

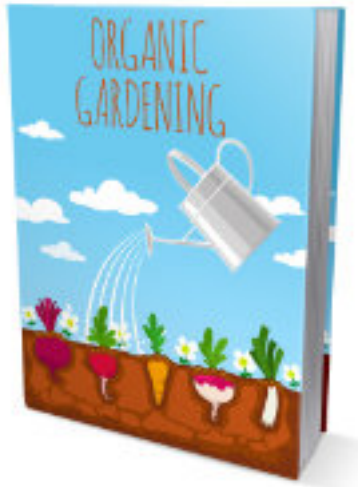
# **The Seven Secrets of Raised Bed and Container Gardening for Beginners**

Unlock 7 Proven Techniques to Craft Your  
Dream Backyard. Design Your Perfect Herbs &  
Vegetable Oasis with Ease.

Ashley Meadows

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# Welcome!

**A**fter a long, stressful day at work, I find solace in my garden. The vibrant greenery and the act of nurturing it provide a much-needed respite. This personal journey in gardening, filled with both successes and failures, has led me to share my knowledge with you.

But I've failed at gardening before. The first set of seeds I planted didn't grow as expected. I tried again and made sure to water it regularly, but I ended up with the same result. It takes more than good seeds and regular watering for great produce.

I later learned everything I needed to grow the garden of my dreams, and you're about to do the same.

By choosing to read this book, I think it's safe to assume that you also like the idea of plucking fresh vegetables and herbs from your garden whenever you want. Maybe even try out a few recipes you've seen online. But your black thumb showed up every time you attempted to grow something. And just maybe, you've never had any failed attempts at gardening or any attempt at all. You are probably just getting started and need someone to show you the ropes. It is also possible that you love the idea of gardening, but your space is small, or you are experiencing soil challenges. No matter your category, this is just the book for you.

Many beginners face challenges in gardening, often not due to their 'green' or 'black' thumbs but rather their approach. This book takes a unique approach, focusing on changing and starting with the right approach, to help you become a successful gardener.

With this book, you no longer have to do trial and error. Instead, you will learn how to effectively design, plant, and maintain thriving container and raised bed gardens. Why? The successful

gardening process has been broken down into steps, each chapter building on the previous one. You'll start from the ground up, literally. You'll first learn how to lay a solid foundation for your plants to thrive, then move on to soil (which can make or break your garden's success). After that, you'll learn how to care for your plant without necessarily holding a hose or pruner every free minute you have. Then, you will find tips for maximizing your yield and, finally, turning your produce into supper.

Like I said, I've experienced failures before I experienced successes. So you'll have first-hand access to the steps and strategies that worked for me and will work for you. The advice I'm giving you has been tested and trusted, and following it, you will be able to transform your neglected patio or yard into a thriving garden. And maybe your garden will be a safe space to de-stress or relax like me.

Are you ready to grow and eat fresh, organic vegetables and herbs? Then roll up your sleeves, and let's get gardening.

# **Chapter 1:**

## **Basics of Raised Bed and Container Gardening**

**J**ust because you have limited gardening space or the soil in your free space kills plants instead of helping them grow shouldn't stop you from starting a garden. I used to be envious of other people's gardens. I'll look through the window in their backyard and desperately wish I could grow my garden too, but I didn't have the space for it – or so I thought. Turns out, I could grow a garden despite my teeny-tiny yard, and you can too. In this chapter, we'll explore the innovative methods of gardening that differ from the traditional dig-a-hole in the ground we know. I'll let you in on a secret, even those with large yards and perfectly good soil in their yards mostly prefer containers and raised bed gardens.

Why? Because if done right, you'll get a more controlled garden with less risk of pests and diseases, you'll get multiple harvests all through the harvest season, you'll get an aesthetically pleasing garden, and yes – more space.



Figure 1.1

## Container Gardens

**Y**ou don't need a big garden to start gardening; if you want to start small, this is probably the right gardening method for you.

Container gardening, as the name implies, simply means growing plants out of containers instead of out of the ground. By container, I mean anything that can hold soil and has drainage. So, it could be your old boxes, hanging baskets, or repurposed items like old boots or teacups. You're good to go as long as they're placed in spots where they can access 6 hours of sunlight.

Containers are not only for flowers. Some of your vegetables will also gladly grow in them. You can plant your annuals in them or even your dwarf evergreens and perennials. As a beginner, you can use herbs like basil, cilantro, mint, and parsley. Or vegetables like tomatoes, peppers, radishes, lettuce, or even flowers like marigolds, petunias, and pansies. Hardy perennials and shrubs like hostas, daylilies, and ferns also work out great. You can put your containers in any convenient space: on the ground, on your windowsill, or even hang them from your porch. They can be large, small, or medium-sized.

So, what kind of containers can you use? Let's first look at the different container materials available.

We have plastic containers. They are usually lightweight, so you can easily move them when cleaning your garden area or even changing your plant's locations. They are also quite cheap and come in different shapes and sizes, so your options are not limited. The problem with plastics is that they deteriorate over time after long exposure to sunlight or other harsh weather conditions. But if you want your plastic containers to last longer, you need to ensure they're not thin and quite sturdy. They should also be flexible and not stiff. Another pro of these plastic containers is that they retain moisture well.



Figure 1.2

Then, we have the classic terracotta pots. These pots are aesthetically pleasing, but that's not their only benefit. They're also porous, which means they allow more air and water to move through them compared to plastic containers, and this feature helps prevent root rot. However, they also easily break or damage, especially when exposed to extreme cold weather. This is why they're not a suitable choice if the plants you're growing must be outdoors year-round. Also, they're quite heavy, so they're not easy to move around and can fall from your hands and break.

We also have cast-concrete containers, which come in different shapes and sizes, like plastic containers. You can make some yourself if you're handy based on your style. They also last longer when compared to plastic and terracotta containers as they're quite durable. However, they're also quite heavy, so if you'll be doing a lot of moving around or if you want to place your container plants on your deck or your balcony, they're not the best choice. Although, if you want a much lighter concrete pot, you can mix the concrete with vermiculite or perlite.

You can also use wooden boxes. Their rustic look is quite aesthetically pleasing, and they are also good insulators, which can protect your plants on warmer days. However, wood can rot, which will prevent them from lasting long. You can prevent wood rot by treating your container with a non-toxic preservative (don't use creosote; it's toxic to plants) or using rot-resistant wood like

cedar.

Metal containers are also durable and sturdy. However, they get really hot during warmer weather conditions, stressing your plants out.

When choosing your containers, size also matters. The container you go for, irrespective of the container material, should be able to accommodate the root systems of whatever you're planting. With most vegetables and flowers, your container should have a depth of at least 12 inches. Larger pots are actually the best choices. They hold more soil and retain moisture longer. Small-sized containers, on the other hand, baskets especially don't retain as much moisture and dry out faster, especially during the hot summer weather, so you'll need to water your plants more often. Your space size also matters when picking container sizes. Will there be enough room for your container(s)? Also, do you plan to move your container or not? If you plan to, it should be easy for you to carry both size-wise and weight-wise. You can also maximize your space by using a large tub or container for mixed planting. Just make sure that it has enough root space for all the plants you plan to grow.

Drainage is another important factor to consider when choosing containers. If your container doesn't have enough drainage holes, there will be waterlogging, the number one reason for root rot, leading to dead plants. The holes don't need to be large as long as excess water can drain out of them. Also, if your container has no holes, you can drill holes in the bottom and sides yourself.

With container gardening, you can be as creative as you want. Your creativity can be expressed in your container choices. You can even go for a theme garden, mixing similar colors and textures in a row of containers or the same container (should be large enough). If you feel your plant isn't thriving at a particular spot, you can swap the plant out or move the container to a new spot. You can think outside the pot as well. Maybe go for vertical gardening, window boxes, or even hanging baskets. Have fun.

## Raised Beds

**R**aised beds are another solution to limited space or poor soil conditions. Is your home surrounded by concrete? Is the soil in your yard heavy clay or fine-grained sand? Or does the soil in your area have contaminants like lead? With raised beds, you have more control over the soil environment, and your gardening dreams will no longer be held back by any of those surface problems. They are like big elevated containers, but instead of using pots and whatnots as in container gardening, you build a frame and fill it with soil. You can build the frame using wood, bricks, or even concrete blocks.

Most of the plants that can be grown in container gardening can also be grown with raised beds, but in this case, you need to make sure that each plant has enough space to grow. You can also grow squash and lemons, cucumbers, root crops, potatoes and sweet potatoes, onions, and eggplants.

Where should your raised bed garden be located? Like container gardens, your raised beds should also be in the sunniest spots in your home so your plants can receive enough sunlight to fully mature. Your raised garden should also have easy access to water. Your convenience also matters. Imagine walking to the other end of your house just because you want to make a quick meal and need to get a few vegetables from a garden. Or walking that long distance after a long, stressful day at work, you'll not be able to care for your plants as often as you should that way.



Figure 1.3

Raised beds are quite expensive, but considering the pros, they're a good investment. With raised beds, you don't need to start amending the soil in your area when you can work with fresh, healthy soil and the soil level is above the ground floor level. Since raised beds are usually higher than the ground level and are mostly built to be very wide, plants grown using this innovative gardening style can grow as much as they can, both deeply and outwardly. Raised beds also allow you to extend your growing time in the fall and spring because they usually stay warmer longer and drain quicker than ground soil. Raised soil also makes it easier to tend to your garden or harvest; you won't have to bend too much. They are aesthetically pleasing, and my garden looks like an outdoor room because of my raised beds and containers.

The problem with raised beds, however, is that it's not a feasible idea if you plan to relocate in the near future. The structures enclosing the soil are usually built to be more permanent, which is the reason why they're quite durable. But you'll also have to deconstruct these structures before moving anywhere. The soil is also more exposed to extreme weather conditions compared to ground soil, so if the frames enclosing your plants are not thick enough, the soil and plants at the sides will most likely bear the brunt of these extreme weather conditions. And your limited garden space might also mean there isn't enough space for leg movement as you move around your garden.

In Chapter 2, we'll get into raised beds properly, and you'll learn how to build one and care for it.

## Vertical Gardens

I mentioned vertical gardens as one way to be creative with your container garden. Well, in vertical gardening, we don't grow plants outwards. We grow them upwards. You can create this living wall of greenery on your patio, balcony, or even inside your home. Vertical gardening uses any empty corner or blank wall you want to transform. You can use a trellis, a fence, or other

structures.

Vertical gardening has many more benefits than just helping you maximize your space; this gardening method also makes it easy for you to care for your plants and harvest your produce. No bending or kneeling to weed or harvest. Just roll your sleeves, stretch your hands, and get the work done. You won't miss out on mature herbs or fruits that might also be hiding under the foliage.

The plants also grow healthier since there's more leaf exposure to the sun due to the plants not sprawling all over the ground. Also, plants grown vertically are less susceptible to diseases. There's better air circulation when plants grow upwards, making plants dry faster, so you can forget all about moisture-loving fungi like powdery mildew and rust. Since the plants are also within reach or even eye level sometimes, you'll be able to quickly take note of disease and pest symptoms and take action ASAP.

What kind of plants grow best in vertical gardens? The first thing that should come to mind is climbing plants: beans, peas, melons, you name it. You can grow vines like ivy and jasmine or climbing roses that naturally love to climb and trail. Or you can go for herbs like mint, rosemary, thyme, and sage. Leafy greens like lettuce, spinach, and kale also thrive in vertical gardens. Then, you can train fruit trees like apples and cherries to produce fence-hugging forms like fan shapes or single-stemmed cordons. You can also grow succulents like cucumber and squash. Just make sure that the plants you're going to grow against a single structure have similar light and water needs so they can all thrive.

The structure also depends on your choice: wall-mounted planters, trellis, fences, shoe organizers, pallets, old ladders, tripods, t-posts, arches, gazebos, pergolas, netting, bamboo poles, etc. Anyone goes, as long as whatever you're using is sturdy enough to support your plant's weight and has good drainage. Starting a vertical garden can be expensive or affordable, depending on the materials you use. Using a trellis, for instance, will cost more than using a T-post, pallet, or ladder.



Figure 1.4

For your vertical garden structure, you can secure a trellis to the wall, then drill evenly spaced holes into the wall behind the trellis, line the trellis with wall anchors or rawl plugs, then screw in durable and strong L-shaped hooks into each of these holes. You'll place the containers or pots in these hooks. You can also wrap thick and strong garden twines to secure these containers to the trellis. Wrap the twine twice or thrice around the container to spread its weight.

Another way to structure your vertical garden is by reusing old wooden pallets. Some of these pallets are already chemically treated, and you can't use them to grow your plants so the chemicals don't seep in – you want organic produce, after all. To confirm that the pallet wasn't chemically treated, check the stamp for the ICPC logo. This logo can also be accompanied by the letters EPAL, plus HT or DB. If the pallet has chipped or sharp edges or even patches, sandpaper those areas before using them. Then, place the pallet in the spot you want to use or nail it down to be sturdier, fill it with soil, and leave enough space between plants.

Another structure that works great is a vegetable arch. To build this vegetable arch, first, find a sunny yet sheltered spot, then drill holes in the two different spots that mark the space between the arch (this distance should correspond with the width of the cattle panels you will use). After that, I insert the uprights (I use galvanized metal uprights) in both holes. Then, fill the hole back with compost or manure and then with the soil you excavated. Make sure that the uprights are sturdy inside the holes. Then

attach each end of the cattle panels with each end of the poles, and arch it high enough so you don't have to stoop or bend to walk through. Then, secure the panels with the poles using zip ties and trim off the excess panels. After that, you can plant your climbing vegetables. These vegetables usually climb the arch independently, but you can weave it into place if one of your plants takes its time.

Another vertical garden structure is a bean teepee. Bean teepees are very simple and cheap to build, and you can use bamboo canes or any other long canes at your disposal. A teepee usually uses about 6-8 canes. To build it, place a trash can lid at the spot you want to use and push the canes into the ground around it. Then, pull all the canes together at the top and tie them together using a garden twine or strong string. Bean teepees are mostly used for only beans, so plant one bean seed per cane. Then when your bean seeds start growing, you can weave each bean plant around their cane to prevent them from mixing up and growing across canes.

You can hang baskets, tower planters, or wall-mounted pots against blank walls outside or inside your home. Don't forget that access to the sun and a good drainage system are very important.

You can use an old cutting board if you're building your vertical garden indoors. Hang the board in a well-lit area, then fasten your small containers using hose clamps. You can also suspend hanging planters from the ceiling.

## **FAQ:**

### *What are the advantages of raised beds compared to in-ground beds?*

Raised beds are a gardening revolution, offering a plethora of benefits over traditional in-ground beds. One of the most game-changing advantages is the control it gives you over your soil quality. With raised beds, you can create a soil blend tailored to your plant's needs, a blend that's often a magic mix of garden soil, compost, and other organic materials, creating a fertile haven for

your plants. This is a stark contrast to in-ground beds, where you're at the mercy of the native soil, which might not always be the best match for your plants.

In addition to custom soil mixtures, raised beds also improve soil drainage. This aspect is particularly crucial for areas with heavy, clay-like soil that can lead to waterlogging and root rot. Elevated above the natural ground level, raised beds facilitate quicker water runoff. This prevents oversaturated soil and encourages a healthier root system, as roots are less likely to sit in standing water, which can cause decay and disease.

The controlled environment of raised beds also leads to fewer weeds and ease of maintenance. Sanctioned off from the rest of the garden area, raised beds limit the spread of roots and seeds from surrounding weeds, thus reducing the regularity of weeding required compared to in-ground beds. In addition, the soil in raised beds doesn't compact as quickly because there's less foot traffic, preserving its structure and aeration and making tilling unnecessary.

Another key advantage is the extended growing season that raised beds provide. Because the soil in raised beds can be worked earlier in the season and warms faster than the ground soil, the planting phase can start sooner and last longer. Increased soil temperature promotes better plant growth and can lead to earlier harvest times.

Raised beds can offer ergonomic benefits. Since they are elevated, they reduce the need to bend over and kneel, which is often necessary with in-ground beds. This makes gardening more accessible and comfortable, particularly for those who have mobility challenges or experience back pain.

Embrace the practicality of raised beds, a gardening solution that offers a compelling suite of advantages, making your gardening experience more productive, less labor-intensive, and more enjoyable compared to traditional in-ground beds.

## ***What are the benefits of combining raised beds and containers in gardening?***

Combining raised beds and containers in a gardening setting can create a dynamic and highly adaptable space for cultivation. Raised beds, with their well-defined structure and elevation above ground level, provide numerous benefits regarding soil management and plant health. Containers, on the other hand, offer unparalleled versatility and mobility. When these two methods come together, they create a complementary system that caters to various gardening needs.

Raised beds allow gardeners to tailor the soil conditions specifically to the needs of their plants. They can fill the beds with a perfect blend of nutrients and organic matter, optimize pH levels, and ensure good drainage. Raised beds also tend to warm up faster, extending the growing season by letting gardeners plant earlier in the spring and continue later into the fall.

Raised beds offer physical benefits. For many, the elevation means less bending and stooping, reducing strain on the back and knees making gardening a more comfortable experience, especially for those with mobility challenges.

Containers complement raised beds by offering flexibility in garden design. They can be placed on patios, decks, or even balconies, which means gardeners with limited space can still enjoy the benefits of growing their plants. Containers can also be moved around to take advantage of varying sunlight and shade conditions throughout the day and seasons.

One of the greatest strengths of using both raised beds and containers is their control over the growing environment. Plants that have particular soil or water needs can be easily accommodated. For example, if a plant prefers acidic soil conditions, a specific potting mix can be used in a container without affecting the alkaline-loving plants in the nearby raised bed.

Pest management becomes more straightforward as well. Certain pests find it harder to reach plants in raised beds, while others can be managed by moving containers away from infected areas. Additionally, this combination can create a barrier to slugs and other ground pests.

The aesthetic value of combining these methods should not be underestimated. Raised beds provide a structural element that can bring order and clean lines to a garden. Containers can introduce texture, color, and even vertical elements, making a garden a place to grow food and a sanctuary of beauty.

Individuals can create a functional, comfortable, and beautiful growing space by marrying the benefits of raised beds with the adaptability of container gardening. This combination allows for a high degree of customization in plant care and garden layout, inviting gardeners to exercise creativity and scientific knowledge in equal measure to achieve the best possible results from their green endeavors.

## **Takeaway 1**

- Containers, raised beds, and vertical gardens are great options for limited spaces or poor soil conditions.
- Raised bed gardens and certain vertical garden structures are more permanent and best if you're not planning on moving them too often or relocating.
- Water, sunlight, and great drainage systems are important factors to consider when choosing your gardening spot or containers in these innovative gardening models.
- You can have a mixture of all three or two in your garden if you don't want to stick to just one.

## **Chapter 2:**

# **Designing Your First Raised Bed**

**Y**ou've learned about raised bed gardening, its pros and cons and factors to consider when picking your garden spot or location. Now it is time to do some work, as you will learn how to start your raised bed garden from scratch. Roll up your sleeves and get your toolbox ready. Let's get right into it.

### **Picking Your Bed Materials**

**I** mentioned some of the things you can use to build the frames for your raised bed gardening, but you need to put a lot of thought into what material best suits you. There are a lot of things that factor in how successful your garden will be. The materials you use are one of such factors. Each material has its pros and cons and you need to understand this to be able to choose the best for your garden bed.

#### **What factors should you consider when choosing your bed materials?**

If you're all about organic produce, which honestly, we should all be, then you should go for natural materials. To get all-natural, organic, edible produce, the materials you use should be as close as possible to the plant's natural habitat. This means whatever you're going for shouldn't be coated with chemicals or chemically altered.

Another factor you should consider is durability. I mentioned that raised beds are somewhat permanent, so you need materials that will last several sowing and harvest periods, not materials you'll need to change every season. Stone and brick or concrete, for instance, can last almost a lifetime (like our houses). Steels also

last long, but not as much as stones or bricks, and too much exposure to moisture makes them prone to rust. Then, certain untreated woods like cedar, cypress, or even hemlock can last as long as 5-10 years. So I guess that depends on how long you want your garden to last in that particular spot or if you plan to change the frame in a few years.

Affordability is very important. Growing your garden is very important and fulfilling, but if you have to incur debts or go broke because you started a garden, it will sap the excitement and joy out of the process. Cedar is cheaper than steel and metal gardens for instance, but then installing a steel or metal garden is cheaper than installing a concrete or stone garden. And if you want to start small or use something cheap in the meantime, you can go for large clay containers or fabric grow bags.

The materials you use for your raised bed will also determine how aesthetically pleasing they look (if, like me, you care about aesthetics). I personally believe your raised bed garden should match with the rest of the house. Your garden shouldn't stick out like a sore thumb but should be like an extension of your beautiful home. If you live in a modern house, you can go for a steel raised bed. How would you describe your house? Traditional? French? Make sure the material you use blends with the already existing style.

## **The Raised Bed Garden Materials to Choose From**

**W**ood: it is not as expensive as most other raised bed materials and is the most popular choice. A lot of people also prefer to use wood because it is easier to work with, with just a few nails and a hammer, you can make your own frame. It also looks natural and gives your garden a cozy, rustic vibe. The top picks are cedar and redwood because apart from being free from chemicals, they're also resistant to rot and insects, which is why they last longer. Cypress and hemlock also fall under this

category, and hardwoods like oak, maple, walnut, teak, and beach or softwoods like pine, juniper, spruce, and fir. And if you're growing edible plants, stay away from pressure-treated lumber to avoid all that chemical seeping into the soil. If you want to extend the life of your untreated wood by staining or painting it, use a natural treatment like raw tung oil or linseed oil.

When buying the wood boards you'll be using, go for the thickest you can afford. The thicker the board, the longer the bed lasts, so aim for 2 inches and higher. Then, you should understand lumber measurement. For instance, you get a 2by6by8 piece of wood, what does that mean? The first number is the thickness of the board in inches, so that means the piece of wood is 2 inches thick. The second number is a measure of the board's height in inches, meaning the board is 6 inches high. And then the last number is the length of the board measured in feet, which means the piece of wood is 8 feet long. Also, if you're building about three or more garden beds, I'll advise you to go to a local lumberyard. That way you'll be able to assess every piece of wood you get for coloration or defects and check that the pieces of wood are long enough, although slight curves are absolutely normal.

Bricks and concrete blocks: they're another classic option and as you now know, they're also durable and can last a very long time. With bricks, you'll be adding a touch of elegance to your garden, and you can also experiment with different patterns and designs. However, bricks are quite heavy, so the spot you're using as your bed location should be able to carry the weight. Also, make sure you use fresh bricks, not old ones or bricks whose history you don't know. That way, you'll know exactly what is entering your garden and, invariably, your body. The pros of these two is that they're low maintenance and they don't rot or warp like wood. And you can even use their holes for more planting ground when you fill them with soil.

However, most concrete blocks are made from Portland cement. About 15-25% of Portland cement is fly ash, which is a petroleum

byproduct. Unfortunately, fly ash contains different amounts of toxic metals like arsenic, lead, and mercury. The good news is that the soil in your garden absorbs little to no quantity of these toxic metals except if the block gets completely broken into powder form. If you're sure this won't happen in your garden, go ahead. But if you know there's the possibility of something large landing on and breaking your garden bed frame, please try to avoid it.

**Steel:** going for a sleek, modern look? Steel is probably the right choice for you. I know there's the issue of rust when it comes to steel, but if you treat it with a rust protectant, you no longer have to worry about that. Also, since they have thin sides, you can maximize your space better than if you used wood. In spring, the soil in a steel garden will warm faster than in a wood garden. Most steel beds arrive premade, so not much work goes into installing them, although they can be quite heavy. Also, if you have old water troughs you're no longer using, you can turn them into your garden bed frame. You can also choose corrugated metal sheets as they're cheaper, although you will need to put them in a wood frame or attach them to wood corner posts.

**Stone:** stones can last a lifetime as they're the most durable of all bed material choices. However, building a stone-raised bed garden can be quite expensive, but if you can afford it and you're not relocating anytime soon, you should probably go for it. They can withstand any temperature, humidity, and even water intake that your bed will surely experience. And they don't affect your bed soil or plants negatively. They don't need to be coated or painted to maintain their appearance; they're also food-safe.

You can also use materials like a child's plastic swimming pool, wheelbarrow, old garden pots, or whiskey barrels. As long as it is big enough and not chemically treated or doesn't emit any chemicals, anything you can lay your hands on is fine.

