

JAMES MOORE

# Gardening

A BEGINNER'S GUIDE TO GROWING  
PERENNIAL VEGETABLES, HERBS AND FRUITS

Gardening

HYDROPONICS

HERBS

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6 BOX SET

**JAMES MOORE**

# *Gardening*

**A BEGINNER'S GUIDE TO GROWING  
PERENNIAL VEGETABLES, HERBS AND FRUITS**



**Gardening: :**

A Beginner's Guide to Growing  
Perennial Vegetables, Herbs and Fruits

by James Moore

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# Introduction

All plants are recognized with their unique life cycle and growing requirements to survive. Perennials are a new group of plants and these plants are really special in this long life. These plants can live for two years or more and bloom during summer and spring.

Traditional plants die back in every winter and fall, and you have to grow them once again in the next season. If you want to save your time and money, it will be good to get the advantage of perennial vegetables, fruits, and herbs.

Some plants can survive the winter and fall months without losing their roots. There are five famous types of perennials, such as monocarpic, woody, herbaceous, evergreen and deciduous.

- Typically, herbaceous perennials will be grown in the prairies and fire-prone areas and these are particularly grasses.
- If you want to grow woody perennials, you can select shrubs, towering trees and vines.
- Monocarpic perennials may take almost one year to the completion of this procedure. These are flowers to make seeds and then die.
- Deciduous perennials shed their leaves in the fall season of this year.
- Evergreen perennials plants can live a longer life and you can maintain their foliage during winter and fall months.

Red clover is a special herbaceous perennial plant and it is found all over the grasslands.

This plant is really famous and it is considered as a favorite plant of farmers. It is important to fix nitrogen in the soil of red clover. It will take two years to produce flowers and it is a true perennial.

Apple is also a fruit of woody perennial plants and its trees take almost two years to grow and produce fruits. Agave is an example of monocarpic perennial and it takes many years to grow and produce flowers and seeds.

If you want to grow a garden with perennial vegetables, herbs, and fruits, there are numerous choices for you. This book is designed for your assistance to grow your own garden.



# **Chapter 1 – Basic Tools Required For Perennial Gardening**

Gardening is a tough hobby. It takes in physical labor which is easier said than done. Therefore, every gardener must own certain particular gardening tools. No matter how much physical power you can exert in your gardening hobby but you need to have certain gardening tools to implement mechanical power as well especially if you own a perennial garden.

Perennials always grow tough and strong root crops. These plants must also be divided every 2-3 years. Therefore, we are providing you with a list your ‘must have perennial gardening tools’ project should include in. They are;

## **1. Garden Hoe:**

It is an ancient agricultural instrument. It is a hand tool. It comes in a variety of shapes, designs and sizes. It is used to shape and clear the soil, take out weeds and harvest crop roots thus it is the best tool for renovating your overgrown perennial beds, mulching compost for your perennial garden and controlling weeds.



One tip in handling weeds is to always cut them off near the surface of the ground instead of digging them deep because this will bring more seeds to the surface which allows them to germinate in the presence of appropriate sunlight.

[http://i.istockimg.com/file\\_thumbview\\_approve/177730963/stock-photo-17773096-garden-tools.jpg](http://i.istockimg.com/file_thumbview_approve/177730963/stock-photo-17773096-garden-tools.jpg)

## **2. Garden Fork:**

It is an agricultural tool that is used for slacking, carrying and turning over the soil in your perennial gardens. The main purpose of this is to aerate the soil of your perennial beds.

It is similar to a spade which is a war tool. It is best used for breaking up chunks of soil and to let fertilizers and other organic matters enter in to the soil. They are also very helpful in taking out buried roots and

dividing clumps of perennial root crops. It does less damage to soil worms as well.

### **3. The Hori Hori:**

It is the weeding knife of your perennial garden. 'Hori' is a Japanese word that means 'to dig'. It is ideal for dividing perennial roots and transplanting them to a new garden bed. It is considered to be the most useful garden tool in your perennial tool shed.

Being good in levering out weeds, aerating your perennial compost, opening mulching bags and dividing tough perennial roots make this effective gardening too one practical purchase for your perennial tool set.

### **4. Yard Butler:**

It is a type of mattock. It has two sides. One side is like a garden hoe and it dices up the soil and slices off the weeds above the surface of the ground while the other side is a claw that is very useful in removing pesky grasses from your perennial flower beds.

So it is a combination of hoeing and cultivating actions. It is ideal for the tough roots of perennials. It can extract grass roots easily. It also loosens up grass quickly.

### **5. Garden Rake:**

This gardening tool is an iron broom and considered to be best used for removing autumn leaves and clearing perennials gardens out in springs.

Plastic rakes are available too. They are quite inexpensive and sturdy. For perennial gardens, bamboo and steel rakes are the best options.

They easily rake out the autumn leaves without damaging the new emerging perennial vegetables, herbs and fruits in your garden. Other than raking, it is useful for light weeding, loosening the soil and removing dead grass from your perennial garden. Its larger version is hay rakes that are frequently used in farming.

## 6. Bypass Pruner:

[http://i.istockimg.com/file\\_humbview\\_approve/10183466/stock-photo-10183466-gardening-tools.jpg](http://i.istockimg.com/file_humbview_approve/10183466/stock-photo-10183466-gardening-tools.jpg)



For blooming perennials in your garden, it is very important to have a bypass pruner in your tool shed. Because generally, the whole first set of perennial leaves are cut off and the dead flowers are also taken out therefore a bypass pruner becomes a perfect choice to achieve these goals.

Remember to be careful enough when pruning your perennial plants because you can easily cut off or damage the new emerging flower

buds. It can be a great lose in the early springs of your perennial garden.

### **7. Shovel:**

This floriculture tool is best used for digging, carrying and shifting bulk materials in your perennial garden such as soil, gravel, snow and sand. They are mostly designed as short handled shovels. These are ideal for digging in planting seasons.

It helps you dig small holes that are best suited to plant your seedlings in to. It is important to learn to use hand shovels correctly but even if not used properly you can still manage to make a hole for your new seedling but it will also give you a sore back.

### **8. Transplanting Spade:**

If you own a beautiful perennial garden then having a transplanting spade in your gardening tool shed is a must. Most of the perennial plants such as vegetables and shrubs do have tough, strong roots. These root crops are meant to be divided every two to three years.

It helps them grow well and groom effectively. However, dividing perennial root crops is a tough task and a transplanting spade has proven to be very useful in completing this process.

After collecting all of these tools, you are ready to plant your first perennials plants. Now is the time to learn about the growing conditions of perennial plants.



## Chapter 2 – Various Perennial Growing Conditions

If you want to grow your own perennial garden then you must know exact growing conditions of your selected perennial fruits, vegetables and herbs. They all have their own growing conditions.

Therefore, it is essential to have a comprehensive knowledge of how to choose the right type and its requirements.

### **What to Plant:**

First question in the process of planting your own perennial garden is to select the types of perennials that you want to have in your garden beds according to the climate conditions of your area.

Avoid buying over grown and leggy looking plants. Also those plants which have survived diseases and are struggling to live now must also be avoided. Also discard weeds or moss before transplanting the plant in your garden bed.

### **Hardiness Zone:**

You can use this temperature chart to determine what zone you live and which type of perennial plants will suit the climate conditions of your zone.

<b>Zone</b>	<b>Temperature</b>
1	Below -50 F

2	-50 to -40 F
3	-40 to -30 F
4	-30 to -20 F
5	-20 to -10 F
6	-10 to 0 F
7	0 to 10 F
8	10 to 20 F
9	20 to 30 F
10	30 to 40 F

### **Holding the Perennials:**

Perennial plants are hard by nature and can survive a few days in containers. But it is important to transplant them from their containers or pots to your perennial garden beds as fast as possible.

It is important for them to get established in the garden before the temperature gets freezing outside. It is inevitably vital to keep your perennials moist. Water them regularly. In sunny spells, bring a shade over them so the soil can stay moist.

### **When to Plant:**

- **Fall Planting:** It allows early blooming in spring seasons. It is also the best season to divide your perennial plants.

- **Summer Planting:** It is very useful. Just don't let your perennials get dry. Watering them is essential. It is not recommendable to divide and transplant your perennials in summer.
- **Mid to Late Spring:** This period is the ideal time for your perennials because they can get the chance to establish before the heat of summer.

### **Preparing the Soil:**

Properly prepare the soil of the garden beds for your perennials. Rich and well drained soil is the best option for perennials. If you have got dry and sandy soil in your garden beds then add neutral or acidic fertilizers in it. If it is a heavy clay type then you need to open it up by a lot of organic matter in it.

Never let the soil of your perennial garden beds get soggy but keep it moist throughout the year.

### **Weeds:**

The planting area of your perennial garden beds must be clean and clear. There must not be any weeds growing in there. It is important to cut the weeds just above the surface of the soil because taking them out from the soil brings up more seeds that can then grow more weeds. You can take them out by bare hands once a month.

### **How to Plant:**

Perennial plants are also planted like other plants. Simply hold the pot, make it upside down and take out the plant. Then dig a hole in the garden bed of your perennial garden and place the new plant in it. Set the soil around it and water it thoroughly.

Keep a distance of at least two to three inches between two plants. Spread mulch around your newly planted perennials, although it is optional.

### **Watering:**

Perennial plants do not require much maintenance. Therefore, you do not need to water them as much as well. But it is important to keep the soil moist and well drained throughout the year.

That's why you must, at least, water your perennials once or twice a week. If the weather is rainy, don't water them more. If it is summer, water more frequently.

### **Fertilizing:**

Perennials require different kind of fertilizers according to their type. Some require acidic fertilizers while other need neutral ones. You will also need to put in compost with your fertilizers.

You can either use a liquid fertilizer or a slow release fertilizer that is granular type. If you have prepared your soil properly before planting your perennials then you won't need to put more fertilizers in the first year.

### **Maintaining your Perennials:**

It is very easy to maintain your perennials. They do not require much care and maintenance. Some important guidelines include:

- Prune your perennials regularly.
- Water during drought.
- Water early mornings. It will prevent evaporation.
- Control all kind of pests and diseases well on time.
- Divide perennials every two to three years.
- Divide them from the centre.
- Regularly remove dead flowers. It will encourage blooming.

<http://images.freeimages.com/images/thumbs/086/fresh-soil-1468423.jpg>



Perennial plants make an amazingly beautiful addition to your home garden. They are easy to maintain and stay productive for many years. They bear beautiful flowers and grow leaves with great tastes and fresh aromas.

You can divide them and grow your perennial garden as much as you have space and capability.



# Chapter 3 – Getting Started With Perennial Vegetables

Perennial vegetables are a fun to grow. They are easy to plant and require very less maintenance. Perennial vegetable plants have an average life of more than two years. They then die and re-grow from the same root crops in the next season.

Therefore, it is important to leave some of the root crops in the soil during harvesting season so they can grow back in the next spring all by themselves. It is recommendable to divide perennial vegetable plants every two to three years. Simply divide the plant from the middle, reach the root, divide it and then transplant one part to another garden bed. Here are some famous perennial vegetables and important tips to sow, maintain, harvest and re-grow them;



## 1. Globe Artichoke:

[http://i.istockimg.com/file\\_thumbview\\_approve/18602357/3/stock-photo-18602357-artichokes.jpg](http://i.istockimg.com/file_thumbview_approve/18602357/3/stock-photo-18602357-artichokes.jpg)

It is a large and attractive perennial vegetable. They grow beautiful purple flowers. Their flower buds are edible. Some of these flower buds are not cut off during the harvesting season.

It is important to grow this perennial vegetable in sun and moist. Keep the soil well drained. They need consistent moisture in soil to grow well. You can start your new globe artichoke perennial by (I) a divided root or (II) seeds. Keep two plants 24-36 inches apart. Grow them in rows.

It is advisable to lay a 2 inch layer of compost on the soil before sowing or transplanting this beautiful fuzzy purple perennial vegetable.

## **2. Asparagus:**

It is a hard perennial vegetable. It can last for decades under favorable conditions in your perennial garden. It is harvested in the spring. Like globe artichoke, asparagus also need sun and moist.

They require well drained soil too. Before sowing or transplanting asparagus, mix the soil in your garden bed with a 2 inch layer of thick natural compost. Place two plants of this beautiful perennial vegetable 12 inches apart from each other.

