": Basil, Carrots, Fennel, Celery, Chicory, Coriander, Greens, Garlic, Lettuces, Parsley, Pak Choy, Radish, flat Turnips
	25"x8": Chicory, Lettuce, Melon, Round Carrots, Round Radish, Watermelon

## ***Vase Material***

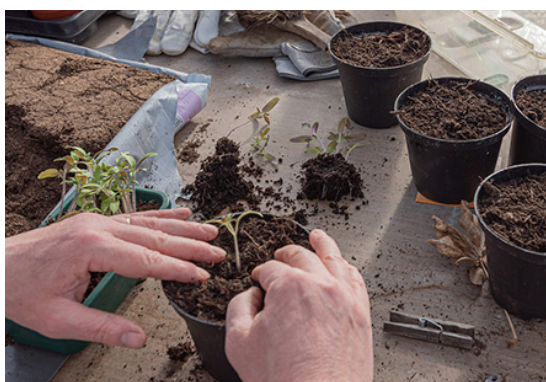
Vases come in a number of diverse materials, from finely decorated terracotta vases to the most aseptic plastic vases, less aesthetic but certainly very practical, up to jute canvas vases. In the end, it is a personal matter and depending more on one's own needs than on the characteristics of cultivation. Choose the material you like the most.

*A little trick: add a few copper filaments to the pot dishes, it will prevent the formation of mosquito larvae, making your balcony more pleasant.*

## **Substrate**

The substrate or soil is clearly a fundamental point for successful cultivation. Unfortunately, in pot cultivation "the nourishment" available to the plants tends to end quickly, so, apart from Carrots and Radish, you have to fertilize your plants to make up for the shortcomings, but that is no reason to worry, it is a simpler operation than you think ( see chapter "cultivation techniques).

### ***Which soil to start with?***



We recommend, specially when you are a beginner and less experienced, using organic vegetable garden soils found in common plant nurseries. It is not necessary, as often recommended, to expone clay on the bottom, quality soils are designed with a tissue that is suitable for cultivation.

### ***Composting at home***

Producing your own compost is an easy, and above all, ecological operation; by using kitchen waste we could produce excellent soil to feed our plants while obtaining a balanced, and most importantly, sustainable product.

### ***How to get started?***

First of all, you have to choose the right container, you can build it yourself or buy it, they are easily available and cheap. To obtain compost on a balcony or in a small

garden, there are precautions to be followed in order to speed up times and have a good coexistence (avoiding the bad smells of agricultural compost).

**Where to place the container**

Place the container in a matter that it catches sun during the winter and shade in the summer, the composting process takes place in a humid environment, non excessive temperatures (above or below) will help the process.

**What to do**

The process consists of layering up the remains of food and the scraps of the crop (leaves). It is important to overlap the different materials, we will call Green and Brown, we will add twice as much brown matter for one contribution of green (tab 3):



<b>Tab 3 Materials to layer</b>	
<p style="text-align: center;"><b>Green Matter (N)</b></p> <ul style="list-style-type: none"> <li>● Vegetable peels and waste</li> <li>● Grass mowing</li> <li>● Food leftovers</li> <li>● Pasta (raw or cooked)</li> <li>● Stale bread</li> <li>● Parts of green plants</li> <li>● Citrus peel (chopped)</li> </ul>	<p style="text-align: center;"><b>Brown Matter (C)</b></p> <ul style="list-style-type: none"> <li>○ Dry leaves</li> <li>○ Shredded dry branches</li> <li>○ Nuts and shells (chopped)</li> <li>○ Wood sawdust (untreated)</li> <li>○ Thin/ light paper</li> <li>○ Straw</li> <li>○ Coffee grounds</li> </ul>
<b>Materials to avoid</b>	
<p>Meat and fish, paper towels or cardboard, animal litter waste, chemicals, overgrown scrub/weed, ash, inorganic materials.</p>	

### ***Oxygenation and humidity***

Once the materials have been layered at the right ratio, we must mind that the process takes place correctly; we wet the mixture making sure it remains moist while periodically turning and stirring it to allow the aerobic process. Tip: just touch the container with your hand, if you feel an excessive temperature it is time.

### ***Three simple moves***

- Fill the container alternating green and brown in a 1 to 2 ratio
- Water for the first time and keep constantly moist
- Rotate the compost periodically

### ***How long should we wait?***

Following the points listed above, the compost produced in spring will be ready in autumn, whereas the one produced in autumn will be ready for spring.

### ***How to use compost***

Compost will be ready to use when it has a "clean", odor-free appearance, it can be used as a soil improver by adding it slowly to the pot as the plant grows, it will guarantee strong, productive plants, as well as an excellent taste of the fruits. Compost is very balanced and there is no risk of harm as there is when using chemical fertilisers.