## Tools You'll Need to Build Your Raised Bed

**B**efore you start, you must have put together your tools and materials to be within reach when working. Let's look at some of the tools you'll need, especially if you're building a wood-raised bed. You already have most of these tools, although you can find the ones you don't have in any hardware store near you.

First, you'll need a good measuring tape to measure and mark the dimensions of your raised bed garden. The measurements depend on how small or large your space is, as you have to maximize it well enough. If you're building multiple raised garden beds, you'll also need to measure the distance between two beds and ensure that this distance is the same throughout. That will also help you maximize space and prevent your garden from looking disorganized.

Another important tool is a saw. It can be a handsaw or a power saw. Either is fine as long as it can cut into wood and help you cut your lumber to size. You'll need it to cut and trim all excesses, ensuring everything fits right.



Figure 2.1

You need fasteners like screws and nails to hold different pieces of the bed frame together. Both are suitable, although I prefer screws because they're easier to install as long as you have a drill. With a drill, you can drill holes for screws, make pilot holes, and

attach the different pieces of your bed frame. You can also go for screwdrivers if you don't have a drill. You'll definitely need a hammer if you're using nails. With it, you can pound in nails and stakes and make sure everything stays sturdy and secure.

Your raised beds must also be level; you'll need a level for this. An unbalanced bed will most likely result in waterlogging, with one part accessing more nutrients than the remaining soil.

You'll also need to protect your precious hands with good gardening gloves. These gloves can prevent splinters, blisters, and even sharp edges when working. If you want extra protection, you can go for work gloves.

Also, when working, splinters, dust, and nails might fly around, and safety goggles are also very important to protect yourself from them.

Then there are the optional tools like a square or speed square to measure angles so your corners are perfect. You can also get an impact driver to make driving screws into the wood easier. Then, you need a pen, marker, or even chalk to mark your measurements and cuts.

If you have these tools available, it's time to build your raised bed.

## **How to Build a Raised Bed Step-by-Step**

**G**oing straight right into it – the first step is picking your location. I already mentioned that the spot(s) you're using must have access to at least 6 hours of sunlight, but that's not all you need to consider. Another thing you should consider is how level that spot is. If it is hilly, you might need to do some digging to get the ground leveled. If you cannot level the ground, the level is an important tool in your toolbox. That way, you can make sure the raised bed surface is level.

What about environmental factors affecting your raised beds when you're done? I hope it's not the area where water pools after heavy rain. Don't think a raised bed is your solution to pooled

water, as the water can trickle into your bed and cause your plants to drown over time. However, if you have no choice but to use that area, build a drain or a path so the runoff can go around the garden area during a heavy downpour.

Then, prepare the spot. If the area is currently lawned, for instance, don't build your garden there until you've dug up the sod in that area. You can use a shovel for this and start planting in the bed right away or wait until the grass composts. However, if the area is weed-infested, you might need to solarize the area. Solarizing takes a long time, about 4-8 weeks, so you might need to lay off starting your garden. It is actually a good choice as it kills weed growth and even seeds 2-3 inches below the soil surface. It is best done in the hottest summer months because it needs trapped moisture and heat. To solarize, you first need to mow the spot very low to the ground and then wet the area really well.

Then, cover the whole area with clear plastic sheeting and leave it on for about 8 weeks. The reason you should use clear plastic instead of black or plastic is that the sun will be able to really penetrate the soil surface. Ensure the plastic is well sealed and there are no holes so no heat can escape. Check the cover regularly and cover any holes you observe with duct tape.

After deciding on the spot you want, outline the spot you want to use with a string or chalk. Bring out your measuring tape and measure your garden bed spot. Make sure it is not wider than 4 feet. It can be less than 4 feet if you can only access one side of the raised bed, maybe because it is against a wall or fence about 2.5 or 3. Most of my garden beds are 4 by 8 (some are as long as 10-15 inches), although you can also make your bed 4by4. If you're making it 4by8 like mine, you'll need at least 3 pieces of 2by6by8 lumber, but if you're going for a 4by4, you will need just 2 pieces. And if you don't have a saw at home, the guys at the lumberyard can help you cut the pieces in half. For the 4by8, you only need to cut a piece in half for both ends, but for the 4by4, you should cut both pieces in half.

If your lumber pieces were not halved at the lumberyard, measure and mark the halfway point and cut one or two, depending on the size you want.

The next thing to do is drill two pilot holes at the end of each plank. The ends of each plank will overlap the next, so keep this in mind when drilling the pilot holes. Meaning on one end of the plank, you'll drill the holes 1 inch near the edge of the plank, and on the other end of the plank, you will drill the holes halfway the 2 inches thickness of the edge. Also, when drilling the pilot holes, make sure you use a drill bit that is slightly thinner than the screws you plan to use.

After cutting the wood to size and drilling the pilot holes, the next thing to do is assemble the bed. Lay out the bed so each plank piece overlaps the other to form a rectangle or square, depending on your preferred size. Then screw the walls together using long screws or nails. They need to be long enough to secure each wall to the next for a snug fit. You can add braces or corner brackets for extra stability if you like.

Then, take out your level and ensure the bed is level from side to side and front to back so the soil stays put and your plants grow straight.

If you want your raised bed to be higher, especially to keep small animals out, you can stack two different frames. To do this, build another bed frame following the above instructions and then place them on top of each other. You can use a square to check if the frames are in alignment with each other. Then, you can add braces or corner brackets to each end. Or, have four different posts that are 2by12by2. Then, drill 4 holes through these posts (the distance between these holes should be equal) and drill corresponding holes to the four corners of the bed frames, about 1 inch away from each corner (preferably on the wide face). Put a post inside the corner of the stacked frame and screw or nail through, and repeat this process at the three remaining corners.

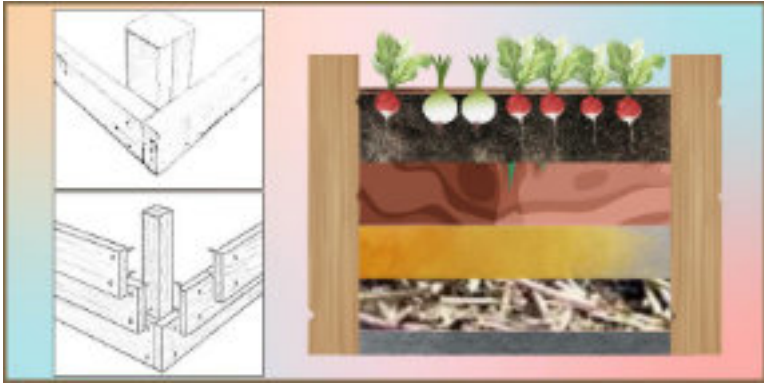


Figure 2.2

In Figure 2.2, You may see the structure of Raised Bed layers. At the very bottom, a metal mesh prevents moles and other pests from entering the garden bed. Next, a layer of large branches or stumps is added, followed by a layer of smaller branches and leaves. These two layers ensure proper drainage for the bed. Then, a layer of coarse compost and old grass is laid down, followed by a layer of fertile soil. Finally, a thin layer of mulch is spread on top. Mulching helps retain moisture, protects the soil from pests, and shields it from direct sunlight.

Another option when using concrete bricks or stones is to create a cement footer. This involves laying prepared cement around the dimensions of your garden spot, providing a more secure and durable foundation for your garden bed. Before you do this, you'll need to measure and mark out the dimensions of your garden bed as usual. After this, you can stack the bricks or stones side by side on the bed spot and even stack one or two more layers. If you're doing more than two layers, though, it might be advisable to call a guy. You can drylay them, meaning you won't secure them with cement, although that's not as durable as using cement as an adhesive between different stones or bricks.

Your garden is ready, and we'll soon fill your raised bed with soil and plant it.

## Maybe You Want to Buy a Ready-Made Set

**R**aised bed gardening offers many choices, including crafting one's beds or opting for ready-made sets. For beginners, ready-made raised bed kits can simplify the process, encapsulating convenience and efficiency while reducing the time and potential stress associated with gathering materials and construction.

The market for ready-made raised bed kits is vibrant, providing solutions that cater to varying aesthetic preferences, functionality needs, and budget constraints. These kits often come with pre-cut and pre-drilled pieces of wood or other materials and all necessary hardware. This makes the assembly straightforward, often requiring nothing more than a screwdriver.

One of the popular brands in the USA is Greenes Fence Company. Their cedar wood raised garden beds are esteemed for their durability and resistance to rot. Cedar is a choice material for raised beds due to its natural oils that repel pests and resist decay. Greenes' kits come in various sizes and can be found in numerous retail and online stores, which speaks to their wide accessibility for garden enthusiasts.

Another noteworthy contender is the Gronomics brand. Their rustic elevated garden beds are crafted from 100% Western Red Cedar and feature an elevated design that eliminates the need to bend over while tending to plants, which is incredibly beneficial for gardeners with limited mobility.

For those who prioritize sustainability, Birdies Garden Products offers metal-raised bed kits fabricated from galvanized steel, ensuring longevity and durability. These beds are modular, providing flexibility with the shape and structure of the garden design, allowing gardeners to tailor their setup to fit individual spaces.

Lifetime also presents an option for those preferring a polyethylene construction. These raised beds promise a wood-like

texture without maintenance, and the material ensures the beds won't crack, chip, or peel.

Vego Garden specializes in modular metal raised garden bed kits. These kits boast ease of assembly and offer flexibility with their height and shape. Their eco-friendly approach, using zinc and aluminum alloy, ensures the beds' longevity.

When exploring variants for buying a ready-made set for raised bed making, the vast selection becomes evident to cater to every gardening desire. While the brands mentioned are popular in the USA and widely recognized for their quality and user-friendly designs, the list is not exhaustive.

## Takeaway 2

- When designing your first raised bed, consider your plants' specific needs and the space you have available.
- Use durable materials such as natural wood, composite decking, or even recycled plastics to ensure longevity and sustainability in your garden.
- You'll require basic tools like a saw, drill, screws, and measuring tape to construct the bed.
- Follow a step-by-step guide for building the bed, carefully measuring and assembling your chosen materials.

# Chapter 3:

## Planning Your Garden

**P**lanning your raised bed and container garden is an invigorating first step toward creating your own green sanctuary. This chapter will guide you through the essential considerations necessary to build a thriving and productive garden tailored to your space and needs.

From assessing sunlight patterns to choosing soil and understanding plant compatibility, each decision is significant. You'll learn to visualize the layout and determine how to integrate raised beds and containers to maximize your growing area.

Whether you're an avid gardener seeking to refine your approach or a beginner eager to plant your first seedlings, this chapter will provide you with the foundational knowledge to build a flourishing garden. It's time to transform your vision into reality, one bed and one container at a time.

### Planning Your Garden For Maximizing Sun Exposure - Secret #1

**T**he most common mistake beginners make when planning your garden is not considering the sun's movement. As a result, things might not go as planned. Sunlight is crucial for plants, and it's important not to make this mistake. Therefore, this is the most important secret: properly position your containers and beds to maximize sunlight.

#### **Secret #1 - Maximize sunlight.**

Maximizing sun exposure in your garden is equivalent to

harnessing the energy required for your plants to flourish. The art of planning a garden layout begins with understanding the movements of the sun and the way light interacts with land. Sunlight is the lifeblood of your garden, and getting this aspect right can dramatically increase the health and yield of your crops.

The journey of planning for maximum sun exposure commences with observation. Take note of how sunlight falls across your potential garden space throughout the day. This practice should ideally span across different seasons to accommodate the sun's changing position. You aim to locate the sunniest parts of your yard—an area with a south-facing exposure often receives the most light for gardens in the Northern Hemisphere.

An often underestimated aspect of sunlight is its qualitative difference throughout the day. The morning sun, typically from the east, is more incredible and less intense than the strong afternoon sun from the west. This plays into how you place plants with differing light requirements. Vegetables that thrive under full sun, such as tomatoes and peppers, should occupy spots that receive prolonged midday and afternoon light. In contrast, those prone to wilting under intense rays—like lettuce or spinach—are better suited for areas with partial shade or morning sunlight.

Considering the sun's trajectory, raised beds should ideally run north to south, allowing plants to receive ample sunlight throughout the day. Taller crops should be situated on the north end of your beds to prevent them from casting shadows on shorter plants to the south.

Consideration of shadows from nearby structures and trees cannot be ignored. Seasonal changes, particularly in deciduous trees, can significantly alter the light landscape of your garden. A spot that is sunny in spring, when trees are barren, could become deeply shaded by summer. It's crucial to predict these patterns to avoid suboptimal plant environments.

The impact of maximizing sunlight continues beyond the bed level. The inclination of the beds themselves influences light

capture. A slight slope facing the midday sun can facilitate more direct illumination of the plants. However, be cautious, as sloping land requires adequate erosion controls to prevent the washing away of nutrient-rich topsoil.

The goal in all of these considerations is consistent: to create a planting environment bathed in the best possible light. Like fitting pieces together in a complex puzzle, adapting your layout to the available sunlight is both a challenge and the key to unlocking the full potential of your raised garden beds.

## **FAQ:**

### *How can I determine the sunniest parts of my yard for optimal sun exposure in my garden?*

To determine the sunniest parts of your yard for optimal sun exposure in your garden, you can follow a simple yet effective process. Understanding where sunlight falls within your garden is crucial for the health and productivity of your plants, as most vegetables and herbs require a minimum of six hours of direct sunlight per day. Here's a method that incorporates the use of a helpful website:

Observe Sun Patterns: Spend a few days observing the patterns of sunlight and shade in your yard. Take note of how the light shifts throughout the day, especially during the peak growing season. You'll want to identify areas that receive the most continuous sunlight.

Use Suncalc.net: Visit [suncalc.net](http://suncalc.net), a website that provides sun position, sunlight phases, sunrise and sunset times, as well as a solar path map for any day of the year. By entering your location, you can get a visual representation of how the sun travels across your specific location. On the website, you'll see a map of your area and a sun path diagram that shows the trajectory of the sun across the sky at different times of the day. This can be immensely helpful in planning your garden layout as it gives you an idea of which areas will receive full sun and at what times. Here's how to

utilize the site:

- Enter your location in the search bar to find your property.
- Select the date for which you'd like to track the sun's path. You should check the path on both solstices and equinoxes to understand the variations throughout the year.
- Move the time slider to see how shadows might change over the course of the day.
- Assess where the longest and most intense sun exposure occurs according to the sun path.

**Garden Layout:** With your observations and [suncalc.net](http://suncalc.net) information, you can draw a garden layout map. Indicate which areas get full sun, partial sun, and shade. This is especially helpful when choosing the location for sun-loving plants and those that might benefit from a little afternoon shade.



Figure 3.1

By using your observations along with [Suncalc.net](http://Suncalc.net), you can effectively plan the placement of your garden to ensure that your plants receive the optimal amount of sunlight they need to thrive. Remember to account for seasonal changes, as the sun's path can vary significantly from summer to winter.

## Planning and Building Irrigation System - Secret #2

The irrigation system is the second very important aspect in planning your container and raised bed garden. You won't believe it, but plants need water. Almost every day, you'll need to water them for quite a while, taking up your time. Instead of stepping out into the backyard in the morning, turning on a faucet, and enjoying your coffee, you're stuck with a garden hose and dirty hands. Therefore, the second most important aspect of building your dream garden is setting up a drip irrigation system. It's the most convenient option. We'll briefly discuss other irrigation systems, but a drip irrigation system is the most effective, convenient, and beneficial for your garden's health.

### **Secret #2 - Install a drip irrigation system.**

Watering is not merely a chore; it is a critical and constant element of gardening that ensures the vitality and health of your plants. Every day, plants need water to facilitate their growth processes, including photosynthesis and nutrient transport.

Proper watering contributes to a garden's success, but doing it manually every day can be a tiresome and time-consuming task. To ensure your plants receive the necessary hydration without the daily hassle, a well-designed irrigation system is indispensable. It automates the process, providing consistent moisture tailored to the specific needs of each plant. This automation not only saves you from the daily duty of watering by hand but also can lead to more efficient water use and healthier plants.

Investing time in planning and building a suitable irrigation system can result in numerous benefits such as:

- **Consistent Moisture:** The system will deliver a steady supply

of water, reducing stress on plants that can result from irregular watering.

- **Time Efficiency:** Automating the watering process frees up your time, allowing you to focus on other gardening activities.
- **Water Conservation:** A well-designed system minimizes waste by directing water specifically to where it's needed, using timers and moisture sensors to prevent overwatering.
- **Plant Health:** A good irrigation setup can help prevent diseases by reducing water contact with the foliage and providing a schedule that allows the plant to utilize the water supplied fully.

By constructing a system customized to these factors, your garden can flourish with minimal daily intervention from you, making for a more rewarding and less labor-intensive gardening experience.

## **The Best Choice is a Drip Irrigation System**

Planning and building an irrigation system with small pipes requires careful calculation to ensure adequate water flow to your plants. An efficient small-pipe irrigation system is typically a micro-irrigation system, which includes drip irrigation and soaker hoses. These systems are ideal for delivering water directly to the base of plants, minimizing water waste, and preventing leaf diseases. Drip systems deliver water to the soil at each plant's base via emitters.

Here's a basic guide to planning and calculating the components for a small-pipe irrigation system:

### **Step 1: Map Your Garden Layout**

First, draw a detailed map of your garden area, including plant locations. Mark your main water source and plan the route of your main line (larger diameter) that will branch out to smaller lines running close to or among your plants.

### **Step 2: Calculate Water Flow Rate**

Before purchasing pipes and emitters, calculate the flow rate of your water source. This is often measured in gallons per minute (GPM) and can be determined by filling a bucket with your hose and timing how long it takes.

For example: If it takes 15 seconds to fill a 1-gallon bucket, then your flow rate is 4 GPM.

### **Step 3: Determine Pipe Size and Length**

The size and length of your pipes depend on the flow rate and the needs of your plants. For most small gardens, 1/2-inch diameter tubing is adequate for the main line, with 1/4-inch micro tubing branching off to individual plants.

Example calculation for determining length:

If your garden layout requires 100 feet of mainline and 50 individual plants needing 2 feet of micro tubing each, you'd need:

- 100 feet of 1/2-inch tubing.
- 100 feet (50 plants \* 2 feet per plant) of 1/4-inch tubing.

### **Step 4: Select Emitters**

Choose drip emitters based on your plant's water needs. Emitters typically range from 0.5 to 4 gallons per hour (GPH).

For example, if you have a tomato plant that needs 1 gallon of water per day: Choose a 1 GPH emitter and run your system for 1 hour daily.

### **Step 5: Plan for Pressure**

Ensure your system maintains the right pressure; too high can cause leaks, and too low means inadequate water delivery. Pressure regulators can be installed at the source to manage this.

### **Step 6: Installation**

Install your main line, branch lines, and emitters according to your garden layout. Use T-fittings for branches and end caps to seal the ends of the microtubing. Secure tubing with stakes and

test the system to adjust flow rates as necessary.

For visual guidance, imagine a garden layout diagram with a mainline branching out to several plants, each outfitted with its emitter. This visually demonstrates how a small-pipe irrigation system should be organized.



Figure 3.2

Following these steps and performing the proper calculations allows for an efficient irrigation system setup tailored to your garden's requirements. This ensures your plants receive the right amount of water without waste.

### **FAQ:**

*How do I determine the flow rate of my water source for a small-pipe irrigation system?*

To determine the flow rate of your water source for a small-pipe irrigation system, follow these steps:

1. First, find a container with a known volume, like a gallon jug or a 5-gallon bucket. You can even use a large water bottle if that's what you have. Just make sure the volume is marked on the container or you measure it in advance.
2. Time the Fill: Place the container under your faucet or hose. Fully open the faucet and start a stopwatch, or use a timer to record how long it takes to fill the container to a predetermined mark.

3. Calculate the Flow Rate: Divide the volume of water by the time it took to fill the container. This will give you the flow rate in gallons per time unit (usually minutes). To convert this to gallons per minute (GPM), you could use the following formula:

$$\text{Flow Rate (GPM)} = \text{Volume of Water (gallons)} / \text{Fill Time (minutes)}$$

If you measured the time in seconds, you'll need to convert it to minutes:

$$\text{Flow Rate (GPM)} = \text{Volume of Water (gallons)} / \text{Fill Time (seconds)} / 60$$

For example, if it takes 30 seconds to fill a 1-gallon container:

$$\text{Flow Rate (GPM)} = 1 \text{ gallon} / 30 \text{ seconds} / 60 = 1 \text{ gallon} / 0.5 \text{ minutes} = 2 \text{ GPM}$$

4. Adjust for Real Use: Since irrigation systems can lose flow through friction and elevation changes, it may be wise to assume a slightly lower flow rate than calculated or test the flow rate directly at the location where the irrigation system will be used.

Knowing your water source's flow rate is essential for planning your small-pipe irrigation system. It ensures you won't exceed the system's maximum capacity, which could result in poor irrigation performance.

## Importance of Building Right Drainage System

A garden's vitality is often invisible, lying beneath the surface in the intricate world of roots and soil. For those cultivating their passion in raised bed gardens, an often overlooked yet critical aspect is creating an adequate drainage system. The Importance of Building the Right Drainage System cannot be

emphasized enough; it safeguards against one of the most common problems in gardening: overwatering.

In nature, the soil is layered, and water can drain to greater depths, but in a raised bed, the parameters change, and without proper drainage, water accumulates, leading to numerous issues. Poor drainage can suffocate your plants' roots, leading to root rot — a lethal condition for many plants as they cannot absorb the nutrients they need to survive. Furthermore, oversaturated soil becomes a breeding ground for fungi, bacteria, and pests, which can devastate plants.

Fundamentally, the right drainage system allows excess water to escape, which prevents waterlogging. This seemingly simple act maintains optimal soil moisture levels, which is crucial for secure plant anchorage and health. However, the uniqueness of raised beds calls for particular attention to how drainage is achieved. Soil composition within raised beds must be engineered to allow water to seep through and not simply settle at the bottom. A balance of porous and water-holding materials provides a medium through which roots can extract water and oxygen successfully.

An often overlooked dimension of drainage is its impact on soil nutrient levels. Water that stands too long in the soil can leach away valuable nutrients before plants can utilize them, essentially starving the plants of their food. Moreover, correct drainage aids in maintaining an even soil temperature by preventing the 'heat sink' effect of excess water, which can cause significant temperature fluctuations that are detrimental to delicate plant systems.

Understanding the soil ecosystem's needs and mimicking them in the constrained environment of a raised bed means paying attention to the construction details. Adding a drainage layer at the base can help ensure water filters through. Though typically not used alone in raised bed gardening, materials such as gravel or sand can play a critical role when layering beneath the soil mix, providing the necessary pathways for water to exit.

The science behind water movement in soil, known as percolation, should guide gardeners in their choice of materials. This is not just practical craftsmanship; constructing the right system is a nod to the delicate science underpinning plants' very nature. A gardener's attention to drainage may well be the defining factor between a garden merely surviving and one thriving.

## **FAQ:**

### *What materials can be used to create a drainage layer in a raised bed garden?*

The drainage layer is a fundamental component in the construction of a raised bed garden. It significantly contributes to the gardening system's overall health and effectiveness. Various materials can be used for this purpose, each offering unique benefits to the bed's drainage capabilities.

One common material for a drainage layer is gravel. Its size and shape allow for water to pass through easily, making it an excellent option for facilitating quick drainage and preventing water from pooling at the bottom of the bed.

Another material often used is coarse sand, which, when used in conjunction with other materials like gravel, can improve the filtering process and help manage the flow of water through the soil.

Crushed stone or pea gravel are also suitable choices. They provide ample space between particles for water to percolate down and out of the soil bed with ease.

For those looking for more sustainable or recycled options, broken terracotta pots or recycled crushed concrete can be used. These materials allow for efficient drainage while also reusing materials that might otherwise be discarded.

Let's not forget organic materials like pine bark or wood chips, which, while they break down over time, can provide initial spaces for water to drain through while contributing to the soil's nutrient

profile as they decompose.

In addition to the materials themselves, the method of layering and maintaining the drainage system is also crucial. Ensuring that the material is laid out evenly at the base of the bed and that it is not too compacted to allow water to flow freely will ensure the best drainage performance.

These materials, when properly implemented within a raised bed garden, not only enhance drainage but also contribute to the overall functioning and longevity of your gardening efforts.