New plants will take around 6 weeks. In the second year of its growth, it will be ready for harvesting. Leave some of the root crops in the soil so they can re-grow in the next spring.



[http://www.italoamericano.org/sites/default/files/media/inset/Asparagus%20grow\\_0.jpg](http://www.italoamericano.org/sites/default/files/media/inset/Asparagus%20grow_0.jpg)

### **3. Jerusalem Artichokes:**

This beautiful perennial vegetable is from the family of sunflowers. They grow edible tubers like potatoes. Similarly, they can be eaten raw or cooked. They can be a better choice for people with diabetes because their carbohydrates break down to fructose instead of glucose.

It is good to leave 15 to 24 inches space between the plants when sowing. They grow tall and bear yellow flowers like sunflowers. It is important to handle your perennial tubers with care as their skin is very thin.

Again, like asparagus and globe artichoke, leave some root crops of Jerusalem artichoke in the soil during harvesting season and then they grow back from them in coming spring by themselves.



<http://www.eatcology.com/wp-content/uploads/2012/08/jerusalemartichoke1-300x300.jpg>

#### **4. Rhubarb:**

Though it is a hardy perennial vegetable but many people consider it in perennial fruits as well. If you want to add this beauty in your perennial garden, plant it in sun and moist.

Also keep the soil well drained. It stays productive for many years therefore it is important to plant it at a place in your perennial garden where it won't get disturbed easily. Spread 2 inch layer of compost on the soil before sowing it. Do this when the air temperature is 80 degrees Fahrenheit or above.

In the early spring of the first year of its growth, apply a balanced fertilizer. It will be ready for harvesting in its second year. After six to eight years, its stalks will start getting thinner, at that time divide the plant and transplant half of it to another flower bed in your perennial garden.



[http://www.countrygardener.co.uk/sites/default/files/styles/cover\\_corner/public/field/image/rhubarb.jpg?itok=U7ZvQFEh](http://www.countrygardener.co.uk/sites/default/files/styles/cover_corner/public/field/image/rhubarb.jpg?itok=U7ZvQFEh)

## **5. Radicchio:**

It is a sharp flavored perennial vegetable. Many people consider it to be biennial but under favorable conditions such as weather and soil it can turn in to a perennial. It had dark red leaves with white veins. It grows a tightly clumped head which is edible. It is similar to cabbage or lettuce. It requires full sun and a well drained soil.

Keep the soil highly fertilized too. For starting up sow its seeds or plants in early spring and they will be ready to be harvested in late fall. Remember to leave some of the root crops in the soil during harvesting season.

It will help it to re-grow from these roots automatically in next spring. Its leaves have a bitter flavor but are largely used in salads. You can add salt and pepper to reduce the intensity of its bitter flavor.



[http://farm5.static.flickr.com/4108/4987728541\\_1b68c58b58.jpg](http://farm5.static.flickr.com/4108/4987728541_1b68c58b58.jpg)

Perennial vegetables are a beautiful addition to your garden not only visually but also it grows healthy vegetables for longer periods of time. Some of the perennial vegetables can stay productive for more than a decade such as Rhubarb. You can eat their edible parts in a number of ways like soups, salads, etc.

Also, these vegetables require low maintenance. You must add perennial vegetables such as globe artichoke, asparagus, Jerusalem artichoke and radicchio in your garden beds this spring and enjoy their beauty and produce for years.



## Chapter 4 – Tips to grow perennial herbs

Herbs are annual, biannual and perennial too, like all other plants. They are very famous among perennial gardens because they stay there for years and add beauty to the visual landscape. Also, they provide an excellent, continuous harvest for your kitchen.

Some people also dry these perennial herbs for off seasons, other may freeze them as well.

You can start your own perennial herbs garden in your backyard. They become accessible and handy this way. They also produce amazingly beautiful aroma in summer. Above all, you can even grow them in containers but it is advisable to grow them in garden beds as they live long and produce for many years.

Here are some of the most famous and beautiful perennial herbs and useful tips to grow and maintain them;

### 1. **Mint:**



Mint is a very useful green perennial herb. It is invasive. Therefore, it is important to contain it. You can grow it in some containers or pots. If you want to grow it in soil, then plant it in a bottom less container and place that container in the soil to contain it.

<http://images.freeimages.com/images/thumbs/34d/mint-leaf-1508743.jpg>

It produces beautiful purple flowers on a single spike. It also exudes a sharp amazingly fresh smell. Its leaves have a strong flavor. It best compliments peas, sauces, vegetables, teas and chocolates.

## **2. Green Oregano:**

It is a perennial herb that does not do well in winter season but you can shelter it with straws. It usually comes back in form in springs. It stays green in some zones as well. Otherwise, you can simply dry bundles of green oregano and use it in off seasons.

Its leaves have a strong sage like flavor. It is used in all kinds of foods including drinks and ice creams. However, it goes amazingly well with all kind of tomato dishes. It requires continuous pruning. Its stems can grow roots where they touch the soil.



<http://www.hartley-botanic.com/wp-content/uploads/2015/09/Oregano-plant-Greek-oregano-sept-2015-300x225.jpg>

### **3. Thyme:**

Another amazingly beneficial and useful perennial herb is thyme. It grows small green leaves and contains a fresh aroma. It is very flavorful. It actually requires very less maintenance and care. And you can grow it almost everywhere. It can grow for decades.

It is also very easy to propagate it from its cuttings. It grows beautiful tiny flowers. You can also cut down the stems and hang to dry them up to use later. Keep the dried leaves in a closed, airtight container.



[http://natureforcities.snre.umich.edu/wp-content/uploads/2009/street-tree\\_garden-designs/plant\\_library/plants/creeping\\_thyme.jpg](http://natureforcities.snre.umich.edu/wp-content/uploads/2009/street-tree_garden-designs/plant_library/plants/creeping_thyme.jpg)

#### **4. Chives:**

This perennial herb is a part of the onion family. It has green hollow spears. These spears contain a mild onion flavor. It best compliments the salads, vegetables, eggs, dips and sauces.

It is very simple to use as well. Just take out its fresh leaves and add the edible flowers in your dish to get that light, flavorful onion taste in your food instantly.

It is very easy to plant this perennial herb. You can start it from seed and soon it will be grown in to a large plant with clumps of bulb and tops.

It is a thick plant therefore it is important to divide it every three years. It dies in fall and grows back in spring.



<http://garden.org/images/App/articles/1238a.jpg>

### **5. Winter Savory:**

It is a bushy and hardy perennial herb. It contains a peppery flavor. It is added in teas, herb vinegars, herb butters as well as many other dishes. It requires relatively drier soil. With aging, its leaves tend to become sparser. Therefore, it is important to take cuttings and start new plants every three to four years. It has many medicinal qualities as well.



<http://content.outsidepride.com/images/products/detail/herbseed/wintersavory.jpg>

## **6. Rosemary:**

It is a lovely perennial herb. It has needle like pines. It grows blue flowers. Bees are very attracted towards this herb. Its leaves contain a pungent aroma. It is also used in bath tub waters. Soaking in this water can relax your muscles after a tired day.

It can easily be grown in containers. It is a flavorful addition to any dish such as roast chickens, cooked meats and vegetable stews. It also becomes an amazing addition to breads and biscuits. You can dry its leaves up for use in off seasons as it does not grow in cold climates.



<http://www.vegetable-gardening-with-lorraine.com/images/225Rosemary1.jpg>

## **7. Sage:**

This perennial herb has a strong bitter flavor. It is commonly used in stews, herb breads, stuffing and sausages. It grows in many colorful types. It has soft green leaves. It has a very pretty floral spike. It can be planted anywhere in your garden beds and it can be grown in most climates.

It dies in fall and then grows back in early springs. You can also dry up its leaves like many other perennial herbs.



[http://www.perennialfarmmarketplace.com/\\_ccLib/image/plants/DETA-2627.jpg](http://www.perennialfarmmarketplace.com/_ccLib/image/plants/DETA-2627.jpg)

Perennial herbs make a beautiful addition in your garden. They are usually tough plants and can grow in most of the climates. Most of these herbs require the same kind of maintenance.

Therefore, it is very easy for you to grow them even in your backyard. Remember to make a note of the flavors that you prefer over others and then plant your perennial herbs accordingly.

It will help you obtain your favorite flavors in teas, stews, sausages, chocolates, peas, etc. You can enjoy the visual landscape and healthy benefits both from your little perennial garden.

## **Chapter 5 – Tips To Grow Perennial Fruits**

Perennial fruits are considered to best for small gardens. They grow fast and produce for more years than annual or biannual fruit plants. They also don't take as much space as other fruits trees do. They must be grown in full sun. to start your perennial fruit garden, it is advisable to start with one or two plants and propagate from them to save money.

Some perennial fruits grow fast while others may test your patience. But either way, they add beauty to your visual landscape and also rejuvenate you with their pleasant fragrances and fresh tastes.

If you want to start your own little garden of perennial fruits, then here are some of them along with the much needed tips to grow and maintain them throughout the year;

### **1. Perennial Strawberries:**

It is one of the easiest perennial fruits to grow in your home garden. Plant them in fully sunny area. They require sandy loam which must be slightly acidic as well. It is important to plant your perennial strawberries in garden beds where you have not plant night shade crops in last two to three years.

Night shade crops include tomatoes, potatoes, etc. It will help in preventing the spread of Verticillium Wilt. Most perennial strawberry plants begin producing fruits in their second growth year. They can last

up to five years depending upon proper maintenance and rich fertilizing.

It is good to spread a thick layer of compost on the soil of your perennial garden bed every spring. It is important to cut the top growth after harvesting season. Don't cut the crown.



[http://sustainablog.org/wp-content/uploads/2010/03/3444654090\\_d2456e9cc0.jpg](http://sustainablog.org/wp-content/uploads/2010/03/3444654090_d2456e9cc0.jpg)

## **2. Perennial Grapes:**

Perennial grapes are woody vines. They can grow up to 50 years. They require a deep and red loam. Keep the loam well drained. Always plant them in full sun. They bear fruits in the first growth year. It is important to prune perennial grape plants. Also provide them with a lot of air. It will prevent fungal infections.

Provide them with a fence or trellis to grow on too. It is important to tie these plants so the fruit does not hang on the ground. It can rot there easily. They come in a number of varieties therefore you have the freedom of choosing them according to your climate and other needs.



<http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2014/07/Grapes-537x357.jpg>

### **3. Perennial Kiwi:**

Kiwis are beautiful perennial fruits. They grow best in a neutral or slightly acidic soil. Keep the soil well drained too. They come in hard varieties too so you can choose according to your climate and weather conditions. Hardy perennial kiwi plants bear small size of fruits. It is important to keep the ratio of male and female plants in kiwi bed accurate.

You can plant one male plant with two to four female plants for pollination. Add light amount of fertilizers in early springs. It is vital

not to over fertilize the plants. For propagation, do cuttings in midsummer. Pruning is essential but you must remember to prune male plants after flowering and female plants after harvesting only.



<http://www.waldeneffect.org/20130612highdensityapples.jpg>

#### **4. Perennial Brambles:**

Brambles include blackberries and raspberries. Perennial blackberries and raspberries come in a number of colorful varieties. They come in both thorny and non-thorny versions of plants. They can tolerate poor soil but require full sun and light shade sometimes.

Keep the soil well drained. These plants can easily turn your perennial garden in to a jungle by growing suckers and long canes therefore it is important to prune the tops timely. Perennial blackberries bear fruits in second year of their growth just like the perennial raspberries.



<http://thesnarkygardener.com/2014/04/02/perennial-food-crops-part-2/>

## **5. Perennial Blueberries**

Perennial blueberries require acidic soil. They do not grow well in neutral and alkaline soil beds. Always plant them in full sun. Keep the soil bed organic, well drained and moist.

They bear fruits in third or fourth year of their growth. And they do not produce much fruits after five or six years of their growth. These are probably the most difficult small perennial fruit to grow in your home garden. If you still want to grow the then it is important to keep the soil rich with an acidic fertilizer and moist without being soggy.

Propagating this plant is trickier and can test your patience. There are three varieties of blueberries i.e (I) High bush berries, (II) Rabbit eye berries and (III) Southern high bush berries. High bush is self fruitful

whereas rabbit eye is not therefore plant at least two rabbit eye plants together for pollination.