### **Water: irrigation**

Do not underestimate this operation: the pot, compared to the actual soil, will tend to dry out sooner, whereas it is also easy to exaggerate with the water and stress the plant. The soil must be kept moist, never too wet, provide water until it comes out of the holes at the bottom of the pot, wait a few seconds and repeat the irrigation. Not all plants need the same amount of water, the most blooming ones will clearly absorb larger quantities. It can be checked often by touching the soil in the vase to make sure it is not too dry; it is important to repeat as much as possible so we keep it moist.



## ***On holiday***

Sometimes we need to be away for a long time and we have no one to care for our beloved plants; we can use a simple dripper that, screwed onto the cap of a normal bottle, will gradually release water for the period we won't be home. Clearly it would be advisable to ask someone to check in periodically, if possible.



## **Seeds**

Not all varieties of the same species are suitable for pots, this type of cultivation entails some stresses that requires plants suitable to withstand it: reduced amounts of soil and nutrition, water stress, non-optimal exposure; fortunately, there are many heirloom varieties suitable for this purpose, commercial hybrids are normally not good since they are selected for optimal conditions in open ground.

### ***Keyword: heirloom***



Ancient varieties are selected to withstand certain environments, let's take tomatoes for instance, only those with determined growth and resistance to apical rot are good for pots: that is, they do not grow more than a certain height thus limiting the needs of cultivation; moreover, when the pot occasionally dries too much (and it will happen) the berries will not "break". The same with eggplants, although many ecotypes grow well in pots there are significantly smaller varieties, while equally tasty, that are much more suitable for cultivation with low/little soil (see photo), as shown in next table.

## Species and varieties adapted to pot cultivation

Herbals and aromatics	All kinds
Basil	All kinds
Beans	Dwarf: Cannellino or similar (Phaseolus Vulgaris), Tepari (Phaseolus Acutifolius)
Cabbages	Brussels Sproust, Chinese Cabbage, Oxheart,
Chard	Rhubarb, Yellow Chard
Eggplants	Little Finger, Frog eggs, Red (all kind), White Round, Pickling.
Carrots	Paris Market
Chicory	All kinds
Celery	All kinds
Cucumber	Gherkins
Coriander, Parsley	All kinds
Onions	Flats, little ones
Kale	Green Dwarf, Scarlet, Black Tuscan
Greens, Asian greens	All kinds
Fennel	All kinds
Beet	All kinds
Kohlrabi	Vienna (Purple and Green)
Parsnip	All kinds
Radish	Round ones
Gherkin	Green Paris, Cucamelon

Spinach	Black Crow, New Zealand, small kinds
Onion	All best is flat kind
Pack Choy	All kinds
Sunflower, Mississippi	Dwarf one
Melon (experts)	Kiku, All Chitos, All Carousellos
Watermelon (experts)	Sugar Baby (best bush variety)

### ***Reproduction of seeds***

Heirloom varieties will also allow us to reproduce our own seeds for future years, choosing the fruits from the best plants will provide a yearly selection that is better suited to our environment and our growing conditions thus, reducing interventions and difficulties. The seeds are easy to collect and store, with a few plants you will have enough to even distribute to friends and neighbours.

## **CULTIVATION TECHNIQUES**

Let's now look at the practices suitable for proper cultivation

- Sowing
- Plant fertilisation and nourishment
- Troubleshooting

### **Sowing**

Although it may seem a simple operation, it is one of the most important parts of cultivation, small precautions will help you get excellent results.

#### ***The seedbed***

On balcony cultivation you can sow directly in the pots, but if you have the opportunity to use a seedbed this will guarantee a very effective



sowing. The seedbed is composed of small containers (they can be purchased pretty cheap, or recycled from yogurt or sauces , important that they are holed at the bottom), to be kept in a controlled environment (a room, or sheltered corner of the balcony). This way we can keep humidity and external factors under control: like wondering birds looking for worms, they dig holes on pots causing the seed to fall out, or an extremely sunny day could cause the soil to dry too much, hence damaging the seed in its most delicate phase: germination.

### ***How to sow***

Sowing, apart from some rare cases, means burying the seed, the right depth is about one and a half times the length of the seed: pumpkin seeds are about one cm long, hence they should be covered with about 1.5 cm of soil, for a cucumber or melon seed about 0.5 cm long, a layer of soil of about 1 cm will suffice and so on... When covering the seed slightly compact the soil with the tip of the finger and proceed with the first irrigation, watering should be gentle so as not to remove the soil and lose the seed. After that, the soil must be kept moist, minding not to overdo it with the water, the soil must always remain moist; you can cover the containers with a cloth to reduce evaporation if temperatures are particularly high. When the seedling sprouts, move the seedbed to a place where it can receive a few hours of sunshine. When the seedlings have grown the fourth leaf, it will be time to move them into their new home, the pot where they will grow.