## **Choosing the Best Height for Your Raised Bed**

**C**hoosing the optimal height for your raised bed is a significant consideration that can influence not just the ease of gardening but also the health and productivity of your plants. The perfect height can vary depending on several factors, including the type of plants you wish to grow, the conditions of the ground beneath, and accessibility needs.

Generally, the height of a raised bed can range from 6 inches to several feet. However, three standard heights are excellent starting points for most gardeners: 6-inch, 12-inch, and 24-inch raised beds.

6-inch raised beds are suitable for growers with soil conditions that are already reasonably optimal but require a bit of enhancement. This height is enough to add a layer of nutrient-rich soil on top of the existing ground, which can be beneficial for growing shallow-rooted plants such as lettuce, spinach, and other leafy greens. The proximity to the natural ground also means that plants can extend their roots deeper into the earth if needed, allowing for more flexibility and access to nutrients.

12-inch raised beds offer a versatile middle-ground option for a wide range of vegetables, herbs, and flowers. This height provides ample space for the roots of medium-depth plants like carrots, onions, and bush tomatoes. It's also an effective depth for

improving drainage and soil fertility, particularly if the native ground is compacted or of poor quality. With a foot of soil, these beds can be filled with a balanced mix, offering an enriched environment for your garden to thrive.

24-inch raised beds are ideal for gardeners seeking maximum ease of access and soil control. This height is especially beneficial for those with physical limitations as it reduces the need to bend or kneel. Deep-rooted vegetables such as potatoes, parsnips, and tomatoes will find plenty of room to thrive in these beds. Moreover, a two-foot depth dramatically minimizes the chance of contamination from the soil below, such as in urban areas where lead or other toxins might be a concern. However, it's worth noting that beds of this height require more soil to fill, which can be an additional expense.

The choice of height for your raised bed should reflect your gardening goals, the needs of your plants, and practical considerations regarding maintenance and cost. Whether you aim for the minimal intervention of a 6-inch bed, the versatility of a 12-inch bed, or the accessibility and depth offered by a 24-inch bed, your raised garden can become a tailored and productive space.

## **FAQ:**

### *What are the benefits of using a 6-inch raised bed for growing shallow-rooted plants?*

A 6-inch raised bed provides an optimal environment for cultivating shallow-rooted plants due to several key benefits. First, this height allows for the addition of a specialized, nutrient-rich soil blend on top of the native earth, which can significantly enhance plant growth and health. Shallow-rooted crops such as lettuce, spinach, and herbs thrive in this setup because they require less depth to expand their roots while still accessing the nutrients they need for optimal growth.

Furthermore, a 6-inch raised bed improves drainage, preventing

water from pooling at the roots, which can be detrimental to these types of plants. It also slightly elevates the plants, reducing the risk of soil-borne diseases and making it easier to manage weeds. This combination of improved soil quality, enhanced drainage, and disease prevention makes a 6-inch raised bed an excellent choice for gardeners looking to maximize the health and productivity of their shallow-rooted plants.

### ***How can a 12-inch raised bed improve soil fertility and drainage?***

A 12-inch raised bed significantly enhances soil fertility and drainage, offering an environment where plants can flourish. Elevating the soil above ground level ensures better aeration, which is crucial for developing a healthy root system and preventing soil compaction. This height allows for deep rooting, which is beneficial for microbes and earthworms as they enrich the soil by decomposing organic matter and facilitating nutrient cycling. Improved drainage is another hallmark of a 12-inch raised bed. Excess water can easily percolate away, preventing waterlogging, which can cause root rot and fungal diseases.

Moreover, custom-mixing the soil in the raised bed helps maintain a perfect balance of aeration and water retention because it can be tailored to the specific needs of the cultivated plants. This customized environment naturally leads to more fertile soil conducive to robust plant growth.

### ***What are the advantages of a 24-inch raised bed for gardeners with physical limitations?***

A 24-inch raised bed is highly advantageous for gardeners with physical limitations as it provides an elevated growing space that reduces the need for bending and stooping. This height allows individuals to comfortably tend to their plants while standing or seated, minimizing strain on the back and knees, which is particularly beneficial for those with arthritis or mobility issues. Access is further facilitated by the possibility of reaching into the

bed from all sides, ensuring that all parts of the garden are easily maintainable.

Additionally, the substantial separation from ground level deters many ground pests and enables a clearer view of the plants for monitoring their health and needs. This elevation also helps in regulating soil temperature since the soil in raised beds warms up faster in spring, extending the growing season. Overall, a 24-inch raised bed makes gardening more accessible less physically demanding, and can enhance the gardening experience for those facing physical challenges.

## **Having Workable Space - Secret #3**

**N**ow, we've reached the third secret, which is again a common mistake among beginners. In practice, many people place their beds too close to each other in an attempt to save space. This leads to unfortunate maintenance consequences. Therefore, always leave at least two feet between containers or beds to avoid inconvenience.

### **Secret #3 - Leave a minimum of 2 feet between beds.**

In planning and organizing your garden, especially when dealing with raised beds, it's crucial to ensure sufficient workable space between the beds. Specifically, maintaining a minimum distance of at least 2 feet between beds is recommended.

This consideration isn't just about aesthetics or convenience; it's a practical necessity. Ample space between the beds means you can move freely, carry tools, and perform all the tasks required to maintain a thriving garden without resorting to what some might humorously refer to as "Ninja Movements". By this, we mean the careful, sometimes uncomfortable, maneuvering one has to do in overly crowded spaces to avoid stepping on plants or disrupting the bed's structure.



Figure 3.3

Ensuring a workable space of at least 2 feet between beds supports efficient garden management. It allows easy access to weeding, planting, watering, and harvesting tasks. This space aids in air circulation, reducing the risk of plant diseases that are more prevalent in cramped conditions. By planning your garden layout with this spacing in mind, you're setting yourself and your garden up for success. This approach balances the urge to maximize growing space with the practical need for access and movement, leading to a more enjoyable and productive gardening experience. Imagine the sense of accomplishment and satisfaction you'll feel when your garden is thriving and well-managed.

## **Extra Tips for Your Raised Bed**

**D**o you want your raised bed garden to thrive? First, you should know that the soil you use matters a lot. With the right nutrients, your plant will thrive, and your plants can only get the right nutrients from the right soil. Don't worry we'll get into that more in Chapter 3. If the soil on your ground floor is poor quality, you should consider putting a landscape fabric down before filling it up. These will prevent your crops from getting exposed to the toxic metals in that soil and prevent rabbits or other animals from burrowing into the soil. However, if the soil is in excellent condition, don't separate the soil filling from the native soil so that the plants can gather nutrients from the native

soil as well. Or you can simply use a wire mesh; that way, your plants will access the nutrients, and your garden will still be safe from burrowing animals like squirrels and rabbits.

You can build your raised beds at any height of your choice, either very tall or short. Very high-raised beds are easier to maintain because you won't have to bend a lot to harvest or tend the garden. Also, weeds will have a harder time shooting from the ground up. And pests like critters and rabbits will find it hard to crawl into them. However, if you're planting crops that will grow really tall, then you should go for shorter raised beds. Also, taller raised beds require more soil when filling them up, which can be quite expensive. In shorter beds, plants can also easily gather nutrients from the native soil as they are close to the ground.

The paths between your raised beds (if you have multiple) should be enough for you to easily walk through easily, even when pulling a wheelbarrow or carrying a garden basket. If grass grows on those paths, there should also be enough room for a mower. But within your raised bed garden, plants can be near each other. You don't need to follow the traditional farming spacing guide. Unlike in traditional farming, you only need to walk around the raised bed frame to maintain each of your rows.

Then mulching is very important. Mulching makes your garden look nice and tidy. But adding a top layer of mulch to your soil will help the soil retain moisture more, which is necessary because raised bed gardens drain moisture faster than traditional gardening. It also helps regulate your soil temperature and suppresses weed growth.

Every good traditional farmer knows crop rotation is a great practice, especially if you want to prevent soil depletion and reduce the risk of pests. It means changing the types of plants in different spots on your farm, or in this case, a raised bed garden every season or periodically. This practice is also applicable and very beneficial in raised bed gardening.

Watering is also very important since raised bed gardens dry out

faster than traditional gardens. You can install an irrigation system or use watering cans; just make sure to water regularly, especially during warm seasons. If you will be using an irrigation system, I recommend drip irrigation. However, if you use drip tubing, situate it before planting anything; it makes watering much easier.

Companion planting is another good practice. Certain plants grow together and help each other thrive, like growing marigolds around your veggies or planting herbs like basil and mint. It's also a very effective way to control pest infestation and attract beneficial insects.

Last but definitely not least, keep your garden tidy. For your garden to succeed, you need to weed regularly, remove dead or diseased plants, and take care of any debris in your garden or its surroundings. That way, you'll be able to prevent the spread of diseases and also keep your garden looking fresh.

## **FAQ:**

### *How can I ensure proper drainage in container gardening?*

Ensuring proper drainage in container gardening is vital because it prevents water from pooling at the bottom of the container, which can lead to root rot and various other health issues for your plants. Proper drainage allows excess water to escape, leaving just enough moisture in the soil for the plants to thrive.

When you're involved in container gardening, choosing a container is the first step toward ensuring good drainage. You must select containers that have holes at the bottom. These perforations are paramount as they allow water to flow freely from the container. Some containers come without pre-drilled drainage holes, so you may need to add them yourself. A simple drill, hammer, and nail can create these essential drainage points.

The next consideration is the soil mix. Garden soil is generally too dense for container planting and can hinder water movement. Using a well-draining potting mix, which typically includes

components like peat moss, perlite, and vermiculite, can facilitate proper drainage. These ingredients help maintain a balance in the soil, retaining enough water for the plants to absorb what they need while allowing excess to drain quickly.

Another crucial factor is the monitoring of watering practices. Overwatering is common in container gardening, but proper drainage can mitigate its effects. By feeling the soil and ensuring it is dry an inch or two below the surface before watering, you ensure that the plant needs moisture. Do it slowly and evenly when you water, allowing the water to seep through the soil and out the drainage holes, rather than filling the container hastily and potentially drowning the plant's roots.

When setting up your containers, it's also beneficial to elevate them slightly off the ground. This could be achieved by using pot feet, bricks, or even wood chocks. Elevation helps to facilitate gravity's role in pulling the water out of the container, ensuring that it doesn't get trapped and cause the roots to sit in water.

Focusing on the type of container, the soil mix, water practices, and proper positioning can create a conducive environment that supports robust plant growth and enhances the success of your container gardening efforts.

### *What are the different materials that can be used to build a raised bed?*

Building a raised bed involves various factors that need to be considered, such as cost, durability, aesthetics, and environmental impact. Each material used for constructing raised beds has its unique characteristics and advantages.

Natural wood is a popular choice for its affordability and ease of use. Cedar and redwood are two common types, as they are naturally rot-resistant and can last for several years untreated. Wood degrades over time and may need to be replaced every ten to fifteen years, depending on the local climate and how well it's maintained.

Composite decking is a synthetic alternative that provides longevity and low maintenance. Made of wood fiber and recycled polyethylene, composite materials are resistant to rot and pests. They also come in a range of colors for aesthetic options. However, they are more expensive than natural wood and can flex or bow under heavy soil and water weight, which needs to be considered during construction.

Metal can be a great choice for a more industrial or modern look. Steel, in particular, provides strength and durability. Galvanized steel has been treated to resist rust and corrosion, making it a long-lasting option. However, due to its weight and sharp edges, it can be more challenging to work with, and it can also get hot in sunny, warm climates.

Concrete blocks or bricks offer a sturdy, long-lasting option with much visual appeal. They provide permanence and can make for very raised beds, which can benefit those with limited mobility. However, they can be cost-prohibitive, and arranging them can require more manual labor than other materials.

Another option is using recycled plastic or reused materials. Recycled plastic is durable, easy to clean, and resistant to rot. It's also eco-friendly, repurposing materials that might otherwise be in a landfill. Similarly, reclaimed wood or other upcycled materials can provide a cost-effective and environmentally conscious choice, adding a unique character to your garden.

Every material has pros and cons, and the choice comes down to personal preference, budget, and the specific conditions of your garden.

### ***What are the advantages of using natural wood for building a raised bed?***

Natural wood is a popular choice for building raised beds for various reasons, contributing to its functionality and aesthetics in gardening endeavors.

The first advantage of using natural wood is its accessibility and

ease of use. Wood is relatively easy to cut, shape, and assemble into a bed of any size or design, catering well to customizability. This makes it an ideal choice for gardeners who enjoy DIY projects or have specific design requirements for their raised beds.

Another significant benefit of wood is its natural aesthetic appeal. Wood blends harmoniously into outdoor environments, providing a warm, organic look that many gardeners value. Moreover, as it ages, it develops a unique gray patina that can add character and charm to your garden space.

Natural wood, particularly cedar and redwood, is naturally resistant to rot and insect damage, making it ideal for outdoor use. Its long-lasting properties can ensure that your raised beds stay sturdy and functional for many years, offering good value. Natural wood is renewable and biodegradable, making it an environmentally friendly choice. Choosing wood from responsibly managed forests can also contribute to sustainable forestry practices.

It is important to remember that not all woods are created equal. Some are treated with chemicals to prevent rot, which could leach into the soil and harm plants. Therefore, choosing untreated or naturally rot-resistant wood for raised beds is crucial.

Natural wood offers several advantages for building raised beds. It is flexible, easy to work with, naturally beautiful, durable against external elements, and eco-friendly, making it a favorite among many gardeners.

### **Takeaway 3**

- Weigh your options and consider the pros and cons before choosing your bed materials.
- Your raised bed garden can be as high as you want, but it should be no wider than 4 feet.
- Leave a minimum of 2 feet between beds.

## **Chapter 4:**

# **Let's Make Your Smart Garden**

**I**n the book's introduction, I mentioned that you need to change your approach to gardening. Here's where you'll find out what to do and what not to do if you want a successful garden.

### **Invest in Soil for Your Raised Beds and Containers - Secret #4**

**Y**ou remember I said I have had failed gardening attempts before. When I first started gardening, I started with container gardening, and I was excited and eager to harvest my first produce. Unfortunately, the first sets of seeds I planted went to waste. Why? I bought pots and seeds, but I just scooped up soil from the neighborhood to plant these seeds.

When you first thought about starting a garden, soil wasn't the first thing on your mind. You were probably thinking of how vibrant and lustful your garden would look. Or maybe you were already looking at recipes for delicious food you'll enjoy with your garden harvests, and the last thing on your mind was the soil the plants would grow from.

But when gardening, the first thing you should consider isn't the seed or plant. Your gardening doesn't start from there. It starts from the soil beneath.

The quality of your soil determines how successful your garden will be. It doesn't matter if you're a green or black thumb; if the soil isn't good, the garden can't thrive. And that's because it's not just the dirt beneath your feet; it is the vibrant, living ecosystem that determines the health and success of your plants.

*Ashley Meadows*

Photosynthesis, water filtration, and nutrient uptake depend on your soil.

When gardening, the type of soil you use is important. It must always be loam soil because that's the Goldilocks of soil, as it has great nutrient-holding, water-holding, and drainage abilities. The soil pH also matters because most plants thrive at a pH of 5.8-7.0. The soil you use shouldn't compact either, as soil compaction can restrict root growth and moisture infiltration and retention. And know that healthy soil always has beneficial microbes and larger creatures like earthworms that help break down organic matter and make nutrients available to your plants.

I don't want you to make the same mistakes I did. I didn't know that good gardening starts from the ground up. That's why, to help your garden thrive, the first approach we're changing is your soil approach. So, it's Secret #4: You must invest in your soil to make it the best it can be!

## **Secret #4 - Invest in Your Soil to Make it the Best It Can Be.**

The soil you use in raised bed and container gardening is different. However, one thing that both gardening mediums have in common is that you should never just scoop soil from your yard or neighborhood to plant with if you want a successful garden.

With container gardening, the soil of choice is potting mix, which is usually soilless. If the soil you use becomes compacted, it can suffocate the roots and slow nutrient and water flow. In a potting mix, your plants will find the essential nutrients that will help them grow despite being isolated. Potting mix usually has the perfect soil texture for moisture retention and drainage, especially high-quality ones that are usually fluffy and light. There's also potting soil, which has soil as one of the ingredients in the mix. Potting soil is usually heavier than potting mix. Different plants have different requirements, so different kinds of mixes meet

these requirements.

A potting mix is usually a blend of organic plant or animal-based materials like peat moss, manure, rice hulls, poultry litter, compost, bat guano, earthworm castings, or processed forest products like aged or composted bark as the primary ingredients. However, most companies now use coconut coir instead of peat moss as a primary ingredient as it is a renewable and more sustainable resource. It also contains inorganic natural materials like perlite, vermiculite, pumice, sand, or cinders. The role of these inorganic natural materials is to provide aeration, and they also give the mix its moisture retention and drainage properties. The next ingredient is the fertilizer, which can be synthetic blends, all-purpose time-release fertilizers, or nutrient-dense organic amendments. The fertilizer is your plant's main source of nutrients, so if you're planting edibles, avoid potting mixes with chemical fertilizers. Then there are usually other additives, and most brands have a working formula. But these additives can often be beneficial microbes, wetting agents, or lime to balance the soil's pH (a balanced pH will help plants thrive better). Cheaper brands often contain fillers like garden soil or topsoil, and since we want lightweight soil that isn't easily compact, we either sift the mix or avoid it altogether.

I said there are different kinds of mixes. We have all-purpose mixes, usually called container mix, potting soil, or potting mix. You can use them indoors and outdoors in your vertical and container gardens.

We also have an indoor potting mix, which is mostly for houseplants and other indoor plants. When buying an indoor potting mix, you should go for blends that don't have bark or compost as part of their ingredients to avoid breeding fungus gnats, which are a very common indoor pest.

There's the seed starting mix, a soilless blend that is usually the lightest and most quick-draining than other potting mixes. It is used in early seed development, so the mix's fine texture allows

the soil to have better contact with seeds for better germination. Also, the sterile medium reduces the risk of exposure to diseases that can affect your plant's growth.

There are also raised bed mixes that usually contain nutrient-rich ingredients, garden soil that may have additional organic or inorganic enhancements, cactus and succulent mixes, orchid mixes, and African violet mixes. These mixes are formulated to meet the growing needs of the plants they cater to.

Once you open a bag of potting mix, you should use it within 6 months as peat moss and some other ingredients usually decompose and end up compacting. When these ingredients decompose, there's nutrient loss, so you should replace potting soil at the beginning of every growing season. Used potting mixes can also become contaminated, but you can rejuvenate them if you want to use them. You can kill the pathogens in it and eliminate the bad smell or mold by spreading it out in the sun to dry. When done, add peat moss or coconut coir so the soil becomes lighter and other nutrient-rich additives. However, if you want to reuse a potting mix, don't use one from which a diseased plant grew. Always add water-soluble fertilizer to the soil every two weeks, especially since nutrients deplete with regular watering.



Figure 4.1

But if you're going to be gardening for a long time, you need to learn how to make your potting mix. Making it on a large scale is much cheaper than buying a pre-made mix. The different recipes

below are for your different plant needs:

For foliage plants, mix 2 parts peat moss, 1 part perlite, and 1 part coarse sand. Or 1 part peat, 1 part pine bark, and 1 part coarse sand.

For succulents, mix 2 parts soil (garden soil and you should first sterilize soil by baking it at 200°F for 20 minutes, stirring at 5-minute intervals throughout the process), 1 part peat moss, 1 part perlite, and 1 part coarse sand.

Mix 2 parts compost, 2 parts peat moss, and 1 part vermiculite (wet before mixing) for seedlings.

You can mix equal parts of peat moss, pine bark, and coarse sand for bromeliads.

For a soil-based mix, use 1 part compost, 1 part topsoil, and 1 part sand (Builder's or coarse sand is the best; avoid plaster and fine sand by all means).

Then, for a blocking mix for growing seedlings or transplant, mix 30 quarts brown peat, 20 quarts compost, 20 quarts perlite, 10 quarts soil, 3 cups of base fertilizer (use equal parts of blood meal, greensand, and colloidal phosphate), and ½ cup of lime to balance the pH.

Remember to add ¼ cups of limestone per every 6 gallons of peat moss to buffer the pH of the mix depending on your plant requirements since peat moss is slightly acidic. You can also substitute peat moss with coconut coir.

When filling your containers, fill them up to about ⅔ of the container. If you're managing soil, you can use recycled items as fillers at the base before you put soil mix on top. Common fillers include packing peanuts, pop bottles, plastic containers, and the like. Don't worry; your plants will grow well, and water will still be able to drain through.

**Here is a list of ingredients that will help improve the soil:**

1. Peat: Peat is an organic material that's accumulated over

thousands of years from decaying plant material. Its primary value lies in its ability to retain moisture and improve soil structure, ideal for raised bed and container gardening. Despite being slightly acidic, it makes the soil ideal for acid-loving plants.

2. Perlite: This unique form of obsidian is a versatile solution for your gardening needs. When heated, it transforms into a lightweight material that improves aeration and drainage and retains water, nutrients, and fertilizers. Its ability to release these over time ensures your plants get what they need when they need it.
3. Vermiculite: This mica-based mineral efficiently absorbs water and nutrients, releasing them when plants need them. Its lightweight and porous nature improves soil structure and water retention, which is beneficial for root development and overall plant growth in container gardens and raised beds.
4. Sands: Coarse-grained sands enhance soil drainage, a critical aspect of successful raised bed and container gardening. They prevent waterlogging and unruly growth of disease-causing bacteria or fungi.
5. Compost: This is decomposed organic matter packed with nutrients essential for plant health. It replenishes soil fertility, promotes beneficial soil bacteria and fungi, and improves the soil structure, enhancing its water-holding ability, and aeration.
6. Wood Chips improve soil structure and enrich it by decomposing into nutrient-rich organic matter over time. They also prevent soil erosion and weed growth and help maintain soil moisture.
7. Rocks: Small rocks or gravel enhance soil drainage, which is especially useful in container gardening. They also help prevent soil erosion in raised beds.
8. Odor-free Worm Castings: These are a type of compost created

by earthworms. They are rich in nutrients, promote soil structure, improve water retention, and stimulate plant growth, making them a valuable resource for raised bed gardening.

## What About Your Raised Bed Garden Mix?

**M**aking a raised bed mix is easy and you can do it yourself on your properly constructed raised beds. There are four main ingredients needed in making your bed mix: peat moss or coconut coir, compost, and perlite or vermiculite. Peat helps retain moisture in the mix while perlite helps to improve drainage. Each should be mixed in the right proportion to get the desired results. Mix 1 part of peat, 1 part of compost, 1 part of perlite and you can also add organic matter (you can use a thin layer of worm casting) as needed, you can also add 1 part sand. You can determine the total volume of raised bed mix needed by multiplying the length, width, and breadth. Before you start mixing, you should wear something to cover your nose and mouth.

Get a large container or wheelbarrow large enough for making your raised bed mix, mix the ingredients according to the aforementioned ratios, use a shovel or garden fork to mix thoroughly, and break any lumps until it is evenly distributed and the soil surface is leveled, this is to prevent erosion and protect plants root. The type of plant to grow can also determine the ratio of the ingredients used, if you are planning on growing a veggie, you will need a higher proportion of compost to create fertile soil for the veggies.

You can perform a simple squeeze test to determine its moisture retention and drainage by squeezing a handful into a ball. If the raised bed mix maintains its shape but crumbles easily upon contact, it indicates good moisture retention and drainage. Once you are satisfied, transfer it to your raised bed mix and spread it evenly until you attain a uniform depth. In conclusion, to keep your raised bed mix healthy, ensure it receives adequate water

and leave it to rest for a week or two.

## Always Keeping Plants Watered

Watering is very important, and while you might be well aware of the risk of underwatering plants, you should know that overwatering plants also comes with its own risks. Watering might seem like the easiest thing to do in gardening, but it can be quite tricky because there's a fine line between over- and underwatering.

It is worth noting that plant cells consist of up to 70% water. Watering is very important.

Water is vital for your garden plants because: Plants need it to make carbohydrates, which are necessary for giving them energy. Similar to blood in humans and animals, water aids in the movement of nutrients from the soil into the cell structure of plants.