Similarly southern high bush berries also do well when two or more plants are planted together. Dwarf ones can be planted in containers or pots and thus can be accommodated in tight spaces.



<http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2014/07/Blueberries-537x358.jpg>

Other famous perennial fruits include currants, serviceberries, honeyberries, josta berries, mulberries, lingon berries, elder berries and gooseberries. They all look amazing during their growth years and taste yummy when get harvested and placed on your dinner table.

They require low maintenance but it is vital to select the type of perennial fruit according to the climate and other conditions of your living zone. Once selected wisely, it is the time to enjoy watch them growing up and becoming part of your food.

## Conclusion

Perennial plants are hard, strong and can bear beautiful flowers and fruits of amazing flavors for many years. It is very easy to grow your own perennial garden. You can grow different kinds of perennial vegetables, fruits and herbs in your home garden.

They make the visual landscape amazingly beautiful and give a fresh aroma to the air surrounding it. They also make a tasteful addition to your food table in many forms like teas, chocolates, stews, soups, etc.

Above all, they are easy to maintain and you can grow your perennial garden larger by just dividing and transplanting your perennials on time.

Now, as you have learnt the climate requirements, water needs and growing conditions of your perennials therefore you can easily grow and maintain your own perennial garden and impress your family, friends and social surroundings.

You are soon going to fall in love with your perennials and their amazing health and other benefits.

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# HYDROPONICS

*Beginner's Guide to  
Self-Sufficient Living and  
Growing Vegetables  
Without Soil*



**LIAM BROWN**

# **Hydroponics**

## **Beginner's Guide to Self-Sufficient Living and Growing Vegetables Without Soil**

**By Liam BROWN**

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## **Disclaimer**

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# Introduction

Hydroponics is a method of growing plants without soil by providing them with a constant nutrient solution. It is a subset of hydroculture and it is an important method to grow plants. Terrestrial plants will be grown in a mineral solution with their roots or you can use gravel or perlite as an inert medium.

There are various powerful reasons for commercial growers to use this method, but it is frequently used by domestic gardeners to produce a high yield in a limited space. It is primarily taken as a way to produce crops for the table and it is an important method for the production of ornamental plants.

All plants require light, air, and dissolved nutrients to grow food items. Hydroponic enables you to control a number of nutrients dissolved in water and directly administer the root system because plants really need it.

The root system doesn't need to spread too far to attain nutrients; therefore, the hydroponic crops yield much greater than traditional soil planted yields. There are a variety of variations on the hydroponic theme and this book is designed for your assistance.

You can grow plants in different mediums in your own garden without any trouble. Some methods can be complicated for home gardeners, but you can select a suitable method for you.

This book is designed for your assistance so that you can learn hydroponics gardening and save your time.



# Chapter 1 – BENEFITS AND TYPES OF HYDROPONICS

It is a subset of hydro-culture. It is a method of growing plants in water with mineral nutrient solutions without soil. You can have your own hydroponic garden. Key considerations to keep in mind before starting your own Hydroponic system are:

## 1. **Grow Area:**

It does not need to be as big as it would be otherwise. Each plant, in hydroponic system, requires a 4 inch pot. Keep a distance of an inch or two in between each plant. You will need space for your holding tank. Room overhead will be needed to mount your indoor lighting system.

## 2. **Setups:**

Select a homemade hydroponic system according to your lifestyle and space availability and follow its step by step directions.



<http://www.powerhousehydroponics.com/wp-content/uploads/2014/09/Streamgarden-Home-Hydroponics-Grow-System.jpg>

## **Environmental Benefits of Hydroponic Systems:**

- **Need less Ground:** A hydroponic plant takes 50% less land than traditional plants. It thus leaves more land for other uses, such as planting trees and wildlife reserves.
- **Less Water Usage:** They lose their water only through occasional changes to the feeding solution and evaporation therefore they require less than 10% the amount that traditional plants would, otherwise, require for growing in soil.
- **Less fertilizer required:** Hydroponics take 60% less fertilizers because its growing solution circulates through its roots therefore it absorbs it needs. Thus you never have to lose anything due to crystallizing in the soil.
- **Reduced fossil fuel consumption:** You can grow your foods locally with hydroponics otherwise food has to be shipped to all the places where agriculture is difficult or impossible or cannot be grown due to shorter growing seasons.
- **Less pesticide use:** Hydroponics is grown indoors. It eliminates soil which holds bacteria and many other common insects. Thus you don't need toxic pesticides to protect your hydroponic plants.

### **Scientific Benefits of Hydroponic Systems:**

- **No soil needed:** Hydroponic systems do not require soil for their growth.
- **Any plant can be grown:** Almost any kind of plant can be grown under Hydroponic systems.
- **Lower water consumption:** Hydroponic systems require less water as it gets recycled through the system automatically.

- **Lower nutrition requirements:** As they are grown indoors so they have lower nutrition requirements.
- **Pollution free:** Hydroponic is a fully controlled system, that's why it is totally pollution free.



<http://wiki.nurserylive.com/uploads/default/original/2X/c/cf1704d661b065b2c925f2eea218b0f0ef9308d3.jpg>

- **Healthy stable plants:** Hydroponic systems grow healthy stable plants with higher yields.
- **Pests and diseases:** It is easier to get rid of pests and diseases from plants under Hydroponic systems.
- **Ease and richness of harvesting:** These systems provide ease and richness of harvesting in plants grown under them.
- **Shorter growth cycle:** Hydroponic plants have shorter growth cycles than other traditional plants.

- **Plant's roots don't grow out:** Roots of hydroponic plants do not grow out in search of nutrients.
- **No weeds:** Also they do not grow weeds therefore they are hassle free.



<http://www.minimalisti.com/wp-content/uploads/2015/06/mini-garden-ideas-indoor-hydroponic-system-how-to-grow-indoor-hydroponic-plants.jpg>

### **Personal Benefits of Hydroponic Systems:**

- **No back breaking labor:** Hydroponic systems are now be fully automated and mess free therefore you don't need any back breaking labor in growing them.
- **Wheelchair accessible:** Hydroponic systems are portable. Thus they can be placed anywhere.
- **Modern, compact and trendy systems:** Hydroponic systems are perfect for small spaces and condones.

- **Indoor systems:** You and your plants stay out of the cold because of these indoor Hydroponic systems.
- **In touch with nature:** Hydroponic systems allow you to get back to nature which is vital for good mental health and body growth.
- **WOW factor:** These systems provide you the WOW factor.
- **Impressing people:** They also let you impress people with your gardening talents.



<https://www.3dponics.com/wp-content/uploads/2015/04/hydroponics-grow-herbs-indoors.jpg>

### **Types of Hydroponic Systems:**

There are six major types of Hydroponic systems:

#### **1. Drip System:**

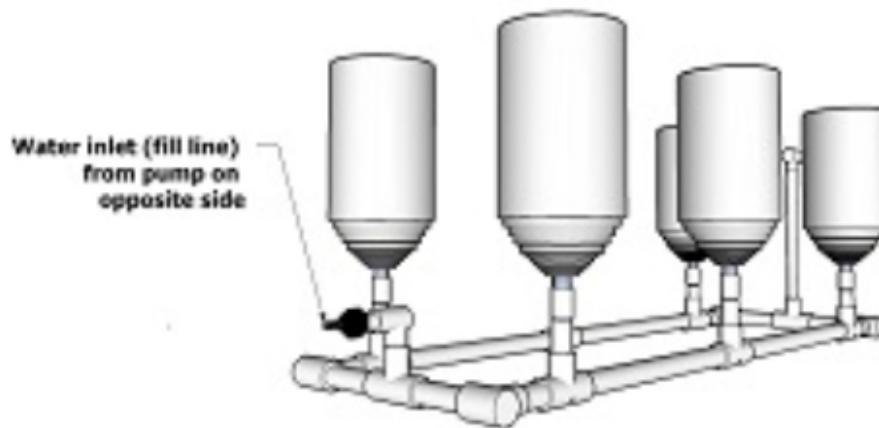
It is the mostly widely used Hydroponic system. It has an easy system and needs only a few components. It works, like its name, by dripping nutrient solution in the roots of the plant to keep them moist.



[http://www.homehydrosystems.com/hydroponic-systems/images\\_systems/drip-small.jpg](http://www.homehydrosystems.com/hydroponic-systems/images_systems/drip-small.jpg)

## 2. Ebb and Flow Hydroponic System:

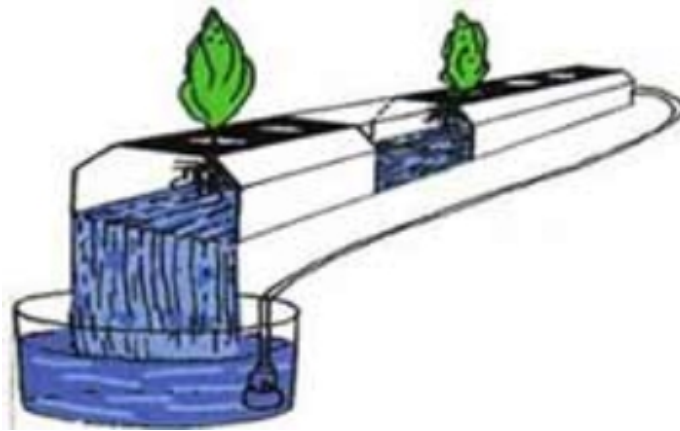
Also Flood and Drain System, is a very popular system. They are easy to build and can be built with any material. Simply plant some containers in series and flood the trays. After some time, you need to drain the trays with the help of a pump.



[http://www.homehydrosystems.com/hydroponic-systems/Flood\\_drain\\_images/FD%20-thumb.jpg](http://www.homehydrosystems.com/hydroponic-systems/Flood_drain_images/FD%20-thumb.jpg)

## 3. Nutrient Film Technique:

N.F.T system is a quite popular Hydroponic system. Nutrient solution is to be pumped up from reservoir to small ones. A thin film carrying this nutrient solution is passed through roots of every plant.



[http://www.homehydrosystems.com/hydroponic-systems/images\\_systems/nft3\\_small.jpg](http://www.homehydrosystems.com/hydroponic-systems/images_systems/nft3_small.jpg)

#### 4. Water Culture System:

It is the simplest among all six Hydroponic systems. The plant is suspended in baskets above the tub of nutrient solution within the reservoir. Their roots get submerged in to the solution 24/7 by getting oxygen through air bubbles and dissolved oxygen in the solution.



<http://www.homehydrosystems.com/hydroponic-systems/Water%20culture%20images/DWC-thumb.jpg>

### 5. Aeroponic System:

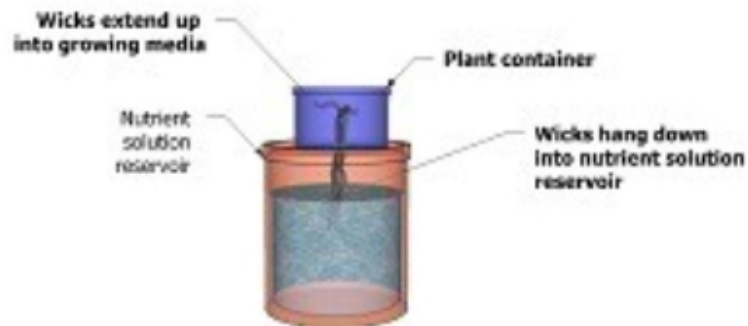
It is the most technical among all six of them. You can build them in any designs according to the space requirement. Plants are suspended and their roots are hanged in the nutrient solution.



<http://eluxemagazine.com/wp-content/uploads/2014/06/string-gardens-2.jpg>

### 6. Wick System:

It is the simplest system. It does not have any moving parts and requires no pump and electricity. It wicks up nutrient solution using the process of capillary action from the reservoir to the roots.



[http://www.homehydrosystems.com/hydroponic-systems/Wick\\_images/Wick%20system2-thumb.jpg](http://www.homehydrosystems.com/hydroponic-systems/Wick_images/Wick%20system2-thumb.jpg)



## **Chapter 2 – ESSENTIAL EQUIPMENTS TO START AQUAPONIC SYSTEM**

Aquaponics system is a symbiotic union of aquatic animals and plants being prepared in a re-circulating habitat. For growing plants or vegetables, various types of aquaponic systems are used.

You can have your own aquaponic system at your home. To set your budget, decide how big you want your aquaponic system to be. Read on to know a little about the basic apparatus and equipment needed for you aquaponics system.

