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Kitchen Garden eBook



Zone 1

Zone one gardens are near to the house, along the most trodden routes. They are what we typically build first, and they provide daily kitchen additions like greens, herbs, and vegetables. We keep the higher maintenance crops nearby so that looking after them is convenient. Our zone one kitchen garden will focus on perennial greens, vitamin-rich vegetables and medicinal/culinary herbs, whose inclusion in all of our meals will equate to a healthier family.

Zone 1 is intensively cultivated which basically means it has a lot growing in it & needs lots of attention! No-dig gardens can be planted much more intensively as the nutrient sources are high. The plantings are very diverse. Diversity is a high priority when you practice Permaculture. Herbs, flowers, fruits & vegetables all grow together in carefully designed relationships. You also aim for a diversity of microclimates which enables the growing of a diversity of plants!

Deciding on what you want at the start is essential to being able to design a system which has many supportive relationships. Remember that Zone 1 can be not only a productive area but a beautiful one too! Although annuals are planted in this zone many perennials are also asparagus, artichoke, chives, NZ spinach, rhubarb, scarlet runner beans & various herbs as companion plants & pest predator attractors.

When designing a garden, it is a good idea to look for beneficial guilds of plants that can be planted together so that they mutually benefit each other. A useful guild for this climate would be peas inter-planted with lettuce, carrots & radish. Peas supply nitrogen for the lettuce & shade, the radish aids the carrots as they grow fast & open up the soil & the carrots send roots to aerate the deeper soil. The lettuce also makes radish tender. Planting in guilds also means that you get a diversity of food at the same time rather than a glut of one or two varieties.

Small animals can play a part in the maintenance of a Zone 1 garden. Guinea pigs in hutches can be moved about a grassy area & will keep it mowed & give manure for the compost, hens can be let in when crops are at an end to clean up, fertilise & cultivate or use the chook dome method & get them to do all the work! Ducks can clean slugs up before you put in the beds & then let in occasionally for follow-ups once the plants are large enough to not be walked on!



Zone 1 needs a diversity of micro climates which can be beneficially created with suntraps, which create warm sheltered areas. These can be made with paths made of brick, stone or gravel, which act as thermal mass giving out the heat they collect during the day. Even small ponds will create humidity, soil moisture & warmth around them. So, a pond will create a warmer area for frost sensitive crops. Compost areas can also provide various microclimates too & extra nutrients & moisture leach into the soil around them.

One way to provide a wide range of different medicinal herbs is through design of a herb garden. If made with rocks or bricks, it can create different conditions & thermal mass of vertical space.



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Worm farms can be incorporated into your zone 1 design and in exchange for recycling kitchen scraps will provide useful vermicast & liquid fertiliser for both garden & glasshouse.

Cold frames for raising seedlings can be placed in Zone 1 close to the area where propagation mix ingredients are & for easy transplanting & fertilising with the worm juice.





Biointensive Gardening

“Biointensive” is an umbrella term used to describe several methods for growing a lot of food in a small space. The idea centres around nutrient-rich soil that can support growing crops closer together, reducing the amount of resources and hands-on labour required. It incorporates compost, livestock, beneficial insectaries, and strives toward a closed-loop system on a homestead, whatever the size.

Biointensive gardening starts with creating your ecosystem, that is, not just what’s in your garden beds, but everything around it. A healthy garden is surrounded by habitat for beneficial insects, so good bugs can take care of bad bugs for you. It may include habitat for bats or toads (which also eat bugs) and it may even provide food for wildlife (deterrents away from our highly protected vegetable beds). A healthy ecosystem has a way of recycling nutrients, be it by composting or mulching beneath existing perennials.

Biointensive gardening focuses a lot on the quality of the soil. When farmers use biointensive gardening, they will loosen up the soil at least twice as deep as normal gardening preparations. This way, their plants’ roots can penetrate through the soil deeper and get more nutrients and water from deep underground.

Another important aspect of biointensive soil building is compost. It is important to return nutrients into the soil after plants have taken them out of the soil. With a biointensive planting method, you will put compost, usually made up of dry leaves and straw, kitchen scraps and clippings from the yard, back into the soil by mixing it into the ground really deep. It will allow for larger yields for crops because the soil will be more nutrient rich.



Biointensive sustainable garden plants include any plants you can plant in your garden. The difference is how they are grown. You will place your plants in more space saving arrangements, and this way your biointensive gardening efforts will be fruitful. Farmers are using the land more efficiently, and are able to plant more in the space they have. How to Grow a Biointensive Garden.

Usually, in normal planting, you would plant rows of lettuce, and rows of peppers, etc. With biointensive gardening, you would go ahead and plant your rows of lettuce. They grow close to the ground and can grow close to each other. Then, you would plant peppers among the lettuce because they grow taller, and have tall stems. This will not interfere with the lettuce growth and the lettuce won't interfere with the pepper growth because the peppers actually grow above the lettuce. It is a great combination.

The biointensive planting method includes no single planting of plants and no mechanized equipment if at all possible. The biointensive soil building belief is that machinery uses too much energy and leaves soil too susceptible to erosion. Because it is heavy, it also compacts the soil, which means all the double-digging that was done to prepare the soil was for naught. Another thing that is part of the biointensive planting process is the use of open-pollinated seeds instead of genetically modified seeds. Because the goal of biointensive gardening is to incorporate all natural gardening in the farm, they will not use anything modified. The main goal of biointensive soil building is to improve the soil. By double planting the soil and digging deep and adding compost back when your crops are done growing, you are improving the soil for each new crop.



No Dig Gardening

Everyone agrees that gardening would be way more fun, and many people would be more inclined to take up gardening if there wasn't the need for all that back-breaking hard work such as digging... It may be a surprise to many people, but digging IS NOT a necessary part of gardening at all!