### **When can I water my garden?**

Something as simple as the time you water not only saves water but also provides greater benefit to your plants. The best time to water is in the early morning or the evening when cooler temperatures will greatly reduce the amount of water lost during watering through evaporation. Watering at these times will ensure better penetration into the subsoil around the root systems. Watering deeply in the morning or evening allows the plants to soak up the water before the high temperatures of the day. If they are satiated with water when the heat hits, they will be more resilient.

Do not be tempted to sprinkle the hose around on a hot day—it might make you feel cooler, but those plants will not benefit much from it. Under hot winds, the water will simply evaporate in a matter of minutes.

And, yes, the best choice for watering your garden is to install a drip irrigation system.

## Importance of Crop Rotation in Raised Bed Gardening

Crop rotation in raised bed gardening is a practice steeped in agricultural wisdom. It is an essential component for long-term soil health and garden vitality. Over the course of generations, farmers have understood the detriment of monoculture—the continuous cultivation of a single crop in one place. This principle applies equally to the microcosm of a raised bed garden, where rotating crops is imperative to balance soil nutrients, disrupt pest and disease cycles, and bolster plant health.

Consider legumes, a family of plants including beans and peas, which can fix atmospheric nitrogen into the soil. This process enriches the soil with one of the essential nutrients required for plant growth. A raised bed that previously sustained heavy feeders such as tomatoes – which deplete nitrogen – would greatly benefit from a subsequent season of growing legumes. In turn, the once-exhausted soil is naturally replenished.

Another illustration involves members of the Brassica family, like cabbage, broccoli, and kale, voracious consumers of soil nutrients. Following a crop rotation plan, gardeners might plant root vegetables such as carrots or beets in the same bed the next season. These vegetables require different nutrients and root depths, reducing the strain on a particular soil layer or nutrient type.

Consider the infamous Colorado potato beetle, a pest that notoriously targets potato crops. Planting potatoes year after year in the same soil can lead to a buildup of this pest. By rotating potatoes with a non-related crop, such as squash or corn, the pest cycle can be interrupted, reducing the risk of infestation and disease.

In practice, a simple four-year rotation plan might look like this:

In Year 1, plant tomatoes; in Year 2, follow with beans to restore nitrogen; in Year 3, sow leafy greens, which are light feeders; and in Year 4, cultivate onions, which can suppress certain soil pathogens. Each group of plants has distinct needs and interactions with the soil and pests, promoting a balanced ecosystem within your raised beds.

Crop rotation is a critical practice in raised bed gardening that encourages a healthy and sustainable garden environment. This strategy involves alternating the types of crops grown in specific areas from one season to the next. It brings several benefits that collectively contribute to a thriving garden:

**Nutrient Management:** Different crops have varying nutrient needs. Some, like corn, are heavy nitrogen feeders, while others, such as beans and peas, can actually add nitrogen back into the soil through a process known as nitrogen fixation. By rotating these crops, gardeners can help maintain a balance of soil nutrients, avoiding the depletion that occurs when one particular type of crop is repeatedly grown in the same soil.

**Pest and Disease Prevention:** Many pests and diseases target specific plant families. Changing crops in a particular area can disrupt the life cycle of pests and diseases. If pests or diseases have developed associated with a particular crop, they may decline when their preferred host is no longer present. For instance, tomatoes can suffer from blight, which can be lessened by not planting tomatoes or their relatives in the same bed immediately after.

**Soil Structure Preservation:** Various plants have differing root structures and growth habits that can affect soil compaction and aeration differently. Rotating crops with deep roots with those with shallow roots can help keep the soil structure varied and prevent compaction, which benefits the overall health of the garden bed's soil ecosystem.

**Weed Control:** Crop rotation can inhibit the proliferation of specific weeds by changing the type of crop. Some crops can

outcompete or even suppress particular weed species, reducing weed problems over time.

Mindfully planning a raised bed garden's planting schedule ensures that crop rotation benefits are realized, leading to healthier plants and more robust harvests. It is a naturally smart way to manage and care for your gardening space.

## Making and Using Compost

**I**t is worth noting that some of the waste products you dispose of are good sources of nutrients for your garden soil. This is where compost comes in.

Plants need good soil to grow and thrive. Good soil, which is a foundation for healthy living, seldom occurs naturally but can be created. One of the best ways to enhance the fertility of the soil in your garden is to make compost.

Enhancing the soil in your garden with compost and other nutrient-rich substances, such as livestock manure or worm castings, will improve soil structure, texture, aeration, and water retention. It also helps with erosion control, pH balance, and healthy root development.

### **So, what is compost?**

Compost is a humus-rich organic soil amendment that contains nutrients essential for plant growth. These nutrients are a result of the microbial decomposition of biodegradable materials—food scraps, paper materials, yard waste—that have been piled, mixed, and moistened. Composting is all about transforming wastes through decomposition with the help of beneficial insects like earthworms and microorganisms into nutrient-dense soil-like matter.

There are two processes involved in compost making. It can either be passive/cold composting or active/hot composting. In passive/cold composting, waste materials are allowed to break down on their own. It can take up to a year or more for this to be done.

Active or hot composting speeds up decomposition by introducing oxygen (turning the pile), adding moisture, and providing the proper carbon-to-nitrogen ratio. This allows microorganisms to do their job more efficiently and raises the core temperature to 120-160 0F, accelerating the process by “cooking” the pile. This can take less than three months.

### **Ingredients For Compost**

Like a good food recipe, composting requires the right mix of ingredients. Carbon and nitrogen are the two essential elements for composting, and the proper carbon-to-nitrogen ratio is crucial for efficient decomposition. Microorganisms break down plant matter and digest carbon as an energy source, while nitrogen is ingested for protein synthesis.

An efficient compost pile should contain more carbon than nitrogen. Too much carbon can slow decomposition, while too much nitrogen can result in unpleasant smells. The optimal ratio is around 2 to 3 parts brown matter (carbon) to 1 part green (nitrogen) by volume.

Carbon sources include dead leaves, woody branches, conifer needles, bark dust, sawdust, brown paper bags, shredded office paper, newspaper, cardboard, coffee filters, straw, and wood ash from fireplaces and wood stoves.

Nitrogen sources include freshly cut grass clippings and other green plant trimmings, fruit and vegetable kitchen scraps, used coffee grounds, eggshells, seaweed, kelp, blood meal, and livestock manures.

### **How can you make compost?**

Cut or shred plant material into smaller pieces to increase the surface area, allowing microorganisms to digest it more quickly.

Lay down several inches of twigs or straw first to provide drainage and aeration on the bottom. Alternate layers of brown (carbon) and green (nitrogen) materials on top of each other—much like a pan of lasagna—so that materials are evenly distributed and

readily available to microorganisms. Finish off with a top layer of brown matter to help reduce unwanted odors. Fill a small composter as much as possible, or create a three-foot-deep pile.

Activators, while not necessary, can be added to kick-start decomposition. Natural activators include chicken manure, comfrey leaves, grass clippings, and fresh weeds (without seed). Other activators or starters are commercially made and available online.



Figure 4.2

Water the pile just enough to moisten it, then repeat occasionally if you do not receive regular rain. Too much water can make the pile soggy and cool the core temperature, slowing decomposition. Not enough water can slow or halt decomposition entirely. The consistency should be similar to that of a wet sponge that has been wrung out. Pick up a handful of compost and squeeze it to check the moisture content. If water trickles out, the pile is too wet. If there are no droplets, the pile is too dry. A few droplets, when squeezed, indicate that the moisture content is just about right.

Lay tarps, plastic sheeting, or wood over an open pile to retain heat and moisture.

Turn the compost every 1 to 3 weeks with a pitchfork or spin if you have a tumbler. This is also a good time to add more water if necessary, to ensure that all parts of the pile stay damp.

Add lime or calcium if necessary to deter flies and neutralize

odors. If the compost develops an ammonia-like smell, add more carbon-rich materials, such as dried leaves or straw.

Monitor the temperature. The internal temperature of the pile can be monitored with a compost thermometer.

Even though you can compost waste products, there are some exceptions. Whenever you want to make compost, do not compost the waste of carnivorous animals like dogs and cats because they contain parasites and dangerous bacteria that are too stubborn to be killed or destroyed. Do not compost meat, bones, and fish scraps because they decompose slowly. They can also attract pests and cause unpleasant odors. Oil, fat or kitchen grease, and big chunks of wood must not be composted because they are slow to be broken down. Do not introduce diseased plant debris, as pathogens can remain alive in finished compost and be spread to healthy plants in the garden. Plant matter, such as lawn clippings treated with chemical pesticides or fertilizers, should be omitted because it is important to produce clean organic compost—especially if you're growing food—so that you're not exposing yourself to chemicals that can be hazardous to your health.

## **Adding Mulch to Help Your Plants - Secret #5**

**A**nother way to improve the soil in your garden is by mulching. Mulch is any material that covers the soil's surface. Mulching is the act of covering the soil with mulches, such as bark, wood chips, leaves, and other organic material to preserve moisture and improve the condition of the soil.

### **Why Should You Mulch?**

You need to mulch for the following reasons:

- It reduces weed growth by keeping light from reaching the soil surface.
- It reduces water loss from the soil surface, which helps maintain soil moisture.

- It moderates soil temperatures, keeping it warmer on cold nights and cooler on hot days.
- It protects bare soil, reducing erosion and soil compaction.
- It prevents crusting of the soil surface. Water moves more readily into soil covered with mulch instead of running off.
- It keeps plants clean and off the ground, especially tomatoes and melons, to avoid plant disease.
- It improves plant health and growth (due to fewer weeds and more consistent moisture and soil temperature).
- It makes gardens “spiffed up” and attractive, giving a uniform appearance and rhythm to garden design.

### **And you know what?**

Many beginners usually forget about mulching, or they don't know about it at all. And that's a big mistake. Mulching protects the soil and plants from diseases, retains moisture, and prevents weed growth. So, this is the fifth secret: don't make these mistakes, and your garden will reward you with a wonderful harvest.

## **Secret #5 - Apply mulching to your beds.**

There are two types of mulch. They are organic mulch and inorganic mulch. I will take them one after the other.

### **The first one is organic mulch.**

Organic mulching is a type of mulching that uses organic materials to create a layer of protection for your plants. These materials include bark, grass clippings, hay, straw, sawdust, and other materials that break down into the soil over time. Organic mulches decompose over time, improving soil structure and quality, and returning nutrients to the soil.



Figure 4.3

**The second category is Inorganic mulch.**

Inorganic mulches are manufactured from materials that do not decompose, such as plastic and other synthetic materials. They are generally used to create barriers to weeds and for decorative purposes. Inorganic mulch, such as rocks or gravel, does not readily decompose. Rocks absorb and reflect heat, which can be detrimental during hot, dry weather. Because they do not decompose quickly, inorganic mulches do not improve soil quality.

**You can add mulch to your soil by following the following steps:**

- Clear the site of all weeds.
- If the ground is dry, water thoroughly.
- Cover the area in a layer of your chosen garden mulch.
- Make sure the area has a mulch depth of at least 2 cm (5").
- Clear the mulch away from the stems of the plants.
- Use a rake to gently level the surface.

Another way of improving the fertility of the soil in your garden is through fertilizer application.

## **Think About Eventuality of Plants - Secret #6**

**T**here's one more thing I need to tell you. You must consider how your garden and specific beds will look when the plants grow. We need to prevent or minimize potential shade. Shade from the future. It's not there yet but will appear when your plants grow. Therefore, this is the sixth secret. Many beginners make this mistake, and by midsummer, their tomatoes completely overshadow the herbs and flowers, often leading to diseases or their demise.

### **Secret #6 - Consider the sequence of plant growth when planting.**

When considering the eventuality of plants and their growth in a garden bed, it's essential to visualize their mature sizes and shapes to ensure optimal placement for sun exposure. Each plant species has a specific growth habit and will achieve a certain height and width at full maturity. Careful planning must be undertaken from the outset to avoid overcrowding and competition for sunlight.

For instance, tall-growing plants such as tomatoes or pole beans should be sited on the north side of a garden bed so they don't shade shorter plants. Medium-height plants like bush beans or peppers can be placed in the middle rows while low-growing species such as lettuce, spinach, or radish can occupy the southernmost edge.

Considering the angling of sunlight is a vital aspect of garden planning. Arranging your beds in a north-south orientation, for instance, can provide the most consistent sun exposure throughout the day. This strategy is particularly beneficial in climates where sunlight is limited for part of the year, aiding in maximizing sun exposure and optimizing plant growth.

The growth habit—bushy, vining, or vertical—also affects the

plant's eventual height and shadow. Vining plants, for example, can be trained up trellises to optimize vertical space and minimize their footprint. Conversely, bushy plants spread out laterally and can suppress weeds but may require more room between plantings.

By considering the full-grown size of your plants, you can adequately space them to avoid shading each other. As an example, if planting a variety of vegetables, one might sequence their placement by starting with leafy greens at the front (south-facing), followed by roots or onions in the middle, and finishing with tall tomato cages or sweet corn at the rear (north-facing).

Adopting a strategy that creates a tiered plant structure offers numerous benefits. Taller plants provide wind protection for the lower layers without blocking their sunlight. When these plants reach maturity, their leaves and overall structure will be tiered according to height. This arrangement maximizes photosynthesis and yield, while also creating a visually appealing and harmonious garden.

## **Boosting Plant Growth with Fertilizer**

**H**ave you planted and nurtured your plants with water, care, proper sunlight, temperature, and other essential needs, but they have not reached their optimal growth? Do not worry. This is where fertilizer comes in.

Sometimes, humans need supplements to fulfill the body's requirements. The same thing applies to plants. In this case, fertilizers act as supplements for them, helping in the proper growth of a plant.

### **What, then, is fertilizer?**

Fertilizers are materials given to soil or plants to provide essential nutrients that are lacking in the soil and required for optimal plant growth. These nutrients, which include macronutrients and micronutrients, are essential for plant development. Fertilizers

are widely used in agriculture and gardening to improve crop yields and plant health, and promote vigorous development. The use of fertilizers is important when it comes to growing healthy plants. Fertilizers offer plants the nutrients to grow, develop, and generate abundant yields. As a gardener, you can maximize plant growth and crop health by learning the right use of fertilizers. The first step towards maximizing plant development is selecting the proper fertilizer. Fertilizers are classified into several varieties, each with a different ratio of important nutrients. Summarily, plants require three primary nutrients: nitrogen (N), phosphorus (P), and potassium (K).

There are two categories of fertilizer: organic and inorganic. Organic and inorganic fertilizers deliver nutrients in different ways. Organic fertilizers are natural in that the nutrients they possess are strictly plant—or animal-based materials, either byproducts or end products of natural processes. Cow manure, decaying leaves, and food compost are all forms of organic fertilizer.

Inorganic fertilizer is synthetic and contains minerals and synthetic chemicals. Inorganic nitrogen is commonly made from petroleum. Most minerals in inorganic fertilizers are mined from the earth, and balanced inorganic fertilizers are high in all three macronutrients. They can contain ammonium sulfate, magnesium sulfate, and potassium chloride.

It is worth noting that organic fertilizers release nutrients as they break down, improving the soil and its ability to hold water and nutrients. Given time, they make your soil and plants healthier and harder. Organic fertilizers carry little risk of a toxic overdose of chemicals. Still, they require a breakdown of microorganisms to release nutrients, limiting their seasonal effectiveness and potentially increasing the time they take to feed your plants.

Inorganic fertilizers are a fast dose of nutrients, feeding your plants how you want and when you want. They are fully artificial and manufactured in exact doses. Their nutrient ratios are

printed on the bag, and there is an inorganic fertilizer to meet your plant's specific needs. Even though they are an almost perfect food source for your plants, they provide nothing for the soil, limiting their effectiveness in the long term. There is also the very real risk of a toxic overdose of chemicals that leach arsenic, cadmium, and uranium into the soil, potentially affecting any growing fruits or vegetables.

### **Is there any perfect time to use fertilizer?**

The correct time to use fertilizers is when the plants mature and start getting tiny leaves when they need more nutritional value to obtain optimum growth. Essentially, these plants are less prepared for harsh weather, healthy growth, and other factors at the seedling phase. Early fertilizer treatments can potentially result in the burning of the roots of your plants. So, you should wait for a few months once your trees and plants start growing before you can use fertilizers to obtain the maximum growth of your plants. While fertilizing your plants it is necessary to follow a proper guide that will help you maximize your plants' growth.

### **To fertilize the plants, follow the following steps:**

- Understand your plants' requirements —Choose fertilizers according to your plants' needs, look for signs of deficiency in your plants, and do proper research before using any fertilizers.
- Select the suitable type of fertilizer: Sometimes, organic fertilizer works well for a few plants, while others require synthetic fertilizers. Look for the suitability of your plant's needs and use organic or synthetic fertilizer.

## **Leonardite Humic to Boost Your Plants**

**I**n this section, I'll tell you about another fertilizer that can help you grow a fantastic harvest this season. It's something not many people know about; it's not super popular, but it's incredibly beneficial for plants. It's called Leonardite. Ever heard of it? Well,

let me tell you about it...

Leonardite is naturally formed in various oxidizing environments and can be traced back to prehistoric times. It is believed to have originated from woody plant material, mostly lignite-type coal, that has been chemically and geologically transformed over millions of years by exposure to air, heat, and pressure.

The name "Leonardite" is derived from the principal locality where it is found, Leonard, in North Dakota, USA. However, it can also be found in extensive deposits worldwide, including parts of Europe, Asia, and Australia.

Initially, woody plant material undergoes decay and significant breakdown under low-oxygen conditions, typically in peat bogs, swamps, or other water-saturated environments. Microorganisms play a critical role in this stage, breaking down the complex organic compounds into simpler ones, resulting in the formation of peat.

Over time, as layers of sediment build up on top of the peat, it becomes buried. This increases the pressure and temperature the peat is exposed to, and it slowly transforms into coal through coalification. The types of coal form in a sequence as they endure increasing heat and pressure: peat is first transformed into lignite, then to sub-bituminous coal, bituminous coal, and finally anthracite. Leonardite is formed from lignite exposed to considerable oxidizing conditions just beyond the lignite stage of coal formation.

During the transformation from lignite to Leonardite, the chemical structure is altered. The organic compounds are subjected to oxidative reactions, increasing the oxygen concentration in the material. These reactions add carboxyl and hydroxyl groups to the aromatic rings found in the lignite, vastly increasing the solubility and reactivity of the resulting Leonardite.

Regarding its makeup, Leonardite is a soft, waxy substance

characterized as an oxidized lignite. Its color ranges from dark brown to black. It has a high content of humic substances, particularly humic and fulvic acids, along with minor amounts of proteins, sugars, and other organic molecules. This makes it highly sought after in agriculture as a soil conditioner and for its potential to enhance plant nutrient uptake.

Although derived from lignite coal, Leonardite is not combustible and does not meet the criteria for being classified as coal. Instead, its real value lies in its impact on soil health, which can significantly contribute to agricultural productivity.

One of the most significant advantages of leonardite is its ability to act as a soil conditioner. Adding it to the soil helps break up compacted earth, making it more pliable and better aerated. This is especially beneficial in heavy clay soils that can be difficult for plant roots to penetrate. Improved soil structure also allows for better water infiltration and retention, decreasing the likelihood of erosion while ensuring that plants have the moisture they need even in drier conditions.

Another advantage is its role in nutrient enhancement. Leonardite is rich in humic substances, which can chelate (bind) nutrients in forms more readily absorbable by plants. This makes the existing soil nutrients more available and can enhance the efficacy of added fertilizers, reducing the need for chemical inputs and supporting more sustainable farming practices.

Leonardite promotes beneficial microbial activity in the soil. Microorganisms play a vital role in breaking down organic matter, releasing nutrients, and improving soil health. By stimulating this activity, leonardite contributes to a more vibrant and dynamic soil ecosystem that supports robust plant growth.

Adding leonardite to soil can transform its physical structure, improve its water retention and aeration, make nutrients more accessible to plants, and boost the soil's overall biodiversity and health. These benefits make it an invaluable resource for improving agricultural productivity and sustainability.

## Seeds or Baby Plants?

### **Should I plant seeds directly? Or should I plant seedlings?**

**D**eciding whether to start your garden with seeds or young plants is a big decision to take, and there are a couple of factors to consider before heading to get either your seeds or young plants.

If you are on a low budget, seeds are the most cost-effective. You can choose hybrid or heirloom seeds depending on what you want out of your garden. Seed packets are much cheaper than purchasing multiple young plants and may be the best way for you to have variety in your garden. Seed packets also generate more of one type of plant than simply buying one seedling of that species.

If you are the type of gardener who takes pride in knowing that you did all the work to bring your plant to life, then seeds are the way to go. If you are focused solely on the end product or you do not care whether you started the plant, then seedlings can be a faster way to get the results you are looking for.

### **How to plant your seeds directly**

Seeds cannot be handed to you with bare hands. They must be wrapped in a seed packet containing vital information on how to plant them.

Many vegetables — including beans, beets, carrots, corn, peas, and salad greens — can be planted directly in your garden where they will grow. In these cases, your task is easy: Follow the seed packet directions and keep the soil damp until your seedlings are well-established. Once the first “true” leaves appear, you must thin out your directly planted seedlings. “True leaves” look like the plant’s adult leaves rather than the smooth round “seed leaves” that first emerge. Gently pull out any seedlings growing too close together, giving your remaining plants enough room to grow to their full size. Refer to your seed packet for the space requirement for each type of plant.

Tips for Planting Your Nursery-Bought Plants include the following:

Try to transplant your seedlings in the morning or early evening, not midday. The hot sun can cause extra stress to plants as they adjust to their new environment.



Figure 4.4

Place your store-bought seedlings in the garden on top of the soil where you plan to put them. Determine if there is enough space between plants to grow to full size — the plant label should include spacing requirements.

Use a trowel to dig small holes where the plants will go. Make sure that both the seedling and your garden soil are nice and moist, and water if needed. Holding the seedling horizontally, use one hand to squeeze the plastic container until the plant comes loose gently, and use your other hand to support the plant's stem until the plant comes out of its container (this can take some practice, especially with delicate seedlings like squash). Use your fingers to tease out any roots that look compressed gently.

Pop the plant in the hole you've dug, adjusting the size if necessary. For most plants, you'll want to take care to bury the roots only, not the leaves or stems. A major exception is tomato seedlings, which thrive when the stem is partially buried.

Pat down the soil just enough to remove any potential air pockets. Gently water (use a watering can with a sprinkler head for best

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results) until the soil is moist but not flooded.

## Takeaway 4

- Investing in high-quality soil for your raised beds and containers ensures that your plants have the best environment for growth.
- A blend of soil, compost, and other organic matter provides a balanced medium that retains moisture yet drains well, optimizing root health and plant growth.
- Rotating crops helps prevent soil depletion and reduces the risk of disease and pest infestations.
- Mulch helps retain soil moisture, suppresses weeds, and improves soil quality.
- Fertilizers supplement the soil's natural nutrients, promoting vigorous plant growth.
- Incorporating Leonardite humic substances into your soil can significantly enhance plant growth by improving soil structure, increasing nutrient availability, and stimulating microbial activity.

# **Chapter 5:**

## **Take Care of Your Garden**

### **Helping Plants Stand Tall**

**C**ertain plants in your garden naturally grow to a larger size. These plants will need extra support to keep their stems from breaking and the produce off the ground. The act of supporting them is called staking.

Staking involves fixing sticks into the ground and tying your flower stems or other garden crops to them with cloth or thread (you can also use a trellis). Staking your plants—like cucumber, pepper, or tomato plants—reinforces the stems and keeps them from bending or breaking, keeping them upright and healthy. Plants that grow to two feet or taller are also automatically a good candidate for being staked. It will protect the plants from being beaten down by high winds and heavy rains. If you are growing a small garden or a container garden, you may not need a large number of stakes in your garden. You could use items like Bamboo, Rebar, Tobacco, Plastic Stakes, Tomato Cages, Chicken Fencing, Nylon Netting.

If you are planting a larger garden, you could have numerous heavier plants. If you tried to stake each plant individually, you would have more time and materials invested in your garden. This wouldn't be budget-friendly or efficient. Therefore, you should go with a multiple-stake idea. You should place a stake at either end of the row of heavier plants. You'll run a piece of twine at the top between two posts and another piece of twine at the bottom between the two posts.

From there, you'll run a zig-zag pattern between the two pieces of twine from one post to the other. This creates a woven design for

the heavier plants to grab onto and grow upwards. Though it is much more efficient for many larger crops, you'll need to plan your garden. This way, you'll have all the heavy varieties placed together in the garden, making supporting them much more manageable.