### **Essential Equipments:**

#### **A. Fish Tanks, Tanks Stands and Stand Pipes**

Aquaponics provides the nutrients for the plants or vegetables in its water by the aquatic animals living and growing in the same environment. First step in creating your aquaponics system, decide which fish and fauna you would like to have and how many you need in it.

Then you need a tank to for the fish and fauna to live in and lay down system of stand pipes in the tank. You also need to position your aquaponic tank on a stand or steady area.



<http://aquaponicswork.com/wp-content/uploads/2014/01/aquaponics-fish-tanks-1.jpg>

## **B. Clarifiers**

Aquaponics system needs clarifiers. These are the best way to remove solids and other small rocks from the culture water. Also, they assist with the de-nitrification process and help in removing nitrates and ammonia.

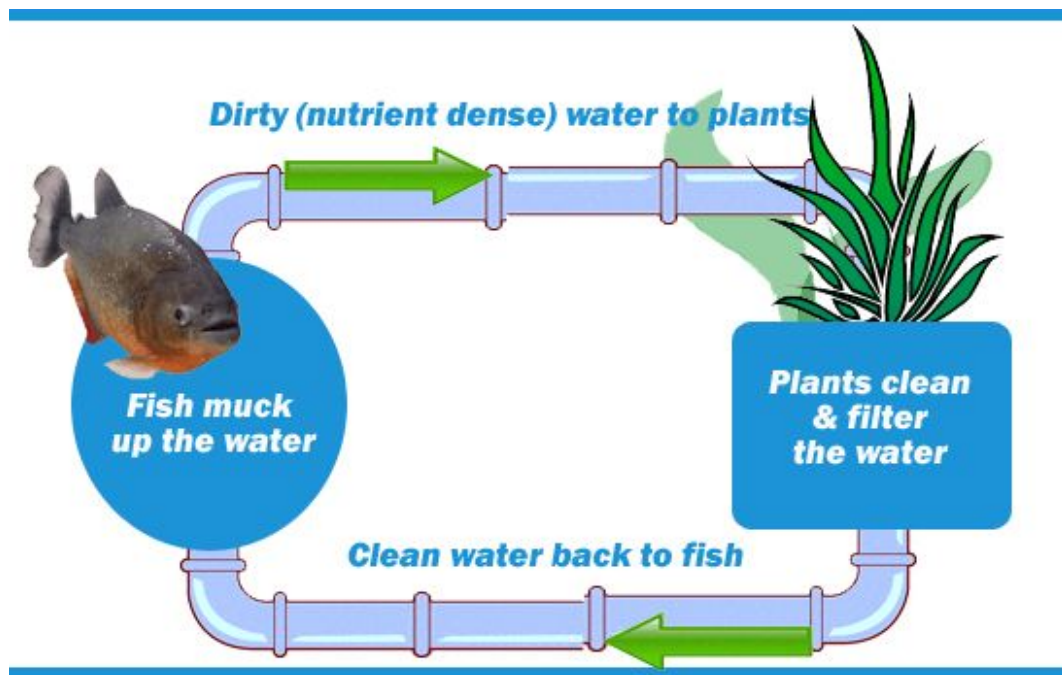
They remove almost all of the water in the recirculation system. They are used to flush the system to remove any solids that get trapped and can be

used many times over with marginal replacements.

### C. Bio-filters

In your aquaponics system, it is essential to keep the water clean and balanced to keep it running efficiently. For controlling water pollution by processing and biologically degrading pollutants, bio-filters are the best option.

Upright bio-filter tanks and horizontal bio-filters as well as a range of other types are available in the market.



[https://s3.amazonaws.com/EventCms\\_FriendlyPastures/images/\\_aquaponics/\\_simple-aquaponics-diagram.png](https://s3.amazonaws.com/EventCms_FriendlyPastures/images/_aquaponics/_simple-aquaponics-diagram.png)

### D. Oxygen Systems

You need an outstanding oxygen distribution system for keeping fish in your aquaponics systems. This is highly intrinsic to the health and growth of the fish that's why it is a must-have feature. It distributes oxygen to an

optimum level which is perfectly suitable for the fish in your aquaponic system.

### **E. Pumps**

Depending on your aquaponic system set-up, you will need a pump or multiple pumps. These pumps serve a very important purpose. They pump the water in and around the aquaponic system.

This allows it to be cleaned as it passes through the bio-filter. It then returns the cleaner and fresher water to the tank for the optimum results.

### **F. Sundries**

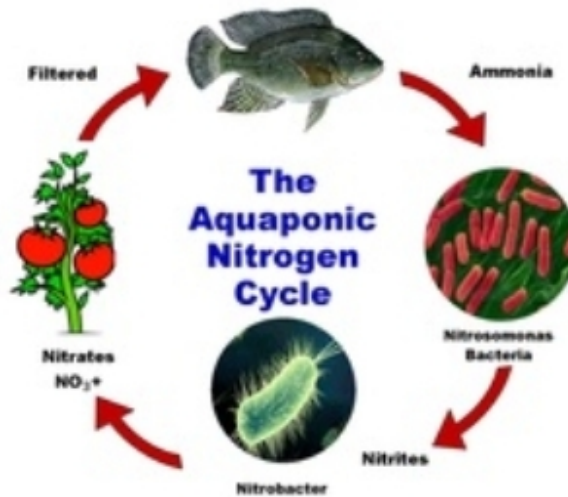
To keep your new aquaponic system up, performing and running as you need it, some other smaller items will be needed. Tubes, pipes and other aquaponic system accessories will be required. The best method to find them is to buy a specialized kit made for such systems.

## **Live Components:**

### **A. Plants**

Many types of plants are suitable for aquaponic systems. Two factors are important in plant selection (I) the maturity and (II) stocking density of the fish. Fish effluent influences the concentration of nutrients and these nutrients are then transported to the plant roots via bacteria.

Green leaf vegetables such as Chinese cabbage, herbs, basil, chives, and watercress are well adapted to aquaponic systems. Plants that are common in salads such as cucumbers, red salad onions, tomatoes, chilies, snow peas, red salad onions and capsicum have some of the greatest success in aquaponics.



<http://www.bornagaingardens.com/uploads/3/3/6/5/3365207/3443757.jpg>

## B. Fish or other aquatic creatures

The most common aquatic animal is the freshwater fish raised using aquaponics. Freshwater prawns and crayfish are also used sometimes. Saltwater fish are best for saltwater aquaponics.

Some species of cold water and warm water fish also adapt very well to these aquaponic systems. Practically tilapia is the most popular edible fish for home and commercial projects of aquaponic systems. Similarly, silver perch, barramundi, catfish and jade perch also adapt well to these systems.

## C. Bacteria

Nitrification is one of the most important functions in an aquaponics system. It is aerobic conversion of ammonia into nitrates. It reduces toxicity of the water for fish. It also allows the nitrate compounds to be removed for nourishment by the plants. As a product of metabolism, fish steadily release ammonia into the water through their excreta and gills. Therefore, water must be filtered constantly since higher concentrations of ammonia can kill fish. Although it can

be absorbed by plants from the water to some degree but nitrates are assimilated more easily. Thus for fish, it efficiently reduces the toxicity of the water. A combined healthy population of Nitrosomonas which is the bacteria that converts ammonia into nitrites and Nitrobacter which is the bacteria that convert nitrites into nitrates can convert ammonia into other nitrogenous compounds beneficial for fish health.

These are all the essential equipments and apparatus along with the live components i.e. fish, plants and bacteria to start your own aquaponic system at home. This system is a complete DIY (do it yourself) project.

It also does not require that much initial investment as well. Therefore, you can do it all by yourself and enjoy the enhanced, beautiful landscape of your indoor garden growing 100% organic vegetables, fruits and herbs for you!








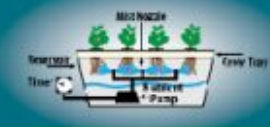
## **Chapter 3 – COMPREHENSIVE GUIDE TO SETUP HYDROPONIC SYSTEM**

Hydroponic systems can easily be set up and installed at home by you. Just grab essential components, set them up accordingly and start enjoying your new hydroponic system without any haste.

Functioning of a hydroponic system may seem complicated to you at first sight, but once you understand it, you will realize how simple its functionality is. There are six types of hydroponic systems:

- 1. Drip System**
- 2. Ebb & Flow System**
- 3. N.F.T. System**
- 4. Water Culture System**
- 5. Aeroponics System**
- 6. Wick System**

Roots of any plant need 3 things, (I) water or moisture (II) oxygen and (III) nutrients. The only difference between these six types of hydroponic systems is simply how they transport these three things to the roots of plants. There are many a ways to make variations in these systems.

	<b>Hydroponic Systems</b>	<b>Pros</b>	<b>Cons</b>
Simple			
<b>Wick Systems:</b>		<ul style="list-style-type: none"> <li>Affordable</li> <li>Low maintenance</li> <li>No nutrient pump</li> </ul>	<ul style="list-style-type: none"> <li>Limited oxygen access</li> <li>Slower growth rate</li> <li>No nutrient recirculation</li> <li>Prone to algae growth</li> </ul>
<b>Deep Water Culture:</b>		<ul style="list-style-type: none"> <li>Cheapest of the active systems</li> <li>Simple set up</li> <li>No nutrient pump</li> <li>Reliable</li> </ul>	<ul style="list-style-type: none"> <li>Risk of root rot if not cleaned regularly</li> <li>Slower growth rate</li> <li>Must top water until roots are long enough to fall into the nutrient solution</li> <li>Must frequently refill reservoir</li> </ul>
<b>Ebb &amp; Flow:</b>		<ul style="list-style-type: none"> <li>Affordable</li> <li>Low maintenance</li> <li>Excess nutrient solution recirculates</li> </ul>	<ul style="list-style-type: none"> <li>Prone to algae growth</li> <li>Technical malfunctions could result in crop loss</li> </ul>
<b>Drip Method:</b>		<ul style="list-style-type: none"> <li>Excess nutrient solution recirculates</li> <li>Sufficient oxygen flow</li> </ul>	<ul style="list-style-type: none"> <li>Prone to clogging</li> <li>Prone to algae growth</li> <li>Requires regular cleaning</li> </ul>
<b>Nutrient Film Technique:</b>		<ul style="list-style-type: none"> <li>Excess nutrient solution recirculates</li> <li>Plentiful oxygen flow</li> <li>Space efficient</li> </ul>	<ul style="list-style-type: none"> <li>Prone to clogging</li> <li>Technical malfunctions could result in crop loss</li> </ul>
<b>Aeroponics:</b>		<ul style="list-style-type: none"> <li>Maximum nutrient absorption</li> <li>Excess nutrient solution recirculates</li> <li>Plentiful oxygen flow</li> <li>Space efficient</li> </ul>	<ul style="list-style-type: none"> <li>Prone to clogging</li> <li>Technical malfunctions could result in crop loss</li> <li>High tech</li> <li>Time intensive</li> <li>Poorly suited to thick organic-based nutrients &amp; additives</li> </ul>
Advanced			

<http://www.richfertilizer.com/wp-content/uploads/2016/05/chart.jpeg>

Read on to get a step by step comprehensive guide to setup your own hydroponic system;

### 1. Install Growing Chambers or Trays:

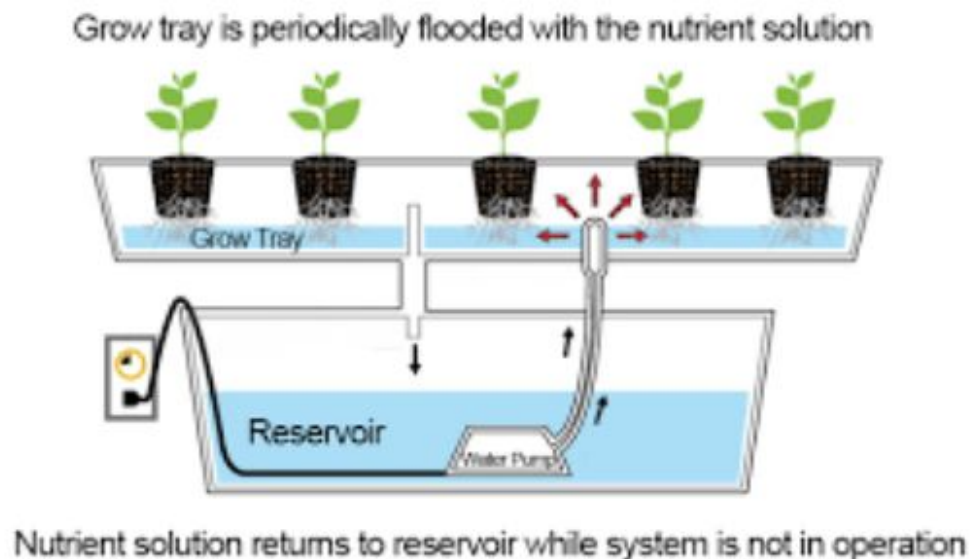
It is that part of your hydroponic system where the roots of your new plants will be growing. Install growing chamber in the root zone container. This area provides access the nutrient solution, protects the roots from heat, light and pests and provides plant support.