### **Saving seeds**

If you grow heirloom varieties (or just any NON F1 hybrids) you can reproduce your own seeds, so you safeguard rare species or varieties and distribute them, hence contributing to agrobiodiversity.



## Plant Nutrition

The pot's soil provides nourishment in the early stages of the plant's development, however, the growing process will exhaust them and the plant will need fertilisation again: "food". Fortunately, pots



respond specially well to natural products, if you have prepared your compost you only need to add it to the pots in the desired amount, the balance of nutrients in the mix will cause the plants to grow abundantly, and the fruits to taste good. Another great soil improver is Earthworm Humus, easily found on the market, very convenient because it takes only a few gr per plant and provides exceptional results,

in this case fertilisation must be done periodically, instructions for administration are found on the package.

Another alternative, is pelleted (in picture) or powdered compost, always minding to anticipate fertilisation since this is slower, but constant, in releasing nourishment, it will gradually nourish your plants throughout the cultivation.

### *What not to use*

The pot offers a limited amount of soil where it is easy to create disastrous imbalances for cultivation; it is better to avoid synthetic products since you can easily make mistakes and, above all, to give it in excess hence irreparably "burning" your beloved plants.




Unfinished compost should also be avoided: bacteria and insects present in fresh compost can lead to root problems and rot.







## Problems and natural remedies

Pot cultivation is usually easier than in open fields: problems such as insects or fungal infestations can be eliminated manually, and, constant contact with our plants will help to quickly notice any of their suffering so we can promptly intervene.

In addition to the macerates you can make on your own, there are many more natural products, mechanical action specially, to eliminate insect infestations, or the onset of fungal diseases; table 5 (it's the last one, I swear!) will help you quickly understand the problem and the solution:

<b>Phytophagous insects</b>		
<p>Aphids</p> 	<p>Neem oil</p> <p>Marseille Soap</p>	<p>Neem Oil: 20 ml in 1 lt. of water, spray on the leaves</p> <p>Marseille Soap: 20 gr in 1 lt. of water, spray on leaves 3 times a day</p>
<p>Cochineal Insects</p> 	<p>Marseille Soap</p> <p>Denatured alcohol</p>	<p>Marseille Soap: 20 gr in 1 lt. of water, spray on leaves 3 times a day</p> <p>Alcohol: 400 ml in 1 lt. of water, spray at hottest hours</p>
<p>Caterpillars</p> 	<p>Manual removal</p>	<p>Remove caterpillars manually and place them in a field or garden</p>

<p>Coleoptera (Beetles)</p> 	<p>Manual removal</p>	<p>Manually remove them, they are often allochthonous and should be eliminated</p>
<p>Snails</p> 	<p>Manual removal</p>	<p>Remove snails manually and place them in a field or garden</p>
<p><b>Fungal disease</b></p>		
<p>Downy mildew</p> 	<p>Bicarbonate</p>	<p>10 g per lt of water, dilute gradually, spray on the leaves at a distance of about 50 cm</p>
<p>Powdery mildew</p> 	<p>Bicarbonate</p>	<p>10 g per lt of water, dilute gradually, spray on the leaves at a distance of about 50 cm</p>

## Conclusions

Growing a small balcony garden, in a small urban garden will not only provide great satisfaction, little kitchen delicacies and, a beautiful view; it will also help us understand how it is possible to use sustainable methods in cultivation, it will allow us to safeguard treasured seeds and share them with others, it will allow us to improve our extraordinary world one seed at a time.

Cercatori di Semi- Terranatura distributes, free of charge, seeds of ancient local Italian varieties that we self-produce in order to spread and encourage their cultivation again and guarantee their survival, this way we hope to help maintain the biodiversity of ecotypes in horticulture, and, therefore, in the whole ecosystem in direct contact with humans. This guide is written for all those who want to reproduce their seeds; cultivation techniques are designed to obtain healthy plants while respecting sustainable agriculture.

[www.cercatoridisemi.com](http://www.cercatoridisemi.com) (Italian)

[www.seedshunters.com](http://www.seedshunters.com) (English and Spanish)

## Thanks!

Thank you for taking the time to read this guide  
Silvia Juliana Galán B, Pietro Segatta and all the staff of  
Cercatori di Semi- Terranatura

*This guide can be downloaded for free at the following link*

*[www.seedshunters.com/resources](http://www.seedshunters.com/resources)*



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