What are the plants that require staking in the garden?

We have discussed what staking a plant is and what options you have for staking your plants, but what plants should you intend on staking in your garden? There are quite a few: Pole beans, Blackberries, Cucumbers, Tomatoes, Melons, Peas, Pumpkins, etc. In short, climbing plants.

### **How can you go about staking plants?**

There are certain things you should take into consideration when staking your plants. If you do not match the right stake with the right plant, your plant could either not climb it well or break it. This is why it is essential to have a plan before you begin poking stakes in your garden. Here is what you need to consider:

When you are choosing a stake to hold up your heavier garden plants, you'll want something sturdy. If not, your plants could still end up on the ground. Be sure to pick durable materials that will not bend under pressure. Remember, when placing the stakes by your bigger plants, you'll need to consider how large the plant will get.

It is important to stake your plants when planting them. If you try to stake your tomatoes after they reach full size, you'll have a problem. Imagine trying to wrestle a large tomato plant into a tomato cage. It is going to be difficult.

Some plants will be slimmer (like a pole bean) and want to wrap around a slender pole as they grow. Like a tomato, other crops, like a cage or tobacco stick, are full-figured and need more support. Consider what you're planting and the preference that best suits the crop.

## Inviting Good Bugs for Pollination

A pollinator, whether a small mammal or an insect, plays a crucial role in the survival of plants. The sole objective of a plant is to survive, and it achieves this by producing seeds or progeny. This process is initiated when a flower's male anther transfers pollen grains to the female stigma. The successful transfer of pollen leads to the growth of fruits or seeds. While wind can facilitate pollination, it is more effective when carried out by insects like wasps, bees, and butterflies.

Wasps, beetles, moths, butterflies, and bees all contribute to pollination. A garden without pollination would be devoid of apples, almonds, melons, pumpkins, squash, cucumbers, and blueberries to just a few pollinator-dependent crops. When you take the time to care for and shield these innocuous garden guests, they will repay the favor by controlling pests, pollinating your plants, and providing you with hours of entertainment. These insects will visit your gardens if you plant blooms that attract pollinators. The lovely flowers meet their needs, and you enjoy your garden. You can grow plants like lavenders, sunflowers, coneflowers, beebalm, marigolds, milkweed, lantana, salvia, butterfly bush, and many more to attract these bugs.

## Unpretentious Flowers to Attract Pollinators

Unpretentious flowers are nature's gems that ornament our gardens while serving a paramount role in the ecosystem by attracting pollinators. These industrious creatures, essential for the reproduction of many flowering plants, rely on flowers to provide them with nectar and pollen. In return, their foraging expeditions facilitate the transfer of pollen from one bloom to another, fertilizing plants and allowing them to produce fruits and seeds. Globally, approximately 90% of wild flowering plants depend on animal pollination, making these interactions fundamental to both natural and cultivated landscapes.

For beginners in raised bed gardening, selecting flowers that draw pollinators while demanding minimal care offers a symbiotic advantage. Here are five such flowers known for their allure to pollinators and their unassuming nature.



Figure 5.1

**Lavender (*Lavandula*):** With its aromatic blooms and resilient nature, lavender is an irresistible magnet for bees and butterflies. Its tolerance for drought makes it an undemanding resident in a raised bed. Furthermore, the essential oils present in lavender are cherished both in culinary arts and aromatherapy, giving it utility beyond its ecological contributions.

**Sunflowers (*Helianthus annuus*):** The large, vibrant heads of sunflowers are not only visually captivating but also a beacon for pollinators, especially bees. Sunflowers adapt well to a variety of soil types and conditions, making them a hassle-free choice for novice gardeners.

**Cosmos (*Cosmos bipinnatus*):** These dainty, star-shaped flowers serve as a playground for a host of pollinators including bees, butterflies, and even hummingbirds. Cosmos can thrive even in poor soil conditions and frequently self-seed, ensuring a recurring display of blooms year after year with little intervention.

**Zinnias (*Zinnia elegans*):** Their bright, pom-pom-like flowers come in a kaleidoscope of colors, offering nectar to a wide array of pollinators. Zinnias are remarkably easy to grow from seed and

are highly tolerant of heat, making them perfect for sunny raised beds.

**Coneflowers (Echinacea purpurea):** Recognized for their prominent central cones, surrounded by purple petals, coneflowers are not only a beloved choice for pollinators but also possess medicinal properties. They are drought-tolerant, pest-resistant, and hardy, requiring little maintenance.

Incorporating these unpretentious flowers into a raised bed garden ensures a lively and dynamic habitat for pollinators, while also providing the gardener with a low-maintenance canvas of color and texture. Together, they forge a partnership that is both aesthetically pleasing and ecologically beneficial, encapsulating the essence of symbiotic gardening.

## **The Best Herbs to Grow in Raised Beds for Beginners**

**I**n the realm of raised bed gardening, cultivating herbs stands out as not only an accessible endeavor for beginners but also as a rewarding one. The controlled environment of a raised bed offers an excellent opportunity for nurturing a variety of herbs, known for their culinary, medicinal, and aromatic qualities. Here, we explore five exemplary herbs that are particularly well-suited for novices in raised bed gardening.

**Basil (Ocimum basilicum):** A beloved staple in kitchens around the globe, basil thrives in the warm, well-draining conditions provided by raised beds. This annual herb is prized for its fragrant leaves, which are a cornerstone of Italian cuisine. Besides being a culinary hero, basil is also revered for its role in companion planting, deterring pests with its robust aroma. Basil demands regular harvesting to encourage bushier growth and prevent it from going to seed too quickly.

**Mint (Mentha spicata):** With its invasive tendency curbed by the boundaries of a raised bed, mint can be a delightful addition to the

beginner's garden. This hardy perennial is incredibly easy to grow and spreads quickly, ensuring a steady supply of fresh leaves. Mint's versatility shines in its wide range of uses—from flavoring dishes and drinks to offering digestive benefits. Keep in mind, though, that mint prefers moist soil and partial shade during the hotter parts of the day.

Rosemary (*Rosmarinus officinalis*): This perennial herb is as ornamental as it is practical, with its needle-like leaves and woody scent. Rosemary is particularly drought-resistant, making it a low-maintenance choice for raised beds. Its leaves, both fresh and dried, infuse a myriad of dishes with a distinctive flavor. Rosemary also boasts an array of health benefits, including anti-inflammatory properties.

Thyme (*Thymus vulgaris*): A small yet mighty herb, thyme is a perennial that enjoys the loose, well-drained soil of a raised bed. Its tiny, aromatic leaves pack a flavor punch in culinary applications and have long been used in traditional medicine for their antiseptic properties. Once established, thyme plants are drought-tolerant and attract bees to the garden with their flowers.

Parsley (*Petroselinum crispum*): This biennial herb is frequently used as a garnish but holds its own in a variety of dishes with its vibrant, slightly peppery taste. Parsley can tolerate partial shade, making it versatile for different raised bed locations. Beyond its culinary use, parsley is rich in vitamins and minerals, offering health benefits to those who consume it.

Growing these herbs in raised beds not only yields a bounty of fresh flavors for the kitchen but also introduces beginners to the joys and benefits of gardening. Each herb, with its unique requirements and rewards, contributes to a diverse and thriving garden ecosystem, offering a tangible connection to the cycle of growth and renewal.

## Keep Pests Out Naturally

**J**ust as you hate mosquitoes, because it is dangerous, is the same way pests are dangerous to your plants in the garden. They are deadly to your plants. Managing diseases and pests is a natural aspect of gardening. Any type of pesticide, including natural and homemade ones, can destroy beneficial insects. Of course, they are carrying out their duty by getting rid of insects. However, pesticides have the potential to change the pH balance of the soil, leave a hazardous deposit on the crop, eliminate helpful soil bacteria, or have all three of these effects. Therefore, using natural pest control methods is necessary.

The following are some ways of preventing pests from taking over your garden without the use of chemicals:

Promote fertile soil. Plants with robust immune systems and healthy soil are better equipped to fend against illnesses and pests.

Make sure to select resistant varieties. Here's a quick method to keep bugs out of your garden: Select plant varieties that are pest-resistant by nature. Make sure you plant in the proper location to reduce pests. Plants that require full sun should be kept in full-sun regions. Similarly, grow crops based on their water requirements. Grow a crop in an area that stays moist for longer if it needs more water to keep healthy. For a while, crops may be able to survive in less-than-ideal conditions, but eventually, the stress will weaken them, making them vulnerable to pests. One simple step in keeping garden pests at bay is to plant in the right spot.

Attracting beneficial insects to your garden is another approach to get rid of pests. Beneficial insects naturally seek nectar, pollen, and shelter in your garden, where they prey on pests. Grow flowers that address these demands to entice them to stay. Strong-scented herbs like garlic, coriander, and calendula might discourage pests when planted with or close to vegetables. This is

a really simple technique to help with your pest-free garden efforts.

Crop rotation is a useful tactic to control pests. Crop rotation helps you control soil fertility and disorients pests by reducing their concentration in particular locations. Interplanting is another effective way to get rid of pests in your garden. Interplanting involves switching up particular crops, herbs, and flowers to confuse pests. Because pests prefer monocrops, industrial farms frequently use a lot of insecticides. Grow alternating rows of veggies and beneficial insect- and pest-repelling herbs and flowers instead of monocrops.

## **Preparing for the Winter and Labeling & Tracking - Secret #7**

**T**here are two more important points that beginners in gardening should know about. It's preparing your beds for winter and labeling your plants. This might seem like basic information, but trust me, it's from personal experience. If you don't take care of your beds before winter, you could face unpleasant surprises in the spring. The soil could dry out, pests could infest it, and nutrients could diminish. I strongly recommend not leaving your beds exposed to winter in the open; it's detrimental to soil health and will affect your future harvests.

Now, let me talk about labeling and tracking. This may also seem like a small detail, but it's not. I've learned from experience that I can accidentally plant seeds again where others have already been planted. These are very unpleasant situations. Therefore, labels with markings and a notebook or electronic spreadsheet will save your nerves.

### **Secret #7 - Take care of Labeling & Tracking and Preparing for Winter**

Let's look in more detail. Soil health forms the foundation of any successful gardening endeavor, and preparing your raised beds for winter plays a significant role in this. As the end of the growing season approaches, the emphasis shifts from nurturing plants to caring for the soil that has supported them. It's a time to replenish the soil, enhance its structure, and protect it against the harsh winter elements.

The first aspect of this is nutrient management. Throughout the growing season, the plants will have consumed the nutrients in the soil, potentially leaving it impoverished. In addition, the winter months can see these nutrients further leached out due to an increase in rainfall or snow. Adding compost or other organic matter can help replenish these vital nutrients, providing the soil with a steady release source throughout the colder months and into the new growing season.

Equally important is soil structure. Good soil has a texture and granularity that retains water whilst ensuring sufficient drainage. Covering the soil with mulch or planting a cover crop adds organic matter and helps protect the soil from compaction due to heavy rain or snow, helping to maintain this vital structure. This also has the added benefit of suppressing the growth of winter weeds, which can further deplete soil nutrients.

Microbial health is another key component. A rich community of beneficial bacteria and other microorganisms contributes to nutrient cycling, disease suppression, and soil fertility. Adding organic matter can provide food for these microbes, promoting their activity and enabling them to enrich the soil even during the winter months.

One final point to consider is that of soil erosion. Loads of rain and snow can wash away the topsoil, potentially carrying away vital nutrients. A protective layer of mulch or a cover crop can significantly reduce erosion.

Preparing your raised beds for winter is a proactive measure of maintaining soil health. It focuses on nourishing and protecting

the soil, ensuring it's primed and ready for the next growing season.

**So, here are some useful tips for Preparing Soil for the Winter:**

1. **Clean Up:** Remove spent plants and debris to prevent diseases and pests from overwintering.
2. **Soil Amendment:** Add compost or well-rotted manure to enrich the soil. If using Leonardite, mix it in now to work over the winter.
3. **Mulching:** Cover the soil with a thick layer of mulch to protect it from freezing temperatures and reduce water loss.
4. **Plant Cover Crops:** Consider planting cover crops like rye or clover to improve soil health and prevent erosion over winter.
5. **Drainage Check:** Ensure containers have proper drainage to prevent waterlogging as rain increases.
6. **Insulation:** Wrap containers with bubble wrap, burlap, or old blankets to insulate roots.

Labeling in detail. Labeling and tracking plants within garden beds are crucial tasks that any attentive gardener performs to ensure the success and organization of their garden. Implementing a system for keeping track of different plant species, their growth progress and care requirements is foundational in garden management.

The very act of labeling provides immediate visual cues to the identity of plants. This is particularly important when working with a diverse array of species, as it aids in distinguishing between plants that may look similar during their early stages of growth. Clear labeling helps avoid confusion and ensures each plant receives the care tailored to its specific needs. Knowing which plant is which allows for more precise care, whether it's watering preferences, sunlight requirements, or optimal harvest times.

Tracking, on the other hand, takes this a step further by

documenting the progress of each plant over time. This can be invaluable for several reasons. First, by recording when plants are sown or transplanted, gardeners can calculate when to expect germination and harvest, allowing for better planning and use of space within the beds. Furthermore, a history of pests, diseases, and growth milestones provides a detailed record that can inform future gardening efforts.

This historical data becomes a powerful tool for reflecting on what worked and what didn't, enabling gardeners to make more informed decisions in subsequent seasons. For instance, if certain plants didn't flourish, the gardener can reflect on the tracking notes to identify whether it was a timing issue, a soil fertility problem, or a pest that went unchecked.

Labeling and tracking can enhance the efficiency of crop rotation and soil management practices. Knowing the history of what was planted, where, and when prevents the repeated cultivation of the same type of plants in the same soil, thus avoiding the depletion of specific nutrients and the buildup of pests or pathogens.

### **Some Tips for Labeling & Tracking for Soil and Plants:**

1. **Durable Labels:** Use weatherproof labels or stakes to mark plants and remember crop placement for rotation purposes.
2. **Tracking System:** Keep a gardening journal or digital record of what was planted where along with amendments made to the soil.
3. **Sketch Layouts:** Draw out your garden layouts with plant locations and update it as you rotate or change planting schemes.
4. **Record Dates:** Note dates for planting, harvesting, and when amendments were added to the soil for future reference.
5. **Monitor Performance:** Monitor plant health and yields. This can help you adjust your strategies for next year.
6. **Photograph Progress:** Take pictures during the growing

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season to visually compare growth and development.

## Easy Garden Care Tips

**P**roper garden care can increase the quality and longevity of your plants, fruits, and veggies. The following are some tips you must adhere to:

Whether you're transplanting plants from nurseries or growing your own from seeds, fully inspect your garden plants to ensure they are pest and rot-free. Bringing in infected or diseased plants can harm the whole garden.

### **Water your garden properly.**

Garden tools should be cleaned to control disease and prevent transferring any bacteria or dangerous elements into your garden.

Set up a barrier around your garden bed, like a wire fence, to keep herbivores, critters, and other garden pests from destroying your plants.

## Saving Money on Tools

**Y**ou don't need to break the bank to purchase some gardening tools. Money should not be a barrier to taking proper care of your garden.

Some garden tools only need to be used once in a while, so consider forming a gardening group with friends and neighbors to share equipment. Or find a tool library where you can rent or 'check out' items. You can also buy pre-loved garden tools cheaper at thrift shops, just make sure they're sturdy and check that they're still good before paying for them.

## Extra Garden Know-How

### Application Of Epsom Salt On Tomatoes

**E**psom salt is a compound of sulfur, oxygen, and magnesium. It can work wonders in nurturing thriving tomato plants because it is packed with essential nutrients like magnesium and sulfur. Known as magnesium sulfate, this mineral promotes robust plant growth that could result in a higher fruit yield.

The first method of application is to combine water and Epsom salt in a spray bottle and spray it directly onto the leaves. This should be done late in the growing season, resulting in vibrant, bushy plants with sweeter, juicier fruits. To make this concoction, mix 2 tablespoons of Epsom salts with a gallon of water. You should use it on your plants once a month. If you wish to spray more frequently, use 1 tablespoon per gallon.

In the second method, you can use Epsom salt during the planting stage by mixing the salt directly into the soil. This method will facilitate the germination and photosynthesis of your tomatoes and boost the tomato cell and root development. Add 1 or 2 tablespoons of Epsom salt to the bottom of each hole before planting or transplanting. After adding the salt, mix it well with the soil.

### Takeaway 5

- Many factors contribute to the success of your garden, and you must put all these measures in place.
- Treat your plants as babies. Ensure they have essential nutrients, feed, and water and that they are safe from pests and diseases.
- Take care of Labeling & Tracking and Preparing for Winter

## **Chapter 6: Growing from Seed**

**Y**ou've prepared your soil; now is the time to plant your seeds. Purchasing your plants as seedlings can be quite expensive. However, there's also a cheap way to start planting, which is with seeds. Fortunately, you can start many vegetables and ornamental flowers with seeds. If you're starting your garden with seeds, there are two ways to do that. You can plant your seeds from outside, also known as direct planting. And you can start your seeds inside, using containers, and then transplant them outdoors. There are a lot of things that factor in these processes, and we'll understand them better now.

### **Planting Seeds Outside**

**B**efore you go on, one thing you should know about direct planting is that it can be quite unpredictable. Weather, wildlife, and insects can affect the seed's growth ability. But at the same time, this process also yields great results. Through this method, I've grown several vegetables and some of my herbs, perennials, and annuals. You can only start direct sowing when the soil is warm, and you'll know that the soil is warm enough when weed seedlings start to appear in your soil at the beginning of spring. Although, some seeds can be sown during summer and autumn (this information is usually on the seed packets). Not all edible and ornamental plants can be planted this way because while some crops and flowers prefer cool soil, some have short growing seasons and some hate root disturbance. Others prefer warm soil and have long growing seasons, so, it should be started indoors to give your plants a head start before the frost fully clears. Most seeds have their planting recommendations on the

seed packet, so that will guide you on what seeds to start inside or outside.

You can sow seeds directly in drills(rows), making it easier to differentiate your seedlings from weed seedlings. Or you can use the broadcast method, where you simply scatter the seeds over the soil surface. Sowing in drills is more suitable for larger seeds that need to be sown deeper. Large seeds that need wide spacing don't need drills; you'll just create a hole in the recommended depth using a cane or trowel. Broadcast sowing is better suited to small seeds and seed mixes.

For some vegetables, especially tap-rooted vegetables like radishes and carrots, you have no choice but to plant outdoors because they prefer growing in cool soil. So if you're sowing plants like this, direct planting is inevitable. In fact, you don't need to wait until weed seedlings shoot out because I've found that exposing them to the cold weather just a little makes them taste sweeter. However, there are vegetables like tomatoes, peppers, and eggplants that are heat-loving and yield much more when started indoors. It's not that they won't grow at all if you plant them outside, but if you live in a region with short growing seasons (especially USDA zones 2 to 6), you should definitely start indoors because they need a long season to produce. There are some other heat-loving crops with shorter growing seasons, and you can plant them outdoors once the frost is fully cleared. Crops that fall into this category include beans, melon, squash, cucumber, and pumpkin.

Then for flowers, there are also some that grow better in cool soil like sweet peas, bachelor's buttons, and larkspur. And like their cool soil-loving counterparts in the vegetable section, you need to sow them directly outside at the start of the growing season. Then, certain bloomers like morning glory, poppies, and moonflowers don't transplant well as seedlings, so direct planting is the best choice. And there are warm season annuals that take an awfully long to grow from seeds like cleome, petunia, and

amaranth and should be started indoors. However, other warm-season plants like cosmos, marigolds, and zinnia grow best from direct-sown seeds.

### **So, what`s the direct planting process?**

To start, you`ll need a rake, garden fork, trowel, hose sprayer or watering can, seeds and plant markers, and string.

Then, prepare the soil. If there are any weeds, uproot them and remove sticks and rocks as well. The soil should be loose, not compacted, unless certain crops, like the carrot, will look stumped and misshapen when they come out. If it is compacted, loosen the soil using a garden fork, then rake the soil to make it more even.

Then if necessary, prepare the seeds for planting. Some seeds might need to be soaked in water and softened before planting. Others like lupine, sweet peas, and morning glory might need to be sacrificed, so their hard shells can get thinner. That way, it will be easier for them to absorb water, germinate, and sprout. To scarify them, simply rub them against sandpaper. Some plants need to go through a process called stratification, a cold/moist period they have to go through to terminate. This process usually occurs naturally when seeds drop from the parent plant into the soil and have to go through the cold, wet winter before their seed coat can weaken, and they can germinate. But you can induce this process and mimic nature by putting moist seed starting mix in a container, putting the seeds in it, and then keeping the container in a refrigerator.

After this, you can move on to planting the seeds. First, make drills using a cane or a hoe. Then, dampen the drills a little so germinating seeds can easily access moisture for growth. And if you`re planting edible row crops, you need to make straight rows when planting, so that it can be much easier for you to weed and tend to the crops. To achieve this, drive bamboo canes on the soil or hang a string line that you can follow as you go. Then, pick up large seeds individually and place them along the drill. Most times, the packet recommends the planting depth, but the rule of

thumb is that the depth should be three times the diameter. Although it's not serious, that doesn't mean you should put a tape rule to the ground every time you want to sow. Seed packets also recommend spacings between rows, so you should follow the recommendation if you're sowing in multiple rows. If the seeds are not large enough to be picked individually, just take a pinch and sprinkle them along the drill by rubbing your fingers together. Afterwards, use a rake to cover the drills back.

If you're planting small seeds (broadcast), mix an equal proportion of sand and seeds and scatter the mixture across the soil. Make sure you move your hands in different directions to spread the seeds evenly across the spot. Then, gently rake the soil in the area to bury the seeds.

Then, make sure to label the areas where you've sown, preferably on the frame with the plant planted in that area and the date of sowing. Replicate this record in your record book in case rain washes the label away or animals remove it. You can also insert little sticks or canes to mark the planting spot. That way, you won't mistakenly plant something else in the same spot or accidentally pull up your seedlings, thinking they are weeds.

After that, you should slightly water the area where you've just sown. Dry soil will hinder the germination of your plants, so moisture is important. But you should be careful when watering because a strong blast can wash your seeds or affect the spacing. So, if you're using a hose wand, a shower setting is the best option, and with a watering can, use the rose fitting for gentle watering.

Your seedlings should start showing up after two weeks or more, and they'll be quite vulnerable, so you have to pay extra attention. Make sure the soil is consistently moist, water daily, but don't blast water at them, and try to water twice daily in extremely hot weather. Check for weeds, too, and seedlings need all the nutrients they can get, so you don't want weeds competing with them. Check for insects and pests, too, you can cover the seedlings with fine mesh to protect them from insects. You need to thin out

the seedlings during their early stage to avoid overcrowding, especially when you used the broadcast methods for planting or the seeds from last year fell into the ground. Remove every second or third seedling gently to maintain the required spacing requirements, and try not to disrupt the remaining seedling.

Once they become sturdy and grow enough leaves, it is time to start feeding them, so introduce water-soluble fertilizer. Make sure to dilute it to half the strength so it doesn't overwhelm them.

## Starting Seeds Inside

**T**his second seed-planting method is like a mixture of container gardening because you'll first plant the seeds in containers before transplanting your seedlings in raised beds. And except for tap-rooted plants like parsnips and carrots, you can pretty much start seeds indoors. While direct sowing is quite unpredictable, when you start your seeds indoors, you have more control over the results you get from your garden, but it is not as simple and straightforward as direct sowing. Also, it gives your growing season a head start and even grows more food with multiple harvests per season that way, because you control when your seeds are available to be transplanted. Also, seedlings indoors are not as exposed to pests and insects as directly sown seedlings are. And, it makes it easier to organize your garden and maximize space. I usually first arrange my seedlings on my raised garden beds to know if I'd like it to be arranged that way before burying their roots in the sand.

### **What do you need to start?**

Seeds are the first things of course, and you can easily get them from local companies around. Then you need a growing medium, which, as I have mentioned, should never be the soil in your yard or area. You should use either potting mix or seed-starting mix, tiny seeds are better started in a seed-starting mix, and if using potting mix, sift it before using. I prefer the seed-starting mix, though it is not as coarse as the potting mix, and it lacks some

organic materials that can be found in the potting mix, which are nutrients a seed does not need to germinate and sprout. Then for containers, you can use plastic seedling trays or any of the different kinds of containers that were discussed in Chapter 1. Seedling trays are the best options in this case, but if you don't have one, you can use an egg carton or empty toilet paper rolls, if using egg cartons, poke a hole at the bottom of each cell for drainage. When using containers, don't forget that the size matters.