Remember to keep the root zone cool and light proof because high temperatures cause heat stress for your plants and prolonged light damages the roots. The shape and size of this growing chamber depend on the type of your hydroponic system and the plant you intend to grow in it.

## 2. Fit the Reservoir:

It is that part of your hydroponic system which is used to hold the nutrient solution of plant nutrients mixed in water. This solution is pumped up to the root zone or growing chamber, in cycles using a timer or continuously without a timer, from the reservoir.

You can also hang down the roots into the reservoir 24/7. It will convert it into a growing chamber as well. A reservoir can be made out of anything that holds water such as plastic containers. It must not leak. Also keep it light proof. One way to do it is to paint, cover, or wrap it.



<http://hydroponiacs.com/wp-content/uploads/2014/04/e-and-flood-system-300x175.jpg>

## 3. Fit the Submersible Pump:

Next, you need a submersible pump. It is used to pump the nutrient solution up to the growing chamber or root zone from the reservoir. They are basically impellers that use an electromagnet to spin them.

They are easily available at hydroponic supply shop in a wide variety of sizes and come with or without a filter.

If a filter has not come with it, you can make it yourself. Simply cut a piece of furnace filter screen to fit. Keep both the pump and filter cleaned regularly.

#### **4. Set the Delivery System:**

It is really quite simple and customizable. Simply use a combination of standard PVC tubing and connectors to make a piping system to let the nutrition solution pass through it. You can also use standard garden irrigation tubing and connectors.

Blue or black vinyl tubing can also be used. You may also want to use sprayers as part of this delivery system however it depends on the type of hydroponic system you're building. These sprayers or drip emitters clog too therefore you must always keep some extra pieces handy.



<http://img.wonderhowto.com/img/78/29/63456437777904/0/low-cost-diy-hydroponics-systems.w654.jpg>

#### **5. Install a Simple Timer:**

You would need one or two simple timers depending on the type of

your hydroponic system. You specifically need to control light using a timer if you are using artificial lighting to grow your plants.

Flood and drain hydroponics, drip hydroponics and aeroponic systems do require a timer to control the timing of the submersible water pump. It is recommendable not to use more expensive digital timers because they will lose all memory and settings on getting unplugged.

#### **6. Attach Air Pump:**

They are optional in all hydroponic systems except for water culture systems. They are relatively inexpensive and carry a lot of benefits. They are found on any shop that sells aquarium supplies. They simply just supply air and oxygen to the roots and water of your system.



<http://hydroponiceconomics.com/blog/wp-content/uploads/2010/07/Sunleaves-Durapump-Air-hydroponic-air-pump.jpg>

#### **7. Add Grow Lights**

They are an optional part of your hydroponic systems. You can also choose to either use sunlight or artificial light instead of them to grow your plants with but it depends where do you are putting or fitting your system.

Always prefer natural sunlight because it is free and it also doesn't require any kind of extra equipment.

Otherwise you can use grow lights. They are specifically designed to emit certain color spectrums to mimic sunlight.

The plants use these wavelengths to conduct their photosynthesis.

Plants conduct photosynthesis to grow and produce fruit and flowers that's why these lights are named as Grow Lights.



## **Chapter 4 – PESTS AND DISEASES CONTROL FOR HYDROPONIC GARDENS**

Pests and disease can cause a very detrimental effect on your plant's health. A plant's disease can be genetic, viral, fungal or bacterial in nature. It is important to employ preventive practices in your hydroponic gardens to help prevent pests and disease.



<http://www.newworldhydroponics.co.uk/images/content/ngs6.jpg>

Hydroponic gardens have need of disease maintenance and good pest controls just like soil based gardens. Catastrophe to do so can create the similar consequences as with traditional gardens such as gangling or deceased plants.

Widely held of hydroponic plant life are vegetables and fruits. It shows that the infected plants will not be value eating.

On the other hand it is trickier but pests and diseases manage to raid the hydroponic gardens because plants are kept wet continuously either continually sprayed under aeroponic systems or engrossed in water that means real hydroponics or be vested in in a everlastingly misty medium such as sand or perlite.

By means of soil-based botanical gardens, fortunately, there are a large number of accessible techniques to accomplish these raiding pests and resultant diseases.



<http://www.jasons-indoor-guide-to-organic-and-hydroponics-gardening.com/images/mites.jpg>

### **Regulating bugs, Pests and Diseases:**

1. However, hydroponic gardeners must exercise extra care when using any pest or disease control method because no soil is there to hold on to the roots. Therefore, it is easier to damage a plant when manipulating its stems and leaves.

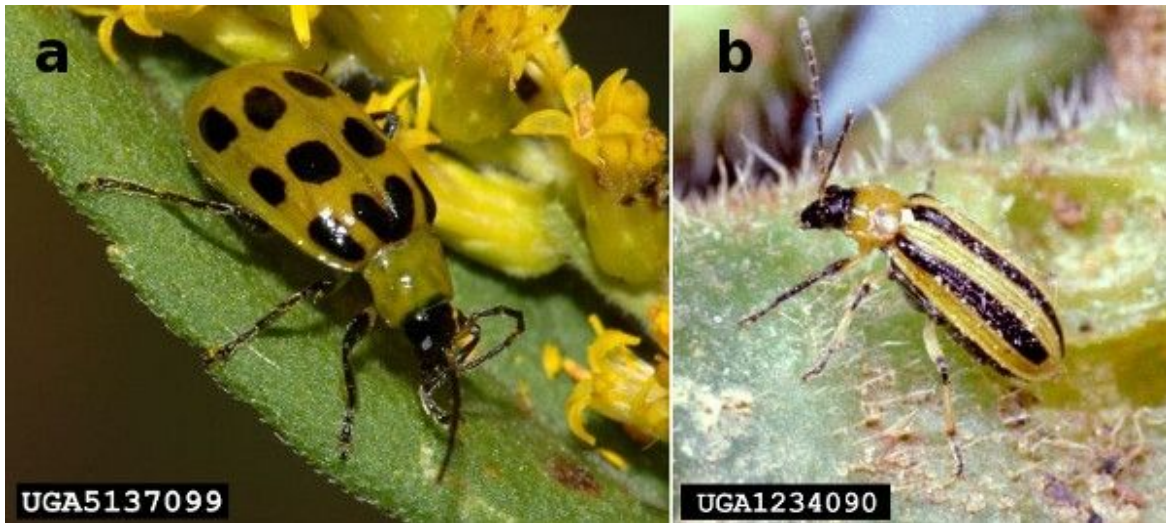
That means that you must take additional care in picking off the pests by hand which is an effective method for low-numbered infestations.

2. One widespread technique to regulate undesirable pests and diseases in your hydroponic gardens is to use beneficial life forms. It can even help you get rid of various kinds of fungi and bacteria. Mites and other attackers and spider, are controlled by thronging them out and releasing toxic compounds on them.
3. Keep the floor clean by keeping all algal biomass off the surface or floor of your growing media. This can be the perfect breeding ground for pests that will ultimately cause diseases to your plants.
4. Various forms of fungicides, pesticides, and other chemicals are available in the market. Pesticidal detergents are being in practice for eras. They provide non-toxic and effective methods to hang onto the pests downcast. Botanicals are amalgams discharged by plants.

They have been pooled to produce a pest regulator method which is easy to apply. They naturally break down from disclosure to water and air. They are very effective because they do not leave any destructive chemicals in arrears.

5. Neem oil alone can regulate over 400 diverse categories of bugs and pests that attack hydroponic gardens commonly. Common pests are often eliminated by just an unpretentious shower of insecticides to the leaves.

The pests engross the sprayed oil. It restricts their capability to breed and thus leads to a lesser population. Numerous viable pesticides work well for additional severe invasions.



[http://eorganic.info/sites/eorganic.info/files/u118/5307\\_cucumber%20beetles.jpg](http://eorganic.info/sites/eorganic.info/files/u118/5307_cucumber%20beetles.jpg)

6. Another harmless and operative means of controlling pests and diseases in hydroponic gardens is pyrethrum. It is a synthetic solution, though, but it in fact is taken out from flowers. Some natural amalgams being produced by plants are hauling out.

They are then castoff in many viable insecticides. The dosage is kept low. Thus the compound, resultantly, is very innocuous if used correctly. Remember to all the time read the sticky tag. Another wide-ranging and common insecticide is Azatrol which provides a tranquil regulator method over maximum pests and bugs of hydroponic gardens.

7. White flies, mites, aphids etc can be problematic in hydroponic botanical gardens as they are in soil-based grounds. Crumbly mildew is a common hydroponic disease. Due to the frequent wetness, pests and bugs found a friendly and favorable environment.

Just make it unfriendly. It is straightforwardly enough. You can use different types of organicides and fungicides for this use. Sulfur-based composites help to get rid of thrips, mealy bugs, white flies, and more.



<http://static1.squarespace.com/static/56bf29e50442623c14ddb17/t/56dd16e7d51cd4224e4c88ae/1457329901484/>

8. Some fungi like Mildew are more communal diseases in these hydroponic gardens than any other gardens due to the presence of constant moisture. Simply keep leaves waterless and the roots misty.

Similarly, any insecticide or organicide spewed on to the hydroponic plants or vegetables must be permitted to arid underneath the grow lights. Hydroponic plants being grown under aeroponic systems have need of a short-term relocation from the interior garden.

However, in many circumstances the use of agrichemicals can be condensed or eradicated by superintending the following checklist:

1. Is the hydroponic system well designed?
2. Are there weeds in the greenhouse which could be hosting insect pests?
3. Are there areas of poor drainage or surface water inside or outside the greenhouse?

4. Has the crop been appropriately upheld?
5. Has unwanted plant material been properly removed and disposed of away from the greenhouse area after pruning or harvesting?
6. Is the greenhouse & greenhouse environment well designed?
7. Is the water source properly treated?
8. Have you chosen a good quality seed which is suitable for your climate?
9. Check if the hydroponic system and reaping equipment being properly sanitized after use or not?



## Chapter 5 – TIPS TO GROW FRUITS AND VEGETABLES IN HYDROPONIC GARDENS

Hydroponic gardens are perfect for smaller areas however their biggest focus is on large scale agriculture to reduce carbon emissions and water-waste. These gardens are a perfect way to help you out with your local farmer's market or to circumvent a grocery store especially if you're a vegetarian. Some famous vegetables and fruits to grow in your hydroponic gardens are;



<https://s-media-cache-ak0.pinimg.com/736x/c8/5d/80/c85d809fe328ad3c6f7caeac2ac2ff98.jpg>

### Famous Vegetables:

- Tomatoes – [Drip hydroponic systems](#) work very well for tomatoes.
- Lettuce – [Nutrient Film Technique \(NFT\) hydroponic system](#) remains best for lettuce.
- Radishes – [Direct water culture \(DWC\)](#) hydroponics system are the best.
- Celery – [Ebb-and-flow system](#) suits it best.
- Cucumbers – Drip irrigation system stays perfect for it.

It is important to know that root vegetables such as potatoes, carrots, etc. are difficult to grow hydroponically but not impossible.



<http://cdn.thecoolist.com/wp-content/uploads/2012/06/Geeky-Gardening-7207371262.jpg>

### **Fruits**

- Watermelon – Ebb-and-flow system works great.
- Cantaloupe (Netted Melons) – Ebb-and-flow systems are the best.
- Strawberries – Nutrient Film Technique system (NFT) works best.
- Blueberries – Nutrient Film Technique system (NFT) work out to be the best option.
- Grapes – work well in a bucket hydroponic system.