So how did we get into the habit of digging up our gardens in the first place?

Basically it's just old tradition. Historically people have treated their gardens like miniature farms, people looked at how huge areas of land were farmed, and then did the same on a smaller scale, because that's what they knew how to do.

Digging and turning over the soil exposes the delicate soil ecosystem to the air which dries it out, and to the ultraviolet rays of the sun, which sterilize the soil – killing the soil organisms. The soil loses a lot of its nutrients, such as carbon and nitrogen. It also loses a lot of its organic matter, and as a consequence, does not retain water as well. The delicate soil structure is destroyed, compaction of soil occurs, leading to hardpan formation, and reduced water infiltration in the soil, and more surface runoff, which increases soil erosion.

Tillage is the term used to describe the agricultural preparation of the soil by digging it and turning it over. So why are the farmers so fond of this destructive practice? Well, they found that when you first dig up the soil, fertility goes up, and plants grow better. The reason is that the tiny little bodies of all the soil organisms that have just been killed by digging break down, releasing their nutrients to the soil. The catch is, it only works once, and then your soil is sterile and the plants are worse off, and they become more prone to diseases, and require even more fertilizer than they normally would.



In Nature, soil does not need to be manually cultivated for spectacular forests to grow. What holds true in Nature also holds true in the garden. In a forest, organic matter in the form of fallen leaves, twigs and branches, annual plants at the end of their yearly cycle and other plants at the end of their lives, are all deposited on the forest floor when they decompose into rich humus.

We can add organic matter directly to the soil surface, such as manure, compost, straw, leaves etc. Garden waste such as prunings from trees and shrubs can be fed into a mulcher to break them down into smaller pieces, and then spread over the soil as a mulch.

Adding a layer of organic matter over the soil, in a layer approximately 5cm-15cm (2"-6") thick is in effect 'sheet composting', where the garden beds become large composting areas. By the action of earthworms, bacteria, fungi and insects, the organic matter is slowly broken down and released into the soil, providing nutrients to the garden. Because the soil is not disturbed, a stable soil ecosystem is created, and plant health is improved. Moisture is also better retained due to the mulching, and the organic matter in the soil works like a sponge to better retain the moisture in the soil. The mulching also prevents soil erosion, stops runoff of rainwater across the surface, and assists the rainwater to percolate into the soil. The earthworms will create channels in the soil, which will help aerate the soil.



Sheet Mulching

Sheet mulching is a gardening technique that suppresses weeds and builds fertile soil. In sheet mulching thick layers of organic matter are placed on the ground lasagne style. These layers are then left to decompose ultimately creating a rich planting medium (compost) that is terrific for vegetable gardens and ornamental planting beds.

The advantage of sheet mulching over composting in a bin is that the finished compost does not have to be hauled to the actual planting bed. It is created right on top the planting bed. The process can take three to six months so it is best to plan ahead and sheet mulch the season before you want to install your plants. However, it is possible to install some plants right after you sheet-mulch by punching a hole through the sheet mulch for each plant and popping them in. Sheet mulching is effective at suppressing weeds because it is so thick – as much as 12 inches – and because one of the bottom layers has no holes in it for air and light to sneak in. The weeds and anything else underneath are snuffed out. You can even sheet mulch right over the top of sod. There is no need to remove the lawn ahead of time.

However, a mix of grass clippings, well-rotted manure, non-invasive weeds without seeds seaweed & leaves can all be used instead. After laying the newspaper/cardboard out put the manure on followed by a mix of equal parts of the other materials. This is best done in early autumn & left to breakdown over winter. When you go to plant make a depression about the size of half a soccer ball in the mulch & fill with good compost & plant!



Some Beneficial Herbs

Surprisingly, dandelions (like many weeds) benefit our garden in many ways, the most important of which is fertilizer. Dandelions reach deep into the subsoil with those long taproots, dredge up important nutrients, and store them in their leaves. Dandelions excel at accumulating potassium, phosphorus, calcium, and a handful of other nutrients in its leaves, which are important for healthy plant growth. When those leaves die back or are cut back and left to decompose, they fertilize the soil. Dandelions increase earthworm populations, which is good for soil health. Some market gardeners even cultivate a specific variety of dandelion with giant leaves as a crop. As if that weren't enough, dandelion also has medicinal uses. The dried root is an excellent liver and kidney tonic. If dandelions are left to flower, they will attract pollinators and beneficial insects.

Yarrow is a gorgeous flower that is beloved by all manner of beneficial insects: ladybugs, hoverflies, parasitic wasps, and lacewings. I plant yarrow in between every few rows in the vegetable garden. Its scent will confuse pests trying to hone in on your vegetable crops! Yarrow is also a great fertilizer, its leaves are rich in potassium and phosphorus. Yarrow will provide these same fertilizing and beneficial insect benefits under fruit trees.

Chamomile has been called "the plant's physician" because it supports and appears to heal almost any plant it is planted next to. Chamomile is a fertilizer plant, its roots dredging up potassium, phosphorus, and calcium. Mulching with the spent plants will help improve your soil. The flowers attract pollinators, and beneficial insects are attracted to the lacy foliage. It is said to especially improve cabbage and onion crops, and it works well under fruit trees, too. You may know chamomile best as an excellent tea with calming properties.

Comfrey is the poster child for permaculture gardens. It's almost cliché to plant it, except it would be a shame to not grow this plant in your garden. Comfrey is perhaps the most important mulch plant. It's at the top of the list of natural fertilizers, accumulating potassium, phosphorus, calcium, and a handful of other nutrients in its large leaves. It is commonly planted underneath fruit trees and throughout the vegetable garden. Comfrey's large leaves can be chopped and dropped frequently throughout the season to feed soil or to add to a compost pile.