Then you need light. It is not enough to place your containers in an area with sunlight access; but you also need indoor light. Some plants need to be indoors for about 6-12 weeks, and a majority of these weeks are weeks before the frost clears, and sunlight is not very dependable during this period. You can use fluorescent or LED shop lights. You don't necessarily have to go to expensive and complicated light setups mainly produced for indoor gardening. If you are going for fluorescents, you should be careful because they can be quite dangerous when they break. LEDs are a great choice but it's the hanging that is stressful.

Then, you don't want your seedlings to damp off (suddenly flop over and die), and to prevent this, you should get an oscillating fan. With a fan, you'll be able to maintain air circulation around the seedlings as if they were outside in nature, and this will reduce humidity and moisture. If you already have a standing fan, you can set it up so that it points toward your seedlings. But if not, you can buy a mini fan and clamp it above your containers' shelf.

Next, and also important, is a heat mat. The optimal germination for many seeds, especially warm season seeds, is higher than the room temperature. With a heat mat, you can speed up the germination process of these plants. If you can't afford one, you can use a warm spot in your home, like the dryer or, above the radiator, or even on top of the refrigerator. Not all seeds need extra heat before they can germinate; some seeds will eventually germinate, even if it might take a long time. But when planting

warm season crops, the extra heat is very important, trust me. Then, once the seedlings emerge, you can remove them from the heat mats or warm spots and place them directly under the light source.

From the seed packet, you'll see recommendations like planting methods (indoors or outside). You'll also see the planting time; for instance, the instructions could be something like "Start indoors eight weeks before the last expected frost date in your area." You can get the date for the last expected frost for your area by simply searching online and then counting backward to the date on the packet; that's when you can start planting. You'll also find how long it will take the plant to reach fruit-producing maturity, and you can also calculate when to start planting based on when you need the produce. From the packet, you will also find out if your seed needs lots of light or not and whether your seed will grow better in potting soil or seed-starting mix. You'll also learn at what optimal soil temperature your seed will germinate. As well as fertilizing needs, days to germinate, planting depth, and the right transplanting technique.

### **Now, on to the step-by-step process:**

Loosen the potting mix or seed-starting mix with your hands, don't forget to sift the potting mix, then add a little water to dampen it. It should be wet enough but not dripping wet, and it shouldn't have dry lumps either, so the moisture level can be uniform all across. After which, you can pour it into the different containers you're using or seed-starting trays if that's what you're using. Fill the containers about two-thirds full, then tap the container on a sturdy surface so the soil can settle. Then, use your hand or anything with a flat side to form the top of the mix. Don't press down the soil too hard so it won't be packed too tightly and can remain aerated.

Here's a tip, though: put a potting mix at the base, then about ½ inches of seed starting mix on top, and then plant the seed in the seed starting mix layer. That way, after the seeds germinate

through the starter soil, the nutrients below will keep them going until it's time to transplant them.

Then, you can plant the seeds. Don't forget to check for any pre-planting seed preparation, poke a hole using a pencil or small dibber, and then plant the seeds based on the required depth. If the planting depth is not provided, remember that the depth should be three times the seed's diameter. I usually plant two or more seeds per cell so that when seedlings emerge, I can thin them out by taking out the weaker ones, and also because not all seeds germinate. Also if using seedling trays, plant crops with similar temperatures together so that the temperature requirements won't clash.

Then, cover the plants back with the damp potting mix and label them with the date they were planted and the seed planted. You can use popsicle sticks or plastic plant markers and insert them near your planted spot. You can also write it on paper and attach it to the end of the seedling tray or container. For warm-season seeds that need light before germinating, don't fully cover them up; just gently rake the soil over them.

The next thing to do is to keep the seeds warm and humid and to do this, you cover the seedling trays and containers with clear plastic. Seedling trays usually have plastic covers, but containers can be covered with clear plastic bags or wrapping wraps. This plastic cover will provide heat and prevent moisture from escaping. Then, place the container on a heat mat or in a warm spot for warm-season plants that will germinate better at higher temperatures (between 65 and 70 degrees Fahrenheit). You should water plants in this condition more frequently than other plants.

Once the seedlings start to emerge and one or two leaves (the cotyledons) have emerged, move them away from the heat mat or whatever warm spot you might have placed them at and move them to the light source. The light should be around 2-3 inches above the seedlings and should be on for about 14-16 hours per

day.

Ensure the growing medium is always moist (damp but not dripping wet), check it at least once a day, and water daily. If your seedling is not in favorable conditions, it might lead to the damping off disease. To prevent this, I usually water from the bottom. To do this, you can place the seedling tray or container on a wide dish and add small water multiple times until the moisture reaches the top of the soil. You'll know once the color of the soil gets deeper.

Then, when the seedling grows, the cotyledons will wither away and the true leaves will form. At this point, your plant will start photosynthesizing, and you'll need to give it supplemental feeding every two weeks in the form of a water-soluble fertilizer since it is growing in a soilless mixture. The fertilizer should be diluted to one-half of the normal strength so that it doesn't overwhelm the seedlings.

Once the seedling has grown many leaves and is about a couple of inches tall, you can move them to a larger pot (potting up). This is so that the roots of your seedlings can have more space to grow, and in this case, it is better to use a potting mix or the blocking mix.

Then, when it is time to transplant the seedlings outside, you take them through a hardening process. The transplanting period is usually around when the temperature warms outside, and if you follow the seed packet instructions, you should already have healthy young plants. To harden your seedlings, you help them get used to outdoor conditions. They can spend an hour in a shady outdoor spot, then increase it the next day, and keep increasing it over a period of 7-14 days. During this period, you can also start exposing them to direct sunlight. And anytime your seedling spends the night outside, and it looks like the temperature will dip, make sure you cover them.

Once your seedlings have comfortably spent the night outdoors and are still thriving, it's time to transplant them into your raised

bed garden. When transplanting, do it in the cool morning or evening, and water your seedlings well enough before and after transplanting.

## Takeaway 6

- Direct sowing is easier and cheaper, but seedlings are exposed to unpredictable weather conditions, pests, and disease.
- Starting indoors is more expensive and complicated, but seedlings are safer and more likely to thrive.
- Don't give seedlings fertilizers until they grow their true leaves; even then, dilute the fertilizer.

## **Chapter 7:**

# **Planning Makes Perfect**

**A**t this point, you're about ready to start your garden—that is, if you haven't already. But before you start, let's discuss how to plan your garden strategically. A successful garden is one where you can maximize productivity, optimize space usage, and have continuous harvests throughout the growing season. How do you build a garden with all these qualities? Let's get right into it.

### **Growing More in Less Space**

**W**e've been talking about space all along as one of the reasons for container and raised bed gardening. But there are still some strategies you can implement to create more space. I know how it feels to have extra seeds with no space where they can be planted. It makes me feel like I'm not through, even when the planting season is over. But there's a way to make that little space work for you without you feeling sad that you couldn't grow some of your favorites.

The first and most important thing is to grow only what you need or love. I, for instance, don't like kale. I avoid it at all costs. Now imagine no one in my family eats it either, but I decided to grow it because it's the in-veggie. Or growing roses because everyone grows them even though you're impartial to them. Because of this, I'd like you to do a simple exercise. Imagine your garden has fully matured, take in the beautiful smells, the beautiful greens, the climbing plants, and the crawling ones, as well as the ones standing tall.

Write down the list of plants growing in this matured garden of yours:

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Now that you know what you want to plant in your garden, you can plan ahead. Do you need containers or seed starting trays? Are there winter plants that you can start early? What is the best layout for your space?

Also, please feed your soil. No matter how many seeds you plant, you'll grow more if your soil is well-fed. Composting, mulching, watering, and feeding your soil with enough fertilizer, with access to sunlight, of course, are key to growing a bountiful harvest. Keep that in mind.

You've learned vertical gardening methods in Chapter 1. If you've not considered it, but you need more garden space, please do consider it. Especially if you're growing crawling plants as they take up a lot of space, and crops hiding underneath their leaves can rot and waste. You already know the many benefits of vertical gardening and why you should consider growing crawling and climbing plants vertically. You save more space, and you grow more crops. Don't forget that you don't have to stick to one gardening method; you can mix raised bed gardening with container gardening and vertical gardening.

Or you can practice square-foot gardening. Here you divide your raised bed garden into square sections; sixteen 1-foot squares are the best. Then, you plant different types of crops per space (to prevent and manage pests), and you can plant 1, 4, 9, or even 16 crops per space based on the size of the plant once it reaches maturity. Like a single tomato per square, 4 lettuce plants per

square, and 16 carrot plants per square. And once you harvest a square, you plant another type of crop.

You don't have to stick to a single strategy; combine as many as possible. By planning ahead, you'll be able to decide which strategies work together and which strategies are easier for you to focus on.

## Keep the Harvest Going

**S**tarting a garden is great, but imagine going to the market to get crops you harvested from your garden just last season. They've finished, or you had to give some away so they won't spoil. To avoid that and keep your harvest coming in, you have to practice staggered planting techniques. These techniques are interplanting, succession planting, and sequential planting.

Interplanting simply means you plant different crops in the same space simultaneously. When interplanting, focus on plants with different maturity rates and sizes. Different plants take up different amounts of space, so planting a smaller crop beside or in front of a bigger plant instead of two big plants together will save more space. Maybe plant radishes in front of tomatoes; radishes grow faster than tomatoes, so you'll be maximizing space and also giving your tomatoes more room to grow after you harvest your radishes.

Successive planting is more feasible if you use the "starting seeds inside" method to plant. That way, as soon as you finish a crop, you can sow another seed or seedling. And that's not all, you can plant winter crops or autumn crops before summer. Or you can plant crops with a shorter maturity and harvest date like lettuce, arugula, bush beans, radish, spinach, and many more that mature between 20 to 50 days, and once they're done, plant other crops in that spot. For instance, if you plant spinach by March, you can enjoy the baby leaves until late May and then use the spot for other main season crops. You can also plant all year round; winter veggies like carrots, spinach, kale, leeks, and even broccoli for

instance, can be planted at the peak of summer. And when it's spring, there are spots for other plants to fill.

With sequential planting, you don't plant all your seeds or transplants at once; instead, you plant them in batches. You can spread out your harvest times by planting a few seeds the first week, more seeds the next week, and another batch weeks or more after so that you can eat fresh from your garden throughout the harvest season. I usually sow a row of lettuce every two weeks in my garden to have a constant supply of fresh lettuce throughout the season; the same with spinach.

To keep the harvest going, you might need to plant perennial crops like strawberries, asparagus, and rhubarb. Plant these once, and they'll keep producing crops for you year after year in their due season.

But most importantly, plan ahead. You know the crops you want to plan, if you're going to practice staggered planting, then draw up a schedule. Write down your scheduled planting and harvest dates. You can also include what crops to plant next when you harvest the first set. This way, you'll remove the guesswork from your gardening practices and know what and when to plant.

## Companion Planting Basics

**Y**our friends can bring the best out of you, but beneficial friendships aren't only for humans; plants can also have beneficial relationships. One of my gardening friends told me that he was struggling to grow tomatoes in his garden until another friend of ours told him to plant basil next to his tomato plant, and since then, he has been growing tomatoes successfully. We call this companion planting; when you plant certain crops together, they help each other thrive by providing shade, repelling pests, providing nitrogen, or attracting beneficial insects. The benefits can be one-way or reciprocal. And while plants are great companions, some plants negatively affect each other.

Companion planting is not a modern thing, but it has been around

for ages. Farmers of old used a companion gardening method called the three sisters. This method entailed planting corn, beans, and squash together on mounds, which increased the yield of the three crops.

Companion planting has several benefits, as I have mentioned. One of such benefit is pest control. Pests are challenging, and I'm not a fan of pesticides, especially since they can also kill off beneficial insects and contain chemicals. But with companion planting, specific plant pests won't be able to single these plants out, which reduces pests. Also, some plants like onions and basil naturally repel pests. When basil is planted with tomatoes, for instance, it repels harmful insects like aphids, fruit flies, and mosquitoes. Or planting marigolds with veggies, marigolds repel pests like beetles and nematodes, two pests that disturb veggies, a lot.

Another benefit is that companion planting attracts beneficial insects that pollinate the plants. Borage is an example of pollinator magnet plants as it attracts pollinator bees and pest-eating wasps.

Then, most large plants are heat-loving while most small plants are shade-loving. Planting these kinds of plants together will help provide shade to these smaller plants. Still using tomatoes and basil as an example, tomatoes provide shade for basil. This shade eventually results in a more abundant harvest because it takes longer to get to the seed. Even in the case of the three sisters, the squash protects the other two plants from excessive heat because it provides a ground cover; this cover also shades and smothers weeds. Another example is shading lettuce with corn.

Companion planting also improves plant health and soil fertility. Some plants change the soil biochemistry when they absorb nutrients from the ground. Some plants with long taproots bring nutrients from deep within the soil to the topsoil, helping shallow-rooted plants easily access these nutrients. Other plants, especially legumes like beans and peas, make more nitrogen

available in the soil for their plant friends to feed on.

Squash is not the only plant that smothers weeds. Planting a tall crop with a sprawling crop like potatoes takes up open areas, leaving less room for weeds.

### **Let's take a look at some plant friends.**

Basil and tomatoes repel moths that lay tomato hornworms and egg-laying armyworms; they also repel thrips. Basil attracts bees, which improves pollination and, as I've heard, tomato flavor. Tomatoes also provide shade to basil. They also don't compete for nutrients and water because they have different root systems. Basil has a shallow root system, while tomatoes have more of a deep root system.

Mint is a plant that works well with most other plants. It is an aggressive grower so it inhibits weed growth, but it can also affect other plants' growth, so plant it in a nearby pot or bed. It repels pests like aphids, ants, and flea beetles.

You can also plant garlic between rows of potatoes, with lettuce, cabbages, or near fruits. Garlic repels aphids, onion flies, ermine moths, and Japanese beetles, while it attracts aphid-eating hoverflies.

Nasturtiums also go well with brassicas like cabbages, broccoli, and kale, as they lure caterpillars away from these veggies. You can also plant them with fava beans to lure black flies away from them.

And then there's tansy, a perennial that repels cutworms, which attack several plants, including carrot, cabbage, asparagus, tomato, celery, corn, lettuce, pea, pepper, and potato. It also attracts beneficial pest-eating bugs like ladybugs, ladybirds, and predatory wasps.

Sunflowers are good companions for climbing plants like pole beans and cucumbers, providing them with support. They can also help provide shade to smaller plants and prevent them from becoming sun-stressed.

For plant enemies that affect each other negatively, some plants attract pests or release chemicals that inhibit the growth of others. The chart below provides some examples, so keep these frenemies away from each other.

In this table (next page) listed some popular plants suitable for raised bed gardening, their good companion plants, how these companions help, and plants to avoid placing nearby.

<b>Garden Plants</b>	<b>Good Companions</b>	<b>How They Help</b>	<b>Bad Companion</b>
1. Tomatoes	Basil, Marigold, Carrots	Improves flavor, repel pests	Corn, Potatoes, Fennel
2. Carrots	Onions, Leeks, Rosemary	Repel carrot fly	Dill
3. Lettuce	Garlic, Chives, Cucumbers	Deter aphids, provide shade	Parsley
4. Cucumbers	Radishes, Sunflowers, Peas	Deter cucumber beetles	Potatoes
5. Beans	Corn, Squash, Celery	Corn provides support, squash spreads on the ground	Onions, Garlic
6. Peppers	Basil, Onions, Spinach	Repel pests, enhance growth	Beans, Kohlrabi
7. Spinach	Strawberries, Eggplants	Provide shade, deter pests	Potatoes
8. Basil	Tomatoes, Peppers	Repels flies, mosquitoes	Rue
9. Onions	Carrots, Beets, Swiss Chard	Deter pests	Peas, Beans
10. Zucchini	Nasturtium, Marigolds	Repel pests	Potatoes
11. Strawberries	Beans, Spinach, Borage	Attract pollinators, provide ground cover	Cabbages
12. Garlic	Tomatoes, Roses, Raspberries	Deters pests, prevents fungal diseases	Peas, Beans
13. Beets	Onions, Cabbage, Corn	Improves production	Pole beans
14. Kale	Dill, Garlic, Chamomile	Enhances flavor, deters pests	Strawberries
15. Swiss Chard	Onions, Beans, Cabbage	Improves growth	Herbs
16. Radishes	Peas, Nasturtium, Lettuce	Deter cucumber beetles, Provides shade	Hyssop
17. Eggplants	Thyme, Tarragon, Peppers	Deter pests	Fennel
18. Broccoli	Dill, Chamomile, Roses	Attract beneficial insects	Strawberries
19. Potatoes	Beans, Corn, Cabbage	Helps deter pests	Tomatoes, Cucumbers
20. Cabbage	Dill, Mint, Celery	Attract beneficial insects, Repel pests	Strawberries, Tomatoes
21. Parsley	Tomatoes, Asparagus	Attracts beneficial insects	Lettuce
22. Asparagus	Parsley, Basil, Tomatoes	Deters pests	Garlic, Onions
23. Corn	Beans, Peas, Pumpkins	Beans fix nitrogen for corn	Tomatoes
24. Squash	Nasturtium, Corn, Beans	Spread on ground, Corn provides support	Potatoes
25. Pumpkins	Corn, Marigold, Beans	Suppress weeds, provide shade	Potatoes

This table presents a basic guide; however, it's always a good idea to observe how plants interact in your specific garden conditions and make adjustments as necessary. Companion planting can be

a complex topic with many variables, including climate, soil type, and pest pressures, so use this table as a starting point and adapt based on your observations and research.

## Changing Plants by Season

**A**s a gardener, you'll probably feel the change in seasons the most. Many people actually love to rest when the garden is resting, sipping tea, and waiting patiently until the next planting season. But even though most of us can't wait to take this brief respite from the garden, it's not a long time before we start feeling restless and can't wait to get our hands dirty.

Did you know that by keeping your garden going all year long, you can enjoy a continuous supply of fresh produce and a vibrant, ever-changing landscape? Of course, rest is important, but with a little planning, you can maintain your garden's productivity and beauty throughout the seasons.

To do this, you need to plan ahead. Do you want to plant throughout the year, or do you want to practice succession planting? If you don't know what to do, you won't know how to work towards it. For instance, if you want to plant throughout the year, you'll be able to learn about plants that grow best in each season in your area. Based on your area's temperature, day length, and frost dates, you'll be able to determine the best time to plant.

For instance, in the cooler months of spring and fall, you can sow seeds of frost-tolerant crops like lettuce, spinach, carrots, and peas. As the weather warms up in summer, you can transition to heat-loving plants such as tomatoes, peppers, cucumbers, squash, and beans. This way, you can have a thriving garden all year round.

Before you plant the crops for a new season, tidy your garden and remove the remaining plants from the previous season. Tidy your garden before the next season, and remove stems, flowers, and branches. If you don't clear all these away, they might harbor

pests and increase the risk of fungal growth and mold. Clear out the weeds so they won't compete with your new plants for nutrients, and trim every overgrown branch and shrubs. Starting the garden on a clean, tidy note can be a great morale boost for you.

Then, prepare your soil. Enrich your soil with manure or compost to provide nutrients for your new plants. You can also get a soil testing kit at a nearby garden center to test your soil nutrients and pH. That way, you can adjust the soil as necessary. If you're using a new garden soil mix, now is the time to fill up your containers and garden frames.

Your new plants may also be exposed to extreme weather like early frost or heat, especially when direct sowing. To protect your plants from these conditions, your soil needs to be properly mulched. When your soil is mulched, the plant roots will be protected from temperature swings. Also, cover your plants with row covers or shade cloths. These covers will still let air and water pass through while protecting the plants from extreme conditions.

No matter the season, always regularly check on your garden. I take a 15-minute stroll through my garden every day, no matter what. Most times, I spend more than 15 minutes, but this has helped me to be able to always check on my garden while basking in the fresh greenness of my garden. While doing this, I water, check for weeds and pests, and see how my plants are doing. I also fertilize the soil every two weeks after my seedlings have grown many leaves.

Don't forget you can practice succession planting to keep the harvest going throughout the year.

## **Greenhouse Tips**

You might be wondering, "If I'm practicing raised bed gardening and container gardening, why do I need greenhouse tips?" Well, in both gardening methods, you're growing crops in a controlled environment, and that's what greenhouse gardening is all about.

However, if you're growing indoors or have built a greenhouse, we'll cover tips that will help you get the most out of your garden.

First, temperature matters. You already have control of your garden's temperature in a greenhouse, but you have to be more intentional about it—maybe as intentional as monitoring the temperature of your greenhouse with a thermometer, especially one with a corresponding humidity measure. Get heating mats or even a heater to help extend your season during the cold winter. Get an oscillating fan or a cooling system that can also help your plants thrive even during excessive heat periods and very hot summer periods.

Greenhouses are designed to trap the warmth from the sun, so if you don't measure in place to maintain the temperature, your greenhouse's temperature will simply keep rising and falling based on weather fluctuations. Also, leaves transpire, a process where they release excess water or excess water evaporates from the pores in their leaves, stems, and flowers in warmer months. So, during these warmer months, you must keep your greenhouse cooler because the cooling system will help regulate the temperature and add moisture back. But remember, you do you, any heater or cooler you're using should be within your means.

When you use an oscillating fan, you'll also be managing humidity. Plants love humidity, trees and plants thrive in forests with high humidity. But too much humidity often leads to mold and mildew growth, as well as bugs all around. The fans will dry up excess dampness and condensation, which helps. Also, to deal with humidity, you need to ensure that your greenhouse has enough ventilation. Aside from using a small fan, you can release the warm air from windows or roof vents. Misting your plants can help you balance your greenhouse's humidity level. Because too little, and your plants die.

Plants get thirsty easily in a greenhouse, so watering your plants is very important. You'll have read about your seeds watering requirements on the packet (you can write it down in your garden

records journal). So, follow the requirements so you don't underwater or overwater your plants. Plants do not get overwatered when you make the one mistake of giving them too much water, instead, it happens when you water a plant again before the soil drains the water out. The best way to prevent this is to install a drip system, usually with a timer and drip gauge to regulate greater or smaller streams of water straight to containers and beds.

You will know you're inappropriately watering your garden with irregular drying, decreased shoot, root growth, and when your plants are immature and already of bad quality. When watering, water the soil and not the leaves, it's your plant roots that need water.

Pests are usually a problem in any garden, but they get worse in the warm and humid environment of a greenhouse because they multiply easily. Common pests that attack a greenhouse are aphids, thrips, bloodworms, slugs, and snails. You must take immediate action with greenhouse pests when you see a single one. If not, the situation might get out of control and cost you your garden. You can control the pests in your garden with insecticidal soap or other organic pest-control materials. Or you can introduce beneficial insects like ladybugs to help keep them in check. Diseases also easily spread in a greenhouse, so you need to remove any dead or diseased plant material the moment you see one. As a preventive measure, you can start your garden with seed varieties that are disease-resistant. Also ensure that in your garden layout, your plants are not overcrowded.

But most importantly, visit your greenhouse regularly if you want it to thrive. If you visit only once in a blue moon, a lot might have gone wrong in your garden before your next visit. Your plants are your babies and should be treated as such.

## Know Your Garden's Zone

**A**nother key to successful gardening is gardening based on your garden zone. Garden zones are tools that indicate places where specific permanent landscape plants can thrive. And that is permanent plants such as trees, shrubs, and perennials.

The two major garden zones are the USDA Hardiness Zone Map by the USDA (United States Department of Agriculture) and the Sunset Western Climate Zone Map by Sunset.

The USDA map was first published in 1960, although it was updated twice after that, in 1990 and 2012. It is based on winter hardiness. It measures the average annual minimum temperature and divides the country into different climate regions based on this measure. With this map, you'll have a rough guide on how cold it gets in your zone, which will help you plan ahead when gardening.