[https://www.google.com.pk/search?q=hydroponic+gardening+basic+tips&espv=2&biw=1280&bih=675&tbm=isch&source=lnms&sa=X&ved=0ahUKEwjNkbPGk9PMAhWGuY8KHcnlC3Q\\_Q\\_AUIBygC#imgc=mhLXxKglD6DrUM%3A](https://www.google.com.pk/search?q=hydroponic+gardening+basic+tips&espv=2&biw=1280&bih=675&tbm=isch&source=lnms&sa=X&ved=0ahUKEwjNkbPGk9PMAhWGuY8KHcnlC3Q_Q_AUIBygC#imgc=mhLXxKglD6DrUM%3A)

Many people enjoy growing exotic fruits like kiwi or pineapples. They require much more hard work but the fruits of your labor are worth it! Here are some tips to grow healthy and beautiful vegetables and fruits in your hydroponic gardens;

1. You must know what kind of equipment do you need and why?
2. Pick the type of your hydroponic garden according to the requirements of the vegetables and fruits that you intend to grow.
3. You must know the nutritional requirements of your hydroponic plants.
4. You must know the light requirements of your hydroponic plants. Adjust your system accordingly by selecting between natural sunlight and artificial grow light.
5. Always use a professional three part nutrients product to make nutrient solution for your hydroponic garden.

6. Never use additional nutrient additives at your hydroponic garden for the first time.



<http://cleanersrichmond.com/wp-content/uploads/sites/138/2013/03/ProfessionalCleaning29.jpg>

7. It is always advisable to have a written plan or a feeding schedule before starting growing desired vegetables and fruits in your hydroponic garden.
8. Arrange all necessary equipments and nutrients before starting your hydroponic garden project.
9. Shift your hydroponic garden indoors when the temperature outside is 55°F or less. You can also use an air conditioner instead.
10. Always keep the ballast of your lights in a separate room.
11. It is advisable to check, adjust and maintain your nutrient reservoir solution, if possible, every day or on every alternative day.
12. Strictly minimize light and heat exposure to your nutrient solution.
13. Always keep an extra reservoir of plain water ready for your next nutrient solution change.
14. Completely change your water and nutrients solution every fifteen days.
15. It is recommendable to use a digital or analogue timer to control your hydroponic garden's light and dark periods.

16. Always keep your hydroponics dark period totally dark and uninterrupted.
17. It is vital to clean and sterilize whole of your hydroponic system between crops cycles.
18. Always quarantine new plants for fifteen days before adding them to your hydroponic garden.
19. It is highly recommendable to not visit your hydroponic garden just after visiting another garden or being outdoors for a while.
20. Never allow your pets in your hydroponic garden.



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21. Visit your hydroponic garden after taking a shower and changing your cloths.
22. Make visitors to your hydroponic garden follow the same rules strictly.
23. Always put a filter or screen to cover the air intake and exhaust of your outdoors hydroponic garden.
24. Check your hydroponic gardens for pests and diseases regularly.
25. Maintain pH levels of your hydroponic nutrient solution.
26. Replace the growing bulbs of your hydroponic diseases regularly.

27. Add CO<sub>2</sub> to grow room of your hydroponic garden. It will help your hydroponic plants breath.
28. Improve amount of nutrient uptake by using Humic and Fulvic acids.
29. Hydroponic gardens require good pest and disease maintenance controls just like soil based gardens. If you can't do this properly then this can generate the same results as with traditional gardens such as spindly or dead plants.



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30. Keep the leaves dry and roots wet of your hydroponic plants to avoid mildew and other fungi.
31. Use different kinds of organicides to kill White flies, mites, aphids and other pests.
32. You can also use pyrethrum which is a manmade solution.
33. Neem oil alone can kill over 400 kinds of pests and diseases that invade your hydroponic gardens.
34. Pesticidal soaps have been in practice for centuries

35. Many different types of pesticides, fungicides and other chemicals are available in the market.
36. Keep the floor clean by keeping all algal biomass off the surface or floor of your growing media. This can be the perfect breeding ground for pests that will ultimately cause diseases to your plants.
37. You can also use beneficial life forms. It helps you get rid of certain types of bacteria and fungi.
38. Take additional care in picking off the pests by hand which is an effective method for low-numbered infestations.

Hydroponic gardening is beginner friendly. Anyone can do it and no one needs sweat the process of setting it up. Also, it does not take a lot of investment to begin with. Just buy the essential apparatus and equipment, fix them all together and get started!

## Conclusion

It is a subset of hydro-culture. In this technique plants started growing in water without any use of soil and mineral nutrients.

You can have your own hydroponic garden with a very long list of environmental, scientific and personal benefits such as they need less space, water usage, pesticides, fertilizers, fossil fuel consumption and nutritional requirements. Functioning of a hydroponic system may seem complicated to you at first sight, but once you understand it, you will realize how simple its functionality is.

There are six types of hydroponic systems;

1. Drip System
2. Ebb & Flow System
3. N.F.T. System
4. Water Culture System
5. Aeroponics System
6. Wick System

Roots of any plant need 3 things, (I) water or moisture (II) oxygen and (III) nutrients. The only difference between these six types of hydroponic systems is simply how they transport these three things to the roots of plants.

In this book, I have provided all the necessary details related to controlling diseases caused by pest and how to stop them from invading again into your garden. Some tips on growing vegetables and fruits are also provided. Some of the famous fruits and vegetables are also listed in this book to help you in deciding to grow what type of things in your hydroponic garden.

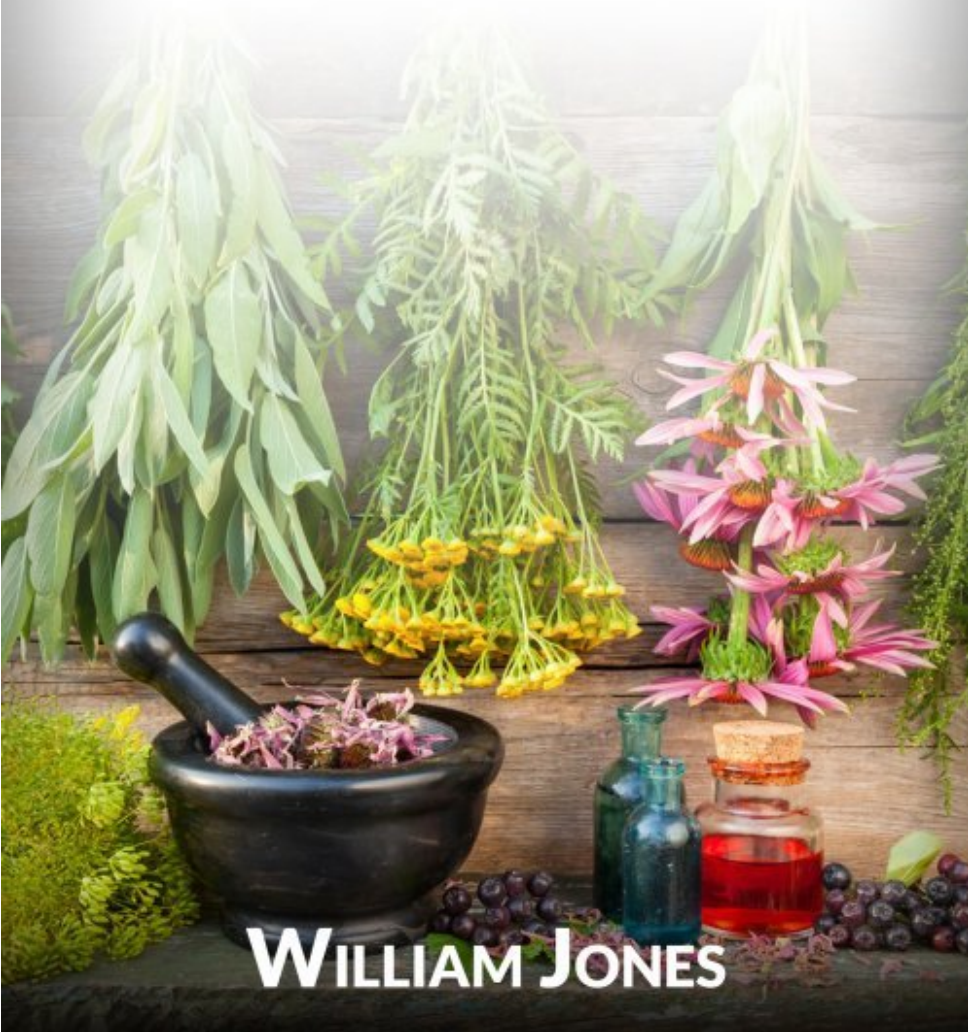
I hope you found this book helpful for growing hydroponic garden of your own. Thanks again for downloading this book, enjoy growing vegetables in your garden.





# HERBS

A BEGINNER'S GUIDE TO DRY YOUR HERBS  
AND CREATE YOUR OWN HERBAL REMEDIES



**WILLIAM JONES**

# **Herbs**

## **A Beginner's Guide to Dry Your Herbs and Create Your Own Herbal Remedies**

by William Jones

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## **Introduction**

The wisdom of nature is most superior to all. The way this planet and the whole universe are organized translates the ultimate intellect and insight of nature. The overall theme of this creation is self-fulfillment.

The arrangement of all the organisms and species is based on the wisdom of utility. So no species on this planet is without any purpose or utility. Even the tiniest of the leaf present on this earth has been created with some purpose, utility and worth. Human race being superior to all can utilize all of these species as and when needed.

Among various creations, the botanical species present on earth connotes a large group of entities which are useful and valuable for human use. The highest possible levels of benefit which can be achieved from these herbs depend on upon the ability of human beings to explore their potentials.

Since earliest times the exploration of these herbs has started and it is still under its way during modern times

. One of the best ways to increase the utility of these herbs is to get them dried so that these can be used for a longer period of time. Various different aspects need to be considered while drying herbs and this book is all about those aspects.



# Chapter 1 – Herb drying – enhancing the utility of herbs at your home



Human beings have been blessed with various different levels of valuable resources. These resources connote the best intellectual power of nature. Even the tiniest of the creations which we see around may have hundreds of utilities hidden within it. Just as the potential of human beings to explore these utilities is increasing, the usefulness of these species is becoming evident.

## Botanical species- full of life



During the earliest periods of human race, the human needs were considered to be confined to the basic need for

food and water. It was the primitive era when human beings were living in a common space with wild animals and other species.

So at that time whatever was present in the nearest vicinity was used for fulfilling various needs of human beings.

Among these species present in the immediate vicinity there are the living beings and various different botanical species.

When botanical species were explored, these were proved to be useful for various different purposes.

Not only food requirements were fulfilled with these plants but these were also used for medicinal and remedial purposes.

This knowledge was unveiled at a time when human beings were not provided with sophisticated tools of exploration.

Just as the technological advancement got its step forward, many new things become obvious about herbs. Although this exploration is still on its way but today hundreds of herbs are known which are useful for human beings for various different purposes for household use as well as for the commercial use.

#### **Herbs- the bests botanical species**

Botanical species is a label usually used for all kinds of plant, roots and their related parts. Herbs also come under the category of botanical species.

They have close semblance with plants but are not found in the form of large gigantic trees, the term herb is also used particularly for those species which can be used by humans for various purposes.

Herbs usually grow in wild environments and need special kind of atmosphere and soil condition.

However, the utility of these herbs is a kind of unlimited topic. Millions of herbs are recognized which are useful for human beings for various different purposes.

### **Dried herbs- the best utilizable form of herbs**

Herbs are not a discovery or invention of the modern world. Even during the primitive era these herbs were known to man for fulfilling a medicinal and nutritional need.

But technology and scientific discovery have helped in finding out even greater benefits of these herbs. With growing knowledge there have been a lot of discoveries to enhance the ultimate advantage of herbs.

One way for increasing the utility of herbs is to use them in dried form. Dried herbs had been in use for centuries and even today we can use them in dried form.



## **Chapter 2 – Techniques of Herb drying**

As far as herb drying is considered it has been present in various different civilizations and cultures.

In ancient times sunlight was the only source of drying the herbs but as technology has passed through various episodes of exploration and development many new approaches has been introduced for the purpose of drying the herbs.

These methods have been introduced after a long way of research so not all of the methods are suitable for all of the herbs. Knowing about these herbs will help you to determine the most suitable method for drying a particular herb.

### **Harvesting before drying:**

The day at which the herb needs to be dried it must be harvested on the same day. All the herbs are appropriate for picking up when the buds of the plant start opening.

All buds may not have the same level of bud opening so all that is needed is to ensure the appropriate time of herb harvesting.

During the harvesting time the herbs possess the highest possible level of aroma and flavor so, it means that it is the phase at which the herbs will have the highest level of oil.

Harvesting of herbs which will be dried is tricky enough. You cannot just simply go into the open for picking up the herbs. The early morning time is the best time for picking up herbs. It must be some time after dew from the herbs has been dried up. But it must not be too late when it gets hot.

During the harvesting and picking period make sure that the herbs and leaves are handled very carefully. Bruising and damaging of leaves can result in a loss of useful ingredients from the herbs. When all often herbs have been picked up then the next step comes to be the rinsing of the herbs.

Use cool and running water to rinse off the herb. The next step is to take off excessive water from the surface of the herbs. You may need to pat dry or shake the leaves.

Take a closer look at the bunch of the herbs so that you can remove all of the leaves which are dirty or damaged enough so much so that they cannot be used for any of the useful purposes.

Also, discard all of the imperfect leave or stems which are present within the bunch of the herbs.

The most common types of methods applied for these herbs involve:

### **1. AIR DRYING**

Air drying is considered to be the most primitive and easiest way of drying the herbs. It is also considered to be the most productive method of during herbs as it results in minimum wastage of herbs.

In this method either the whole stem is put into sunlight or it is just added in the form of dried herbs. In the case of air drying, the room temperature is considered to be the ultimately favorable temperature for all sorts of herbs. In order to air dry, the herbs are washed and left in open air so that all of the excessive water is taken off.

Now the time needed to dry out the water content may vary for different herbs. It will be needed according to the inner content of the plant. If plant stem is added for drying then the time needed will be higher.



For drying the herbs with stem it is better to add five to six stems in one bunch and make up a bundle which can be easily placed in sunlight.

Adding too many stems will leave the bunch un-dried so five to six will be enough. After the initial drying, get hold of some brown paper wraps.

Put the bunch in such a way that the whole bunch remains inside the wrap. Now arrange for some wire or hanging in some appropriate area which is not exposed to rain.

Hang the bags at some place which is warm and dark. The temperature of the area must be around 800 degrees Fahrenheit.

Although not all herbs will take similar time but usually the ones with minimum water content will take around 2 weeks. This time, may get enhanced if the area where paper bags are hung is having a lot of moisture content.

### **Herbs Appropriate for air drying**

Usually, all kinds of low-moisture and sturdy herbs are most appropriate for air-drying. The most common ones include:

Sage  
Thyme  
Summer savory  
Dill

Bay leaves  
Oregano  
Rosemary  
Marjoram

There are some of the high moisture herbs which usually mold if drying is delayed. These are also air dried. This include:

Basil  
Tarragon  
Lemon balm  
Mint  
Chives

## 2. TRAY DRYING



It is the method which is used most commonly for herbs which have shorter stems or for drying herbs individually. As the name indicates this method utilizes various different kinds of trays in which herbs are placed.

For selecting the trays for drying there are many different options available in the market.

Some window screen or drying trays made from 2” x 2” size of lumber and screening will be appropriate for this purpose.

Once the tray is selected it is washed appropriately to make up a hygienic arrangement for drying the herbs. Next step is the placement of spacers over the lower portion of the tray.

If you have to dry up larger quantities of herbs you can also use a multiple number of trays stacked up together. When trays will be stacked up it will result in effective air circulation so that minimum of the air space is allowed.

In terms of an appropriate place for keeping the trays, you need to find some warmer and darker place. Again like air drying you will have to give different time for different herbs so it better to put one kind of herbs in one tray and use another tray for the second category.

If you regularly get into the process of herb drying then it is advisable to get the trays cleaned up quickly after initial use so that you can use these trays over and over again.

### **3. SILICA SAND DRYING**



This method utilized silica for the purpose of drying. The application of silica sand for herbs has been adapted by the drying process of flowers. But most important precaution for utilizing this method is to beware about the kind of herbs which can be dried under this process. You can only use this method for herbs which will be used for external remedies. Herbs used for consumption cannot be dried under silica as it is dangerous for human body.

Silica sand is the material which is also found in medicine jars for keeping away medicine from moisture.

But in the case of medicines, the silica sand is kept in a small pouch so that it cannot get in direct contact with the medicine.

Silica is best known for sucking up all the inner moisture of any material, so it has been extended for the use in the drying of flowers and herbs.



You can get hold of Silica sand from market easily. Silica will extract the moisture out of all the plant tissues and will keep the herbs in their original shapes. In order to put silica sand for herb drying, it is advisable to use appropriate sized container.

There is no such thing as silica sand tray or jar you can use any of the containers which you find appropriate, like old shoe boxes, plastic boxes, baking pans or any of the appropriately sized jar.

One important thing in the case of selecting the jars is to see the amount of herbs.

Herbs must be placed equally inside the container so that no overlapping occurs.

One more thing is to ensure that the plant or herb is completely immersed inside the sand.

As far as the method of silica sand is considered, it is not that much tough. You will only need washed herbs which will be dry in open air for giving away excess moisture content. Now clean away the container which you want to put for use.

Make a medium layer of silica inside the container and put herbs over it. Now make a layer of herbs over sand. Place another layer afterward. Now keep this prepared jar at some warm place.

The time needed for proper drying will vary but most commonly it requires two to three weeks minimum. Each herb may vary in its drying time. When

you see that the herbs have been completely dried up you can take off the herbs and dust away the extra silica sand.

#### **4. DRYING WITH HEAT**



This method involves excessive heat utilized for drying up the herbs. For this purpose, an electric oven or gas heater is used.

Some people also use a microwave oven for drying up the herbs. As excessive heating is applied in this method so it is better to use it for the purpose of quick drying.

But one of the most important concerns in this method is that the excessive heat can easily distort the oil, flavor, color and shape of the herb. So only those herbs which can withstand excessive heat are applied for this method.

In order to use the oven for drying, the herb along with the stem or leaves is placed over the baking sheet or baking pan. The oven must be heated to a moderate temperature, not more than 180 degrees Fahrenheit.

Keep the herbs in the oven for two hours while the door will remain open. As in the case of air drying and other methods of drying the total time needed for

drying up the herbs will vary from one herb to another so knowing the exact time is highly essential.

Too much drying can lessen down the remedial and useful properties of the herbs.



## Chapter 3 – Common herbs best for drying



If you start to read about herbs and its variety of uses you can come along no less than thousand of different herbs.

All these herbs are used for various different purposes.

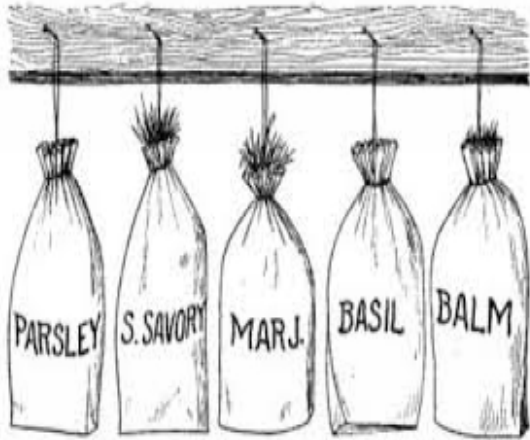
But there are some most common herbs which are considered to be the best from drying because they are used most commonly for various household purposes.

Knowing about these herbs is essential as you can largely use them. Remedial and nutritional purposes are among the most needed reasons for the herb to be used but not all herbs can be used as it is.

Drying is needed. If you go for drying these herbs through some commercial source then it may be time taking and expensive. So drying at home is the most effective way.

Some most useful herbs which can be easily dried at home have been discussed below:

**Anise**



It has small green leaves which are usually harvested whenever the size of the plant gets a little larger to become visible enough like a shrub. Another important visible turn for harvesting this herb is to look for the seeds of the plant. If the seeds have turned brown you can easily harvest them.

The seeds can be washed easily in warm water and then are drained thoroughly. Washed seeds are then dried in open air.

The leaves of this herb are used in various different recipes of soups, salad, meats, beverages and poultry.

On the other hand, the seeds of his herb plant are useful for adding flavor to cakes, cookies, and bread. So this herb has multiple utilities both from the leaves as well as from the seeds.

### **Chervil**

To harvest, this herb the tips of the stems are picked from the top. If the flowers are just ready to bloom it is also a good time to harvest the herb. Tray drying method is usually used for this herb. This herb is used in place of parsley, in various different salad dressing, egg dishes, soups, and cheese soufflés.

### **Balm, Lemon**

Fresh leaves of this herb can be harvested at any time. If you want to harvest dry leaves it is advisable to harvest them before the flowers start to bloom. At this stage, the leaves will be dried enough to be used as a dried herb.

The leaves of this plant are usually hung in bunches in order to dry them in open air. They are also placed in trays for effective drying.



The dried leaf of this plant has a variety of household uses. It is used in various different herbal teas to add flavor. In many different high-end restaurants, it is used for garnishing the iced tea. The dried leaves also add a scrumptious taste to fruit and lettuce salads.

### **Coriander**

The leaves of this herb are mostly used in the fresh form. When the plant for coriander reaches a height of 6 inches it is usually cut with care.

It is most importantly used for garnishing of various different soups and curries.

The seeds of coriander can also be harvested when the plant's heads turn out to be brown.

The seeds of coriander taste and smell like a unique mixture of orange and sage and orange. It is excessively used in poultry dressings, baking, and French salad dressing.

## **Chives**

The Leaves for chives can be harvested at any point in time during the excessive growing season. The leaves are cut very close to the ground.

Not only these leaves can be used in dried form but they also have extensive other uses. You can make up a puree along with water by blending it in the electric blender. The puree can then be frozen in the form of small ice cubes

Chives add an onion like taste to the dips, soups, spreads, salads, casseroles, omelets and many vegetables.

## **Dill**

The leaves of Dill plant are harvested at different points and different times. Seed heads can be harvested whenever the seeds get ripen and take up a light brown color.

The seed heads and leaves are used in the manufacturing of pickles. The dried leaves are used for adding a different taste to salads, soups, cottage cheese, fish dishes, sauces, omelets, vegetable, and casseroles.

The seeds are also applied in some other recipes of pastries, sauerkraut dishes, and sauces. The seeds are also used for adding flavor to vinegar.



**Lavender**

The flower spikes of Lavender plant are cut at a point when florets are completely open and wide. At this point, the fragrance and color of the plant are at its peak.

Dried Lavender is most frequently used in potpourris, sachets, and perfumes.

### **Fennel**

The leaves of Fennel can be harvested for drying and they can also be used as fresh. Fennel seeds are usually harvested at the time when you can see brown heads of the seeds. Once harvested the seeds are shifted to a brown paper bag or wraps.

There is a variety of Fennel known to Florence fennel, which is harvested at the time when bulbs of the plant get large enough. The flavored seeds and leaves of this herb are extensively used for making cheese spreads fish dishes and some other vegetable dishes.

The leaves of Fennels, as well as the stems, are largely used as an alternative to celery. The fennel bulbs are not only cooked alone but these are also used in salads as an ingredient and also as a garnishing.

### **Marjoram, Sweet**

This herb is harvested before flowering by cutting back to 1 inch right above the ground. It is the herb which can be used both in dried or frozen form. The leaves of marjoram are used with meat, vegetable dishes, poultry, green beans, and egg and potato salad.

### **Mints**

It is harvested before the flowering process and is used in all of the forms. It is used as dried as well as fresh. While harvesting it is cut off right at the ground level. Another cutting in the second session can be harvested in the later episode of harvesting.

The primary utility of Mint is for adding flavor to various different forms of recipes. The leaves of the mint plant are used to add a refreshing taste in various kinds of beverages and teas. It is also an ingredient for making the mint jellies. The lamb recipes usually use mint leaves in order to make the taste refreshing.

### **Oregano**

It is harvested and dried before the process of flowering occurs. Oregano puts up an extremely sharper flavor as compared to Sweet Marjoram.

Oregano is the most common household herb which is used for seasoning different spaghetti sauces as well as the tomato dishes. The flowers for oregano are also used as decorative arrangements.