Now you can look on it by this link: <https://planthardiness.ars.usda.gov/>

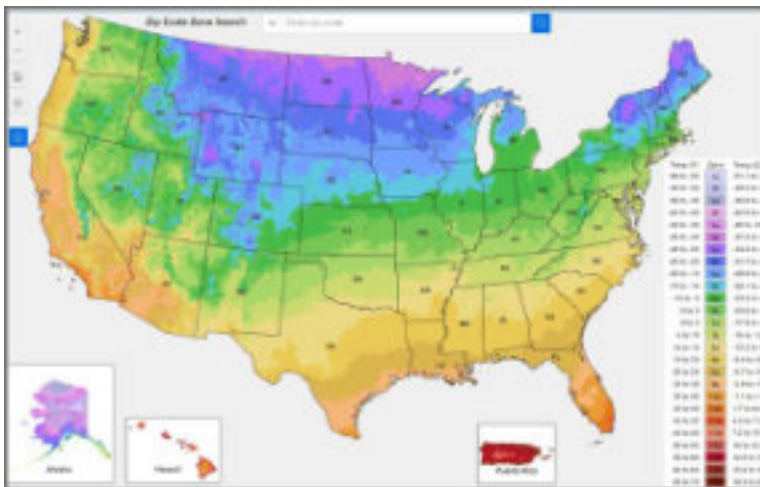


Figure 7.1

To use this garden zone map, look up your location on the map online, just input your zip code, and you'll find what zone you're located in. When you see what your zone is, it will give you an idea

of the best plants to grow in your area, especially during winter months. Although, if you're going for permanent plants like trees, shrubs, and perennials that require a temperature above your minimum winter temperature, you might as well not bother planting it since they will have to go through the winter season. You can still plant annuals, but the best choice is starting them inside and then transplanting them when the weather gets warm.

You'll be able to make informed decisions when buying seeds and deciding when to plant them. You'll buy the right plants and plant your seeds at the exact right time, never too early or too late.

Then there's the sunset zone map, although I prefer the USDA map because of its clarity. It used to only classify western states, but now it classifies states across the whole country. Unlike the USDA, it takes latitude, elevation, local terrain, mountains and hills, ocean influence, and continental air influence into consideration. And you have to accept that irrespective of how cold winter is in your area, these factors also affect planting success.

According to the sunset map, there are 33 zones. Zone 1 is the harshest, while Zone 33 is the mildest. You can insert your zip code online to find your zip code.

If you use the Monrovia site, it will also provide a list of plants in your hardiness zone. As a beginner, you can experiment with plants on the edge of your zone range later. For now, it is best to settle for plants that you're confident in, plants that you know will thrive in your area.

## Learn the Best Plant Spots

**A**re you yet to start your garden? Let's pick the best spot for your garden.

The first important thing is sunlight exposure. Some plants are sun-lovers, while some will prefer a bit of shade. You can check your seed pack for that information. Now that you know your

plant's sunlight requirements, I would like you to observe your yard, balcony, or patio for the whole day. Which spots get the most sunlight, and which spots are a little shaded? Or perhaps you'll be bed-shading your shade-loving plants with your sun-loving parts. Once pinpointed these spots, you can mark the areas for your garden bed frames or containers.

Then go out to the spots you've picked out, are they hilly or sloppy? Gardening on hills or slopes can be quite a hassle, especially if you're a beginner. Suppose the spot has hills or slopes and no other better spots. In that case, you can level the area or make sure that when you're filling your garden bed frame with soil, the soil layer is leveled, and you plant shallow-rooted crops in the higher ground area since there won't be as much soil filling as the lower level area.

Also, there might be spots in your garden area with slightly different climates from the entire area (microclimates). Perhaps the sun exposure is different, the moisture levels might be different, or there are even temperature variations. That should be no problem; all you need to do is optimize these spots and choose the plants best suited to those spots.

Then, what spots have wind protection? Whether you're starting from seeds or seedlings, your plants will pass through a delicate stage in their lives, and you don't want them to be damaged by strong winds. So, in this case, you can provide supports or stakes that will help your plants stand tall or plant windbreaks like fences, shrubs, or taller trees.

Just know that even if you don't get the spot right from the onset, by the end of the planting season, you will have learned more about your garden and will plan better for the next season.

## When and What to Plant

**W**hen gardening, you need to know that timing is everything. You can pick out the best spots and plants for your zone, have a water system in place, and use the best soil, but if you plant

at the wrong time, all these right approaches won't matter.

To choose the right time, there are a lot of factors to consider like the last frost date, your region's growing season, and understanding the difference between cool season versus warm season crops. Fortunately, you can consult a planting calendar based on your region to know when to buy seeds and start planting so you won't miss out on a plant's planting season. And when you witness two or three seasons, you should be able to create your personal planting calendar based on weather conditions and temperature.

### **Let's look at the best plants for each month.**

January: the ground is still very cold during this period so it's a gardener's resting period. However, you can still plant a few crops during this period. For instance, you can grow onions indoors or in a greenhouse. You can also chit your potato seeds during this time (calculate for 6 weeks before transplanting them in beds). When you chit the potatoes, lay them in a seed starting tray or any other container and point their eyes up. Leave the tray in a light, cool, frost-free place, and you can transplant once the sprouts have grown up to about ½ to 1 inch tall.

February: The weather is still unpredictable, but you can plant some seeds indoors or in containers on your warm windowsills. During this period, you can start warm-season plants like tomatoes, peppers, cucumbers, and eggplants inside. You can also plant fava beans, peas, radishes, carrots, onions, and the first potatoes outdoors but under row covers or cloches.

March: You can plant early vegetables during this period, although your garden beds will need lots of manure and compost so that water doesn't drain away too rapidly. You can plant parsnips, leek, kale, spinach, cauliflower, beetroot, onions, asparagus, peas, spinach, spring onions, and your chitted potatoes outdoors. However, you should probably wait till April if you live in a colder region. You can also choose this time to plant your warm-season plants that you will transplant outside.

April is the month when gardeners start getting busy. You can start sowing outdoor crops without cover or fear of extreme weather. You can plant zucchini and sweetcorn indoors. Outdoors, you can plant broccoli, carrots, cabbage, chard, second early potatoes, cauliflower, salads, and lettuce.

May: is also as busy as April. This is when you begin to harden off most of your indoor seedlings. Then, you can plant french beans, zucchini, and pumpkin outdoors,

June: If you're practicing successive planting, which you should, now is probably the time to plant your next sets of radishes, salads, carrots, zucchini, beetroot, French beans, peas, and parsnips. Then, you can also plant fennel and brassicas outside.

July: you can still sow fast-growing vegetables like radish, spring onions, and beetroot. Then plant your winter leeks. Also, if you are yet to plant French beans by the end of this month, you'll need to wait till next month. During this period, you'll also be harvesting your carrots, radish, beetroot, chard, peas, salads, fava beans, and lots more. You can sow the next set of chard this month and plant spring cabbage indoors to be transplanted by September. This is also the time to plant Pak choi. These three can be grown outside over winter.

August: You'll still be harvesting a lot, but you can also start planting winter crops like spinach, kohlrabi, spring cabbage to be transplanted outside by October, and winter salad leaves.

September: the time to grow winter salads like mustard greens, Lamb's lettuce, mustard greens, arugula, Winter Gem lettuce, and oriental leaves. They can be sown directly or started from inside.

October: the period for garlic and early varieties of fava beans.

November: The cold is setting in, so it's more of a time to harvest your brassicas and root vegetables. However, you can still plant asparagus.

December is a time to rest, plan ahead for the next season, and

prepare your garden for the next planting. However, you can still plant garlic and winter salads outside during this period.

You can plant herbs like thyme, rosemary, parsley, mint, chives, and French tarragon indoors for a year-round supply at any time of the year, although their growth will decline during winter. If you want to grow your herbs outside, you can start them indoors in January to be transplanted in spring. You can sow annual and perennial herbs directly in early spring. You can harvest hardy evergreen perennials all year round. While perennials like mint can only be harvested until mid fall as the shoots die in winter to emerge again in spring. Although, if you plant it in a pot, you can take it indoors during winter.

As you can see, with a little planning and a lot of love, you can have bountiful harvests throughout the year.

Please note that actual planting dates can vary depending on your specific climate zone and local conditions.

For example, this table (next page) shows dates for Denver City. It shows when and what to plant:

#	Garden Plants	Dates to Plant in Denver
1	Tomatoes	After last frost: May 15 - June 5
2	Peppers	After last frost: May 15 - June 5
3	Cucumbers	After last frost: May 20 - June 10
4	Carrots	4-6 weeks before last frost: April 15 - May 15
5	Lettuce	4-6 weeks before last frost: April 1 - April 30
6	Peas	4-6 weeks before last frost: April 1 - April 15
7	Radishes	4-6 weeks before last frost: April 1 - April 15
8	Beans	After last frost: May 15 - June 10
9	Potatoes	2-4 weeks before last frost: April 10 - May 1
10	Onions	4-6 weeks before last frost: April 1 - April 15
11	Beets	4-6 weeks before last frost: April 15 - May 15
12	Spinach	4-6 weeks before last frost: April 1 - April 30
13	Kale	4-6 weeks before last frost: April 15 - May 15
14	Swiss Chard	After last frost: May 15 - June 5
15	Eggplants	After last frost: May 15 - June 5
16	Squash	After last frost: May 20 - June 10
17	Herbs (various)	After last frost: May 15 - June 5 or start indoors earlier
18	Strawberries	4-6 weeks before last frost: April 1 - April 30
19	Garlic	In fall for next season: October 1 - October 15
20	Asparagus	As soon as soil can be worked: March 15 - April 15
21	Sweet Corn	After last frost: May 15 - June 5
22	Zucchini	After last frost: May 20 - June 10
23	Watermelon	After last frost: May 20 - June 10
24	Sweet Peas	4-6 weeks before last frost: April 1 - April 15
25	Broccoli	4-6 weeks before last frost: April 15 - May 15
26	Brussels Sprouts	4-6 weeks before last frost: May 1 - May 15
27	Celery	4-6 weeks before last frost: May 1 - May 15
28	Mustard Greens	4-6 weeks before last frost: April 15 - May 15
29	Kohlrabi	4-6 weeks before last frost: April 15 - May 15
30	Okra	After last frost: May 20 - June 10
31	Dill	After last frost: May 15 - June 5
32	Chives	4-6 weeks before last frost: April 15 - May 15
33	Cilantro	4-6 weeks before last frost: April 15 - May 15
34	Arugula	4-6 weeks before last frost: April 1 - April 30
35	Endive	4-6 weeks before last frost: April 15 - May 15
36	Parsnips	4-6 weeks before last frost: April 1 - April 30
37	Bok Choy	4-6 weeks before last frost: April 15 - May 15
38	Leeks	4-6 weeks before last frost: April 1 - April 30
39	Artichokes	4-6 weeks before last frost: April 1 - April 30 (perennials)
40	Pumpkins	After last frost: May 20 - June 10

Please note that "after last frost" dates are when the danger of frost has typically passed, and it is considered safe to plant frost-sensitive plants. The "4-6 weeks before last frost" dates are for those plants that can tolerate some cooler weather and be started



## **Takeaway 7**

- Planning ahead of every season is very important if you want to maximize space and plant yield.
- You can continually harvest throughout the year if you're willing to work for it.

## **Chapter 8:**

# **Growing Your Favorite Plants**

**I**n this chapter, I will provide practical recommendations on growing the most popular crops in beds. This list may be too short and may not include your favorite plants, but it shouldn't be too lengthy within the scope of a beginner's book. Growing tomatoes alone could fill an entire book, as could growing any other crop. Therefore, if I have overlooked recommendations that are important to you, please let me know. Leave a review by scanning the QR code below. My next book may be more aligned with your needs. So, let's begin with the list of recommendations. They are quite basic, yet they can transform your hobby into a successful pursuit.

### **Growing Tomatoes**

**G**rowing tomatoes successfully requires a blend of horticultural expertise and attentive care. Here are some useful tips to help you cultivate a thriving tomato garden:

**Select the Right Variety:** Begin by choosing tomato varieties well-suited to your climate and the space available in your garden. Some varieties perform better in cooler climates, while others thrive in heat.

**Start with Quality Seeds or Seedlings:** Whether starting from seeds or purchasing seedlings, opt for high-quality, disease-resistant varieties. If starting from seeds, plant them indoors 6-8 weeks before the last expected frost.

**Provide Adequate Space:** When transplanting seedlings to your garden, space them appropriately to allow for air circulation, which can prevent fungal diseases. Staking or caging your

tomatoes can help keep the plants off the ground and promote a healthy structure.

**Sunlight is Key:** Tomatoes crave sunlight, so ensure they receive at least 6-8 hours of direct sunlight daily. The more sunlight your plants can absorb, the more fruitful they will be.

**Maintain Consistent Watering:** Tomatoes need a regular watering schedule to prevent stress. Water them deeply and regularly, aiming for the base of the plant to reduce the risk of leaf diseases.

**Fertilize Thoughtfully:** Tomatoes are heavy feeders, but it's important to use the right balance of fertilizer. Too much nitrogen can encourage leaf growth at the expense of fruit production. A balanced slow-release fertilizer at planting and then as needed can support healthy growth.

**Prune Strategically:** Pruning can direct the plant's energy towards fruit production rather than excessive foliage. Remove any suckers (non-fruiting branches) and any leaves below the first set of flowers.

**Monitor for Pests and Diseases:** Regularly inspect your tomato plants for signs of pests or disease. Catching issues early can significantly improve their health.

**Support Plants as They Grow:** Use cages or stakes to support your tomato plants as they grow. This prevents the stems from breaking and the fruit from touching the ground, where it can rot or be attacked by pests.

Patience and attention to detail are key when growing tomatoes. With these tips in mind and a watchful eye, you can enjoy a bountiful harvest of juicy, home-grown tomatoes.

## **Growing Cucumbers**

Growing cucumbers can be a rewarding and flavorful addition to your garden. Here are several tips to help you cultivate healthy and productive cucumber plants:

**Choose the Right Variety:** There are many varieties of cucumbers, including ones best suited for eating fresh and others for pickling. When selecting your variety, consider your climate and how you plan to use the cucumbers.

**Plant in a Sunny Location:** Cucumbers thrive in direct sunlight. Planting them in a spot that receives at least 6-8 hours of sunlight daily will promote strong growth and fruitful yield.

**Use Well-Draining Soil:** Cucumbers prefer well-draining soil rich in organic matter. Before planting, consider working compost or aged manure into your garden bed to improve soil fertility and structure.

**Maintain Consistent Moisture:** Cucumbers are made up of mostly water and require consistent moisture to develop properly. Water deeply and regularly, especially during dry spells, to ensure that the soil remains evenly moist but not waterlogged.

**Consider Using a Trellis:** Growing cucumbers on a trellis or other support structure saves space and promotes air circulation around the plants, reducing the risk of disease. Trellised cucumbers also tend to produce straighter fruits.

**Mulch to Retain Moisture:** Applying a layer of organic mulch around your cucumber plants can help retain soil moisture, regulate soil temperature, and suppress weed growth.

**Monitor for Pests and Diseases:** Watch for common cucumber pests, such as cucumber beetles and squash bugs. Also, watch for signs of disease, such as powdery mildew, and take action as necessary to protect your plants.

**Harvest Regularly:** Once cucumbers start to produce, check your plants every other day for ripe cucumbers. Regular harvesting encourages the plant to produce more fruit.

By following these tips, you can enjoy a healthy and bountiful cucumber harvest, perfect for fresh salads, pickling, or snacks.

## Growing Basil, Dill and Parsley

### **Growing Basil Tips:**

**B**asil thrives in warm weather and requires plenty of sunlight. Plant basil where it gets at least six hours of sun daily. It prefers moist but well-drained soil and regular watering is essential, especially during dry spells. Be sure to pinch off the flowering tops when they appear to promote more leaf growth and prevent it from going to seed early.

### **Growing Dill Tips:**

Dill loves sunlight, so provide a sunny spot for it to grow. You can sow dill seeds directly into the ground in spring after the threat of frost has passed. Dill plants don't take well to transplanting, so it's best to plant them where they will stay. The soil should be rich and drained well, and regular watering will help dill grow strong and tall. Be mindful that dill can grow quite tall and may require staking to prevent it from falling over.

### **Growing Parsley Tips:**

Parsley can tolerate light shade but grows best in full sun. It prefers rich, well-drained soil. You can start parsley from seeds or buy young plants. Keep in mind that parsley seeds can take a few weeks to germinate, so be patient. Water the plants evenly to keep the soil moist, but avoid overwatering. Parsley is a biennial plant, meaning it will produce leaves in its first year, flower, set seed, and die in its second year.

For all three herbs, it's important to harvest regularly by snipping off the leaves, encouraging new growth and a bushier plant. Avoid cutting the entire plant, as leaving some leaves will allow it to continue growing. Providing adequate spacing between plants will promote good air circulation, which is important for preventing fungal diseases. Regularly check for pests such as aphids and treat them promptly if they appear. Mulching around the plants can help conserve moisture and reduce weeds. With

proper care, you can enjoy a continuous supply of fresh basil, dill, and parsley throughout the growing season.

## Growing Strawberries

**G**rowing strawberries requires some specific care to ensure a healthy and delicious crop. Here are several tips to help you grow strawberries successfully:

**Choose the Right Type:** There are three main types of strawberry plants: June-bearing, everbearing, and day-neutral. June-bearing produce a large crop in early summer, everbearing produce in both summer and fall, and day-neutral varieties can produce fruit throughout the growing season. Your choice will depend on when you want to harvest and how you want to use the strawberries.

**Select a Sunny Spot:** Strawberries need full sunlight, ideally at least six to eight hours daily. The more sunlight they receive, the better the fruit production.

**Prepare the Soil:** Strawberries prefer slightly acidic soil with a pH between 5.5 and 6.8. The soil should be rich in organic matter and well-draining. Before planting, work in compost or well-rotted manure to improve soil fertility and structure.

**Plant at the Right Time:** In cooler climates, plant strawberries as soon as the soil can be worked in the spring. In warmer climates, planting in the fall allows the plants to become established before the summer heat.

**Proper Spacing:** Plant strawberries about 18 inches apart to allow room for growth. If you're planting multiple rows, space the rows about 4 feet apart.

**Mulching:** Mulch around your strawberry plants using straw, pine needles, or shredded leaves. Mulch helps retain soil moisture, suppress weeds, and protect the fruits from soil splashes, which can lead to rot.

**Frequent Watering:** Strawberries need regular watering,

*Ashley Meadows*

especially during the establishment phase and in dry weather. Keep the soil moist but not waterlogged, as strawberries are prone to root rot.

**Fertilization:** During the growing season, feed your strawberries with a balanced all-purpose fertilizer to support their growth. However, avoid high-nitrogen fertilizers, as they can lead to excessive leaf growth at the expense of fruit production.

**Protect from Birds and Pests:** Use netting to protect your ripening strawberries from birds. Also, watch for slugs, aphids, and other pests and manage them as needed.

**Renovate After Harvest:** Once the harvest is complete, if you have June-bearing strawberries, it's a good practice to renovate the bed by thinning older plants, replenishing the mulch, and applying compost to regenerate it for next year's crop.

Following these tips and providing regular care, you can enjoy a bountiful strawberry harvest suitable for fresh eating, preserves, or baking.

## **Growing Onion and Garlic**

**G**rowing onions and garlic in your garden can be quite satisfying since both are staples in the kitchen and are relatively easy to grow. Here are some useful tips for cultivating onions and garlic:

### **Growing Onions Tips:**

**Select the Right Variety:** Onions come in three colors - yellow, red, and white - and can be categorized by the day length they need to form bulbs: short-day, intermediate-day, and long-day. Choose the type that's suitable for your region.

**Soil Preparation:** Onions require well-drained, nutrient-rich soil. Before planting, add aged manure or compost to improve fertility.

**Planting:** You can plant onions using seeds, transplants, or sets (small onion bulbs). Planting sets is often easier for beginners and

provides a quicker harvest.

**Watering:** Keep the soil moist but not soaked. Consistent watering is crucial as onions have shallow roots.

**Weeding:** Keep the area around onions free from weeds; onions don't compete well with weeds.

**Fertilizing:** Use a nitrogen-rich fertilizer early in the growing season to encourage good leaf growth, but taper off feeding as the bulbs begin to form.

**Harvesting:** When the onion tops begin to fall over and yellow, it's time to harvest. Allow the onions to cure in a warm, dry, ventilated area before storage.

### **Growing Garlic:**

**Planting Time:** For a summer harvest, plant garlic cloves in the fall about six to eight weeks before the frost. Garlic needs a period of cold to initiate clove formation.

**Soil Preparation:** Like onions, garlic prefers well-drained soil rich in organic matter. Add compost or well-rotted manure before planting.

**Planting Depth:** Break apart cloves from a garlic bulb and plant them pointed-end up, about two inches deep and six inches apart.

**Mulching:** Apply a thick layer of mulch after planting to help protect the cloves during winter, conserve moisture, reduce weeds, and improve yields.

**Watering:** Water regularly during the growing season, but be careful not to overwater, especially as bulbs mature.

**Scapes:** When garlic scapes (flower stems) appear, trim them off to ensure all growth energy goes into bulb formation.

**Harvesting:** Harvest garlic when the lower leaves start to brown. Dry the bulbs in a shaded, well-ventilated area for several weeks.

Remember to rotate your crops, avoiding planting garlic or onions in the same location for a few years to prevent disease build-up.

These tips should help you get started with growing onions and garlic.

## Growing Roses

**G**rowing roses in raised beds can be a great way for beginners to start with these classic flowers. Raised beds provide excellent drainage, essential for rose health, as these plants are susceptible to root rot if they sit in waterlogged soil. To begin, select a location for the raised bed that receives a minimum of six hours of daily sun. Morning sunlight is particularly beneficial to help prevent the leaves from staying damp for too long and warding off diseases.

When constructing your raised bed, aim for a depth of at least 12-18 inches to accommodate rose bushes' deep root systems. Use high-quality soil mixed with organic matter such as compost or rotted manure to give your roses a nutrient-rich environment to grow.

When it comes to rose selection, prioritize varieties renowned for their resilience and disease resistance. This strategic choice will significantly ease your journey into rose gardening. Remember to space your roses adequately to promote air circulation, a key defense against fungal infections like black spots or powdery mildew.

Watering is a critical aspect of rose care, with the ideal soil condition being moist but not waterlogged. In a raised bed setup, a drip irrigation system can be a game-changer, delivering consistent moisture directly to the roots while keeping the foliage dry, a condition roses prefer.

Following these tips should help you grow healthy, beautiful roses. Remember, while roses have a reputation for being demanding, with a little attention and care, they can be a rewarding addition to any garden.

## **Chapter 9: Garden Guides**

**Y**ou've gained a deeper knowledge of successful gardening, from maintaining a container garden and making a raised bed to understanding the pros and cons of gardening. Now it's time to share some helpful insight into maximizing your yield. This tip will help you effectively grow your veggies, herbs, fruits, or flowers and maintain a thriving garden.

### **Growing Veggie Tips**

**N**othing beats fresh veggies; as a gardener, I believe they should be one of the staples in your garden.

Growing veggies is exciting and fun, but if you don't understand their seasonalities, the possibility of having a great yield is very low. Why? As I have already mentioned, there are warm-season veggies and cool-season veggies. Veggies like cucumbers, tomatoes, and peppers grow well in the summer, while lettuce, carrots, and beets thrive well during the spring season. Understanding the differences will help you grow a successful vegetable garden.

Summer veggies need about 6-8 hours of direct sunlight per day to thrive. You must ensure your raised bed is exposed to adequate sunlight, and if you are using a container garden, it must be placed where there is adequate sunlight.

Going on a summer getaway? Summer veggies are not the best option; they need your attention and proper watering. Watering in the early morning or late evening helps to keep your plant moist for a longer period and protects its roots from scorching temperatures. If you will be away, find someone to help take care

of your veggies or opt for spring veggies.

Apart from sunlight and watering, you should also focus on fertilizing, pest and disease control, mulching, weeding, and support structures. Pests often attack vegetables, so you must keep an eye out and take preventive measures. Companion planting is an effective way of keeping pests out of your garden, attracting beneficial plants, and having different plants in the garden without affecting each other. When I started planting peppers in my vegetable garden, I noticed signs of aphid infestation, which greatly affected my yield. By the next planting season, I planted marigolds around my pepper veggies to prevent another aphid infestation and protect my pepper plants.

Unlike summer veggies, spring veggies do not like hot weather and prefer soil temperatures between 50-65°F (10-18°C) for optimal growth and germination. The ground or raised bed must be thawed and loosened to a depth of 6-8 inches using a garden fork or tiller before planting. And you need to add compost and organic matter to improve fertility and drainage. It's best to apply the compost beforehand, during autumn, but if you don't, just make sure the compost you apply is 2 inches thick.

Generally, whether you grow spring or summer veggies, you must practice staggered planting. As you've learned, this practice ensures a continuous harvest throughout the harvest season. Also, understand the harvest time of your veggies so you don't let them get overripe and spoilt, which can attract pests to your garden.

Although you can plant different varieties of veggies in your garden, you should consider what you and your family enjoy eating. You can start small and grow only what your family will eat. You can also give excess veggies to your family or friends to avoid wastage and improve sustainability.

More importantly, when starting out with growing your veggies, it is best to start with the easiest vegetables to cultivate. Even as a first-timer, you can achieve incredible results as long as you

understand what your veggies need. It's simpler than it appears!

## Growing Herb Tips

I love having herbs in my pantry as I cook a lot with them. But I prefer them fresh and organic (and you know those don't really last long). Instead of visiting the market every time I need some herbs to cook with or to make herbal drinks, I just go and pick some from my garden. If this is the kind of life you want, it's actually one you can get.

Growing herbs requires some work, but they are one of the easiest plants to grow. Many herbs require minimum maintenance and can thrive in a small space, either in containers, raised beds, or even on your tiny balcony.

With fresh herbs, you get better flavor and save yourself the extra cost of buying them. But you should keep some things in mind if you want to grow a successful herb garden.

Most herbs are warm-season plants and can't tolerate extreme cold, so they need at least 6 hours of direct sunlight to survive. Many herbs like mint and thyme exhibit the weed-like nature of aggressive growth and can take over the whole space of your garden, so it's best to plant them in a container or using the square-foot garden method.

Popular herbs you can grow as a beginner in your garden include thyme, rosemary, mint, basil, and parsley. Before you start growing your herb, it is important to understand the best herb suitable for your climate and garden conditions and the seasonality of different herbs to achieve maximum results.

Generally, herbs prefer an acidic to neutral soil with a pH of 6.0-7.0, the soil should be well-drained, and a spacing of 8-12 inches is recommended between plants. Herbs grown on compacted soil can lead to stunted growth. It is important to loosen the soil to a depth of 6-8 inches and remove any weeds or debris before planting. Also, when it comes to herbs, garden soil shouldn't be an

ingredient in your potting mix.

The application of organic mulch, such as wood chips, straws, or shredded leaves, can help prevent soil erosion, regulate temperature, inhibit weed growth, and improve the overall health of your herbs.

Seeds are the cheapest way of growing your herb, they can be grown in a small container, seed starting tray, or garden tray before transplanting to your garden or left to grow in the container. Planting a herb seed is not as difficult, and it's possible to get it at the first trial if you follow the instructions in Chapter 4. If you are not confident with growing your seedlings, you can purchase at your local garden center as it's most likely organically grown by the owner.

Herbs are generally categorized as annual, biennial, and perennial, and knowledge will help you grow a successful herb garden.

Herbs like basil, dill, borage, fennel, chamomile, and cilantro are called annual herbs because they last only one season and are easy to grow from seed; biennial herbs include parsley and caraway because they last for two years.

Thyme, rosemary, ginger, and mint are perennial herbs. Some tender perennial herbs need to be grown in a container so they can spend the winter indoors.

Different herbs can be grown together in a container, but herbs like mint should be grown in their own container because of their weed-like nature. When growing perennials, they may look bare at first, but give them room to grow. It is also important to note that generally, herbs do not require too much fertilizer, as it can affect their flavor.

Some herbs, like cilantro, tend to bolt prematurely and lose their flavor. You can prevent this by providing shade during extreme hot weather, harvesting the leaves regularly or removing some flower buds to avoid bolting.

Don't over-water your plants but keep them slightly moist; if you notice it is wilting, don't worry; your herbs will bounce back after watering. You can start picking your herbs when it is 6-8 inches tall. They respond well to pruning, as it helps to improve its branching and foster new growth. If you carefully follow these tips, you are off to a great start in growing your herbs and enjoying the flavor of fresh herbs around your home, even if you are a beginner.

## Growing Fruit Tips

**P**roducing juicy-looking fruits is not the only goal; these fruits should taste as good as, even better than, they look. Growing fruits in your garden might seem scary and overwhelming. I also felt this way when I wanted to start growing fruits in my garden. But I want you to know that anyone can grow fruits with just the right information and approach.

The first important thing is the location, as it will determine the success of your fruit garden. Like Herbs and most veggies, fruits need at least 6 hours of sunlight to survive. You can choose to grow them on a raised bed or container garden or even vertical gardening. You can also decide to grow them alongside veggies, herbs or both, but you need to make sure that they have constant access to water. Also, the size of the fruit tree matters, it's the size that will help you determine if you should go for container gardening, vertical gardening, or raised bed gardening.

Having the right soil also matters, as typically all plants thrive in nutrient-rich soil. Take your time to add compost and prepare the soil; if you are using a container, break any lumps you might find. If you are a beginner, it is advisable to start with seedlings and start with easy fruits to plant (strawberries are pretty easy to start). Many fruits take a long time to establish themselves from seed.

The fruits you choose to grow should be easy for you to plant and should be one you enjoy eating. When fruits reach maturity,

harvest is always surplus, even more than enough. Now imagine you planted a fruit that you don't even eat, it will probably all go to waste. You should also understand the season of your fruits and follow the seed packet instructions promptly.

If your fruit is going to grow up a tree and not a shrub, you should plant at the appropriate depth and spacing from the onset so it won't affect the rest of the garden. Regular pruning is important to maintain the shape and overall health of the plant, it will also prevent your fruit tree from affecting other plants grown in your garden. Growing a fruit garden is similar to maintaining herb gardening. A fruit garden must be close to a place with access to water but caution must be taken to avoid over logging. Fungal, bacterial, and viruses can spread quickly in a fruit garden, you can use disease-resistant varieties and practice good sanitation. Monitor your garden for signs of pests to identify early signs of pests and diseases. You can practice crop rotation to reduce pest pressure.

Plant a variety of flowers in your garden throughout the growing season to aid pollination in your fruit garden. For some fruit trees that require cross-pollination, you should plant compatible varieties nearby. With these few tips, you are off to a good start on growing your fruits and harvesting the best flavor and quality of fruits in your garden.

## **Growing Flowers Tips**

**M**any people became interested in gardening because they saw other people's yards blooming with flowers. Flowers are a great addition to your garden. The look and smell of a flower garden can be very soothing. You can grow flowers as a companion plant with your herbs, veggies, and fruits. Apart from being aesthetically pleasing, flowers also attract beneficial plants and repel pests in your garden.

The tips I will be sharing will give you a headstart in growing flowers successfully in your garden.

Like veggies, herbs, and fruits, flowers can be grown in a container or raised bed. You can also place them close to your balcony as long as they can access the right amount of sunlight.

Like other plants, the best way to start is to find a good location accessible to you and that's also near the water supply. Most flowers require well-drained soil with a slightly acidic and neutral pH. If you don't know what flowers you'd like to grow in your garden yet when you go to the local garden store to buy seeds, read the seed packets carefully and select the right varieties suitable to your environment, weather conditions, and your desired aesthetics (especially the fragrance and color).

You can choose a mix of annual and perennial flowers in your garden to achieve continuous blooming throughout the growing season.

You need to be creative about your garden's layout if you want the beauty of flowers in bloom to shine through. Think about the color of your flowers and plant them accordingly. And maybe like me, a single look at your garden in bloom will be stress-relieving. You can consider growing your flowers with colors that complement each other and that you find appealing. Take time to arrange your flowers strategically, you can place taller plants at the back and shorter plants at the front to create depth. You can choose flowers that bloom at different times of the year to ensure a year-round pleasing display in your garden.

Also, be careful not to overcrowd your flower garden just to create a beautiful garden. Research the ideal spacing for each type and mark it accurately in the soil, as overcrowding can lead to poor air circulation and the outbreak of fungal disease.

Provide consistent water to your flowering garden throughout the growing season. You can use drip irrigation or soaker hoses to minimize water waste. Apply compost and fertilizer to your soil to promote healthy growth. Avoid over-fertilizing, as it can lead to excess foliage growth.

Be sure to monitor your plant properly for signs of disease and pests and take appropriate measures. Remove weeds promptly, and be careful not to grow your flowers with herbs like mint, as they exhibit a weed-like nature. Some easy flowers you can try in your garden include marigolds, sunflowers, sweet peas, coneflowers, and many others. Following these tips and with a little bit of practice, you will have a blooming, beautiful flower garden all year round.

## Takeaway 9

- Understanding the seasonality of your veggies, herbs, fruits, and flowers is very important. It is directly related to having optimal results and productivity in your garden.
- You must supply adequate sunlight and water to your plants and be aware of different plants' varying sunlight and water requirements. You must also follow the seed packet instructions regularly.
- Utilize companion planting and monitor your garden for signs of pests and diseases to allow early detection and intervention.
- The quality of soil has a direct impact on plant growth and productivity. Understanding your soil pH, fertility and proper soil preparation to ensure a favorable environment for your plants.

# Chapter 10:

## From Garden to Table

I guess I can now call you my fellow successful gardener. You've learned new approaches to gardening, and I believe your first harvest season should yield surplus and healthy, organic, fresh crops. You've planted, you've carefully and diligently tended to your garden, and you've harvested. Now is the time to enjoy the fruit of your labor.

### Recipes from the Garden

The produce from your garden is in your kitchen pantry, and if you want to do something different, maybe be creative and experiment a little. Well, let's look at a few recipes that will work well for you:

#### 1. Pasta



Figure 10.1

#### Ingredients

- 1 (8 ounce) pack of dry spaghetti
- 8 tbsp butter

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2 cloves of garlic (minced)

1 tbsp chopped fresh parsley

Freshly ground black pepper

Salt (to taste) and thyme

1 pinch cayenne pepper (optional)

1 cup parmesan cheese (grated)

### **Directions**

In a large pot, bring salted water to boil. Cook the pasta for 8-10 minutes or until al dente, draining.

Melt butter and garlic in a skillet on medium-low heat to avoid burning. Season with parsley, salt, thyme, black pepper, and cayenne pepper.

Add the cooked pasta to the skillet and gently toss until it is fully coated with butter. Then, increase the heat to medium until the pasta has absorbed the butter. Serve and top with grated parmesan cheese.

## **2. Dill Chicken Soup**



Figure 10.2

### **Ingredients**

- 1 tbsp oil
- 2 medium-sized carrots (chopped)
- 1 small onion (chopped)
- 2 cloves of garlic (minced)
- ½ cup uncooked orzo pasta
- 1½ cups shredded chicken
- 6 cups chicken broth
- 1½ cups peas
- 4 tbsp chopped fresh baby spinach
- 2 tbsp chopped fresh dill
- 2 tbsp lemon juice
- Ground pepper (optional)

### **Directions**

Heat oil over medium heat in a 6 qt stockpot, then sautee the carrots, onion, and garlic in the heated oil until they're tender.

Stir in the chicken broth, pasta, and shredded chicken and bring to a boil. After that, reduce the heat to low and simmer uncovered

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for 5 minutes. Afterwards, stir in the peas, dill, and spinach and bring back to a boil. Reduce the heat again and simmer for another 3-4 minutes or after the orzo is tender. Stir in the lemon juice, and then serve and top with the ground pepper if you wish.

### **3. Garden Galette**



Figure 10.3

#### **Ingredients**

1 cup trumpet mushrooms

4 tbsp unsalted butter

Kosher salt

1 medium leek (remove the root and dark green parts, and then half)

1 bunch thin asparagus (trim the woody ends)

1½ tsp fresh thyme (finely chopped)

¾ cups Gouda cheese

1 pie dough disc

Extra virgin olive oil

1 egg (beaten)

#### **Directions**

Roughly chop the mushrooms into very little chunks, and set a medium sized full one aside for decoration.

Place a large saute pan on medium-high heat. Add 2 tbsp of butter and the chopped mushroom, and cook, stirring occasionally, for about 7 minutes or until browned. Then remove from heat and

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pour into a bowl.

In a bowl, slice the leeks into about ¼ inch strips and wash. Then add the remaining 2 tbsp of butter in the empty saute pan and melt over medium heat.

Add the leeks seasoned with salt and cook while occasionally stirring for about 10 minutes or until they're very soft. Add the leeks to the browned mushrooms.

Next, chop the asparagus stems to the same size as the leek and reserve the decoration tips. Stir in the asparagus stems and thyme to the mushrooms and leeks.

Let the mixture cool for about 15 minutes, and then mix in the cheese. Taste it to see if it needs more salt.

Lightly flour a flat surface, and roll the pie dough to a 13-inch round. Then, transfer the dough to a baking sheet already lined with parchment paper.

Spread the filling (the mushroom, leek, and asparagus mixture) over the dough, leaving a 1½ inch border, then fold the dough over the filling and crimp it. Chill it for an hour

Heat the oven to 400°F and slice the reserved mushroom into the same length as the leek and asparagus.

Brush the beaten egg over the pie dough, then arrange the cut mushrooms and asparagus tips on top of the filling, overlapping them over each other.

Bake for 35-45 minutes, or until the crusts and vegetables are golden brown. Serve warm or at room temperature.

#### **4. Lemon-Basil Potatoes**



Figure 10.4

#### **Ingredients**

16 baby fresh potatoes (halved)

2 cups chicken broth

½ cup fresh lemon juice + 2 tbsp

2 tbsp extra virgin olive oil

Kosher salt

¼ tsp ground black pepper

1 tsp lemon zest

¼ cup fresh basil leaves (chopped)

#### **Directions**

Mix the potatoes, broth, lemon juice, olive oil, 1 tsp of salt, and the black pepper in a medium saucepan. Boil the mixture over high heat. Once it boils, reduce the heat and simmer for about 20-25 minutes or until the potatoes are tender.

Then drain the excess water and pour the potatoes in a serving bowl. Drizzle a tsp of olive oil, the lemon zest, and 3 tbsp of basil over the potatoes and toss until it is well mixed. Serve and sprinkle the remaining chopped basil leaves over it.

## 5. Grilled Vegetables



Figure 10.5

### Ingredients

3 red bell peppers (seeded and halved)

3 medium-sized yellow squash (sliced into  $\frac{1}{2}$  inch-thick rectangles)

3 zucchinis (sliced into  $\frac{1}{2}$  inch-thick rectangles)

3 Japanese eggplant (sliced into  $\frac{1}{2}$  inch-thick rectangles)

12 cremini mushrooms

1 bunch asparagus (woody ends trimmed)

12 green onions (roots cut off)

$\frac{1}{4}$  cup olive oil + 2 tbsp

Freshly ground black pepper

3 tbsp balsamic vinegar

2 cloves of garlic (minced)

1 tsp fresh parsley leaves (chopped)

$\frac{1}{2}$  tsp rosemary leaves (finely chopped)

### Directions

Prepare the barbecue to medium-high heat or place a grill pan over medium-high heat. Put each vegetable in separate bowls,

coat lightly with the oil, then sprinkle salt and pepper. Then grill the vegetables until they're tender and slightly charred, which usually takes 8-10 minutes for bell peppers, 7 minutes for the yellow squash, zucchini, mushrooms, and eggplant, and 4 minutes for asparagus and green onions; try not to shift the vegetables once you place them on the grill. Once you're done, arrange the vegetables on a platter.

In another bowl, whisk 2 tbsp of oil with vinegar, basil, rosemary, and parsley. Add salt and pepper to this mixture, then drizzle the herb mixture over the vegetables. Serve warm or at room temperature.

These recipes are just the tip of the iceberg; believe me, there are more creative dishes you can make with garden produce.

## Keep Growing!

**Y**ou've gotten the first harvest from your garden, but it doesn't have to stop there—I believe this isn't a one-time thing for you.

We've discussed extending the season, and this is probably the best time to do that. Summer is over, but fall is coming, and you can harvest cold-hardy crops during fall. So, now is the time to get the seeds and seedlings of your carrots, spinach, kale, and many others into the ground and cover them with row covers to shield them against extreme cold.

If you don't want to risk planting outside and exposing your plants to extreme cold, why not practice indoor gardening? You can grow a few herbs and veggies on your windowsill or have your own cute little greenhouse in one of the rooms.

But that's not all. It's not too early to plan for spring either. Maybe you didn't like the layout of your garden; now is the time to plan a new one. If there are any containers or bed frames that need repairs or improvements, or if there are some trees or shrubs that need pruning, do whatever needs to be done now so you can focus on other things when the new season starts.

Also, reflect on what worked well and what didn't in the last planting period. That way, you'll know what approaches to follow and what approaches to improve upon in the next season, and you won't repeat previous mistakes.

And, instead of doing nothing, you can use this period to learn. Maybe new methods you'd like to lay your hands on. Or something new you might want to plant. You'll be surprised at how many tips you can pick from a YouTube video.

In short, this season might be over, but you can either extend it,

*Design Your Perfect Herbs & Vegetable Oasis with Ease*  
or prepare for the coming one.

## **Afterword: Thanks**

**W**e're finally at the end, and I want to say thank you for making me a part of this journey. Gardening is an exciting, exhilarating, and fulfilling process that most people love sharing with their friends and loved ones, and I'm glad I'm at the start of this journey with you.

By now, you should have learned what you're doing wrong or what you should do to grow a successful garden. And as you continue gardening, I want to let you know that you don't have to be perfect. You can still make silly mistakes. We all do. And you should know that every moment of the gardening process and every season is important. Embrace the joy of connecting with nature, the stress and joy of planting and tending to your plants, the stress and joy of harvesting the fruit of your labor, and the restlessness and joy of rest.

Here's to many more bountiful habits.

## **Leave a Review**

**I**'d love to hear your thoughts about "Seven Secrets to Growing in Raised Beds and Containers for Beginners." Your review may encourage others to explore this beneficial gardening method.

When you share your unique ideas from this book in a review, you're not just supporting the authors who have shared their experiences but also helping others uncover the joys of growing in raised beds and containers. Your review could be the catalyst for someone's new gardening adventure.

Take a moment to share your experience. Together, we can create a thriving community of gardening enthusiasts. Your feedback is more valuable than you think!



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# Appendix 1: Glossary

**Aeration:** The process of introducing air into the soil to improve water and nutrient absorption by breaking up compacted layers which promote healthier root systems.

**Annuals:** Plants that complete their entire life cycle, from germination to seed production, within a single year or growing season.

**Biodegradable:** Materials or substances capable of being decomposed by bacteria or other living organisms, thereby avoiding pollution. In raised bed gardening, this often refers to mulches or planters.

**Bioavailability:** The degree to which nutrients are available to plants for absorption. Influenced by soil conditions, pH levels, and the presence of other compounds which can tie up nutrients.

**Companion Planting:** The strategic placement of different crops in proximity to each other to deter pests, promote pollination, and optimize space usage, ultimately leading to healthier and more productive gardens.

**Composting:** A method of recycling organic waste materials into a rich soil amendment, which provides nutrients to the soil and improves its overall health.

**Drainage:** The capacity of soil to allow water to flow through it, which is essential to prevent waterlogging and root rot in plants.

**Drought Tolerant:** Refers to plants that can withstand periods of low water availability, an important consideration for selecting crops in certain climates or for low-maintenance gardens.

**Ecology:** The branch of biology that deals with the relationships of organisms to one another and to their physical surroundings. In gardening, understanding ecology can help with plant selection

and pest management strategies.

**Erosion:** The process by which soil and rock are removed from the Earth's surface by wind or water flow, and then transported and deposited in other locations. Raised beds can help reduce erosion by containing soil.

**Fertilization:** The addition of nutrients to the soil to promote plant growth. Organic options such as compost or manure are often preferred in raised bed gardening.

**Frost Line:** Refers to the depth to which the groundwater in soil is expected to freeze. Knowing the frost line can help in constructing the foundation of raised beds to ensure they are not affected by freeze-thaw cycles.

**Germination:** The process by which a plant grows from a seed or similar structure. The proper soil temperature and moisture levels are crucial for good germination rates.

**Green Manure:** A cover crop grown primarily to add nutrients and organic matter to the soil. Once the plants are grown, they are tilled into the soil to improve soil quality for future plants.

**Humus:** The organic component of soil, formed by the decomposition of leaves and other plant material by soil microorganisms.

**Hydroponics:** A method of growing plants without soil by using mineral nutrient solutions in a water solvent.

**Irrigation:** The application of controlled amounts of water to plants at needed intervals. This facilitates growing plants in areas where rainfall is insufficient or variable.

**Inoculate:** To introduce microorganisms such as bacteria or fungi to the soil, which can have beneficial effects on plant growth, such as fixing nitrogen or decomposing organic matter.

**Jar Test:** A simple procedure used to estimate the relative proportions of sand, silt, and clay in soil. This test aids in determining the soil's texture, which is integral for assessing

drainage and nutrient retention capabilities.

**Kelp Meal:** A soil amendment derived from seaweed that is rich in micronutrients. It promotes plant health and can enhance growth and crop yields.

**Knolling:** The practice of organizing tools and equipment at right angles or in parallel lines to create an organized workspace. While not specifically a gardening term, it can be useful when laying out tools for raised bed construction or maintenance.

**Loam:** A rich, fertile soil that has a good balance of clay, sand, and silt, along with organic matter. It's ideal for raised bed gardening due to its excellent drainage and nutrient content.

**Mulch:** Material spread over the surface of the soil to retain moisture, suppress weeds, keep the soil cool, and make the garden bed look more attractive.

**Microgreens:** Young, tender greens that are harvested just after the cotyledon leaves have developed, often used as a nutritious garnish or salad ingredient.

**N-P-K:** Stands for nitrogen (N), phosphorus (P), and potassium (K), the three primary nutrients required by plants and commonly found in fertilizers.

**Organic Gardening:** A method of gardening that does not use synthetic fertilizers or pesticides, focusing instead on natural growing techniques and materials to enhance soil and plant health.

**pH Level:** A measure of the acidity or alkalinity of soil. pH levels can affect plant growth and nutrient absorption, making it important to know the pH preferences of your plants for optimal growth.

**Perennials:** Plants that live for more than two years, typically flowering and producing seeds yearly after they mature.

**Quart:** A unit of volume measurement used to describe the capacity of pots or containers. One quart is equivalent to

approximately 0.95 liters.

**Rhizosphere:** The region of soil around the roots of a plant that is influenced by root secretions and associated soil microorganisms.

**Rootstock:** A plant with an established root system, onto which a cutting or a bud from another plant is grafted.

**Soil Amendment:** Material added to soil to improve its physical properties, such as water retention, permeability, water infiltration, drainage, aeration, and structure.

**Spading Fork:** A garden tool with thick, flat, sharp tines used to dig into hard soil and break it up.

**Succession Planting:** The practice of planting new crops as others are harvested to maintain a constant supply of produce.

**Thinning:** The process of removing some plants, or parts of plants, to provide more space for the growth of remaining plants.

**Underplanting:** Growing low-growing plants beneath taller plants to make efficient use of space in the garden.

**Upcycling:** Reusing discarded objects or materials in such a way to create a product of a higher quality or value than the original, often seen in raised bed gardening when using repurposed containers or materials for planters.

**Vermiculite:** A lightweight, absorbent mineral used in soil mixtures to improve aeration and moisture retention.

**Varietal:** A plant that has been bred for certain traits, such as size, color, or resistance to disease.

**Watering Can:** A container with a spout used for watering plants. An essential tool for gently watering raised beds without eroding the soil.

**Weeding:** The act of removing unwanted plants that compete with your garden plants for nutrients and space.

**Xeriscaping:** Landscaping designed specifically for areas that are susceptible to drought, or for properties where water conservation

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is practiced. Includes the use of plants that require less water.

**Yield:** The total output or production of a given plant or garden. For raised bed gardeners, maximizing yield is often a primary goal.

**Yarrow:** A perennial plant often used as a companion plant, believed to enhance the growth and flavor of vegetables and repel certain pests.

**Zone Gardening:** A method of gardening that takes into account the different hardiness zones where specific plants can thrive.

**Zucchini:** A summer squash that is easy to grow in raised beds and can produce a prolific yield under the right conditions.

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**Thanks for Reading!**



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