## **Chapter 4 – Herbal remedies with your own dried herbs**

### **Herbal oil Remedies:**

One of the best recipes to utilize dried herbs is to infuse these herbs with oils in such a way that the best healing properties of herbs can be utilized. These herbs readily contain useful fats and volatile oils which when utilized for oiling can yield best remedies.



### **Volatile oils in herbs:**

The plant and botanical species which have volatile oils are readily used in various aromatherapy purposes.

However, these are also used in different salad recipes. The most common forms of herbs which are usually dried for oil making at home include the following:

Lavender  
Rosemary  
Thyme

Sage  
Peppermint  
Chamomile  
Rose  
Yarrow  
Juniper  
Pine

### **Base oils:**

While carrying out the process of infusion various different types of infusion oils are used as base oils. The base oil actually serves as a medium for mixing the herbs and its volatile oil.

Olive oil best for the leafy herbs  
Sunflower  
Sweet almond  
Jojoba  
Apricot oil (best for salves and creams)

### **Infusing the herbs to make oils:**

While picking up the plant matter for drying, one most important issue is to pick up the clean plant material. It is highly important because the herbs will not be washed at any stage of the process.

When picked up for making the oil it must be dry as far as possible. If you see any kind of dust over the herbs, use a brush with highly soft bristle to shake the dust off from the plant.

If a herb is leaf bases like plantain or comfrey, then it is preferable to let the leaves wilt overnight to lessen the excessive water content. However if the herbs are flower based then it is much better to use in the fresh form.

After drying up the herbs chop the leafy herbs very delicately and finely. Take a sterilized jar and fill it with finely chopped herbs.

Cutting off the herbs to fine pieces is highly recommended because it exposes greater quantity of oil present in the herb. Greater quantities of oil allow better infusion.

In the case of dried herbs cutting is especially needed as oil will pass through these cuts but if you will use fresh flower based herbs then you can also go for filling the jar with flowers as it is.

While filling the base oil into the jar makes sure that is filled almost to the rim because if some air gap is left it can enhance the process of oxidation and will result in spoilage.

Thoroughly mix the contents of the jar with the help of a wooden chopstick. Keep stirring till all of the air bubbles have detached and then put a lid on.

After the mixing process is completed put the jar for further infusion in direct sunlight or in your window where sunlight stays for at least 12 hours.

You will need to stir the content of the jar every day for at least 10 days. After these days, you can keep the jar simply in sunlight for infusion. The Proper infusion will need at least six weeks or more.

Some oils such as Calendula are used to double infuse the herbs so with these kinds of oils you will need just 3 weeks for infusion.

Strain out this jar liquid and refill the glass jar with more fresh herbs. Strain the herbs using a sieve, which is covered with a jelly bag or cheesecloth. In the case of fresh herbs used, it is preferable to let the herb stand for almost ten days and then check for water content.

Look up in the bottom of the jar to see the settlement of liquid at the bottom. In the case of presence of water, you will need to transfer the oil to another jar for transferring the water content to some other jar and shifting the oil back to the original container. If so pour off the oil and discard the water.

Transfer the incompletely infused oil on top of fresh herbs and keep repeating the process after every week. In the beginning, make sure to label the jars with name and the date so that you can remember the particular date for infusion. Also, write the best before date over the jar.

## **Making of Herbal Vinegar:**

In order to make flavored vinegar you can carry out the process of infusion along with vinegar. The most preferred choice for infusion is to apply organic vinegar in apple cider but if not readily available you can also apply red or white vinegar.

Take freshly cleaned and sterilized glass bottle and place herbs of your choice in that jar. It is better to ensure that all the herbs have been completely dried. Make a Seal for the jar or the bottle. Be careful in case of a mason jar.

Never use a metal lid plate in case of any vinegar content because vinegar is actually acetic acid and it can come into a reaction with metal and can wear away the lid through oxidation.

Now place the jar in some cool area with light. It will need around 5 weeks; although the flavor is added even after 2 weeks. The longer the jar will be kept for infusion, the stronger will be the taste. Label the jars and always write the best before date.

## **Making of Herbal Tinctures:**

Tinctures are basically herbal extracts but in concentrated form. These concentrated solutions are made by using chopped herbs and alcohol. This method is used for woody or fibrous herbs and from plants obtained through resins and roots.

This method has been applied long since many years to ensure that the usable materials of the plant are roots and resins. Since this method ensures that the herbs and their nutrients can be preserved for a long time, it is often mentioned in herbal books and remedies as a preferred way of using herbs.

## **Conclusion**

This planet is full of a variety of different creations, including a unlimited number of living things. All these creations have been programmed and arranged according to the needs of human beings.

It is because human race connotes the most superior and most privileged creature among rest of the creations. So as far as the utility is concerned every space has something to present for the well-being of human race.

It can be various different animals as well as different botanical species.

The ultimate utility of these creations rests with the capability of humans to explore the potentials found in every kind of creation.

Just as the human civilization started extending its roots, various human needs were fulfilled through the surrounding.

There was not any kind of extended urbanized settings so humans used to live in areas full of plants and herbs. It was the time when food and nourishment needs were considered to be the only human needs.

Then gradually mankind started working towards organized settings and started to explore each and everything present in the surrounding. When plants and botanical species were focused, they came out to highly valuable in terms of their utility.

Since that time, herbs come out to be extremely valuable and precious entities for human use, regardless of various technological solutions. This book explains just a portion of that worth.

Dried herbs increase the shelf life so that they can be used for the household for a greater period of time. When drying is carried out carefully then you can easily use the herbs as you want.



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# DIY PICKLING

*The Ultimate Pickler Guide To Easy,  
Fresh And Quick Pickle Recipes*



***Jennifer Morris***

# **DIY Pickling**

## The Ultimate Pickler Guide To Easy, Fresh And Quick Pickle Recipes

by Jennifer Morris

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## Introduction

Back in the day, I mean really far back in the day, before refrigeration, pickling was a way to keep items from the harvest for use during the harsh winters. Pickling began 4000 years ago, the first food pickled was cucumbers from India. Today we pickle a wide array of foods from meat to fruit. There are several types of pickling and each type has its advantages.

Pickled foods are a great gift idea, one that took time to make, from seedling to pickle jar, it is a gift full of thoughtfulness. It is also a delicacy loved by many, it is used in many chefs created dishes, and enjoyed straight from the jar!

The huge number of food items that can be pickled makes this skill one that will keep you busy and good fed.

The word pickle is derived from the Dutch word *Pekel*; *Pekel* means brine. The word may be Dutch but pickling is enjoyed around the world in almost all cultures. The word may have derived from the Dutch because they were a largely sea faring culture; pickled items are great for long sea voyages.

Pickling is found in cultures around the world because it is an excellent form of preserving food items for when times are lean.

There are many South Asian pickling foods. Fruits such as mango, tamarind and Indian gooseberry, lemons and limes, and veggies such as carrots and cauliflower are pickled in salt, spices, and vegetable oil and left to marinade in

a moistures environment. The addition of vegetable oil gives the food a distinct flavor that cuts the vinegar and dampens the tartness.

Eastern Europe has pickling traditions that include, cucumbers, peppers, tomatoes, carrots, beetroot, and onions. These pickled foods are popular lunch foods in Hungary, a Hungarian favorite is pickled plums stuffed with garlic. Hungarian households also have a specific type of pickling, bread, cucumbers, spices, and herbs are fermented in a jar left in direct sunlight.

The resulting cucumbers have a unique flavor and the liquid is carbonated by the yeast from the bread; this carbonated liquid is then used as a type of spritzer.

As you become acquainted with pickling you may want to find recipes for stuffed food.

Plums stuffed with garlic is only one type of stuffed pickled food. There are recipes for stuffed mushroom, stuffed artichoke, and a multitude of other awesome flavors.

Pickled eggs and onions are popular in Britain. Pickled walnuts and gerkins are also very popular lunch items in Britain. Other popular pickled items in the UK include, mango, muscles, olives, and red cabbage. These pickled items give British dishes a unique flair all their own.

The different types of pickled food made around the world are the result of preservation gone wild! All countries have their own unique pickled foods and these foods are no longer used to survive through the long winter, they are used for taste and taste alone. Once you are familiar with the recipes in this book, try a few from around the world and get a taste of foreign pickling flavors.

In America today, pickling is gaining in popularity with those who are living “ green ” and those who want to be prepared for any emergency or disaster. Pickling is also a big favorite at fairs and organic food stores.

Pickling is making a huge comeback and everyone is enjoying pickling from foodies to famous chefs.



# Chapter 1 – What is Pickling?

Pickling is the process of preserving food through the use of anaerobic fermentation in brine or vinegar; sounds yummy right! Many foods can be pickled, the food “ pickle ” is a pickled cucumber. Regardless of the food pickled, the lifespan of the food is increased and can be kept for months, but the main reason for pickling nowadays is taste; we like the taste of pickled food!

Before the advent of refrigeration, salting and smoking food were the only way to preserve it for later consumption. Pickling came about as a way to preserve harvests for consumption over the long winter months, and as a food source for those who were at sea for months at a time.

Before pickling, explorers had to rely on food they could hunt or gather as they went along, and those who were at sea relied on dried foods like jerky.

Pickling uses brine to preserve the food. Brine is a mixture of canning or pickling salt, seasoning, and herbs. The brine preserves in the same way that salt preserves meat. The brine penetrates the food and soaks it through and through, and the sealed lid keeps out bacteria; now the food can last for months.

If you have a vegetable garden, and grow fruits, pickling is a great way to enjoy your harvest well into the winter. It is also a great way to add interesting, zesty flavor to your meals. Many chefs use pickled fruits and vegetables in their dishes, the taste is distinct and very palatable.

So, pickling is a way to flavor fruits and veggies, and keep them for later use. There are different ways to produce pickled items, regardless of which way you decide to pickle, the resulting food will have a salty, zesty taste. Some forms of pickling actually produce vitamin b and probiotic properties.

Which pickling produces probiotics and vitamin b? Pickling by fermenting in brine produces probiotic microbes, pickling in vinegar does not. Meat and eggs can also be pickled, ever heard of pickled pig ' s feet? Yup, people love them and they are the result of pickling.

The United States, \*National Center for Home Food Preservation provides a caution to anyone who wants to pickle their own foods:

\* “ *Caution: The level of acidity in a pickled product is as important to its safety as it is to taste and texture.*

- *Do not alter vinegar, food, or water proportions in a recipe or use a vinegar with unknown acidity.*
- *Use only recipes with tested proportions of ingredients.*
- *There must be a minimum, uniform level of acid throughout the mixed product to prevent the growth of botulinum bacteria. ”*

So it seems that pickling should be done according to the recipe, the proportions are important for keeping bacteria from forming. Regular dill pickles are fermented and cured under refrigeration for 3 weeks and the same is true for sauerkraut.

Refrigerator dills are fermented for only a week. Even though there are different ways to ferment and pickle, always follow the instructions in the

recipe.

Basically there are two types of pickling. Quick pickling or fermenting and Canned pickling. Canned pickling is the one that lasts a long time. Quick pickling is basically the same as marinating. Both types of pickling are useful and this book has recipes for both types.

Chapter 3 covers the basic items you will need for pickling. It is important to get the right products for the job and pickling supplies are not going to break the bank. Soon you will be pickling your own wonderful food items and family and friends will be knocking on your door for some of that homemade goodness.



## **Chapter 2 – Foods to Pickle and Uses for Pickled Foods**

The best foods to pickle are ... just about anything! Mushrooms are a great item for pickling, the process adds flavor and zest. In this chapter, we will take a look at the different food items that taste great pickled, and learn different ways to enjoy them.

*Pickled watermelon rinds* create a sweet and savory condiment that tastes great on pork. If you decide to pickle some watermelon rinds, the resulting condiment is a wonderful addition to grilled pork and grilled chicken. Marinate pork or chicken in the liquid or just dribble some on after the food is grilled; either way your grilled pork and chicken will taste great.

*Pickled pears* are a great snack all by themselves, but they also taste awesome in an arugula salad.

*Pickled figs* taste great with any grilled dish; the grilled smoky flavor combined with the sweet taste of pickled figs is a popular summer dish.

*Pickled pineapples* may not sound tasty but they are more than tasty they are delicious! They taste great alone, but they are an awesome addition to any Asian stir fry.

*Pickled Mango* makes a wonderful fruit relish when combined with peeled ginger and smoky spices.

*Pickled grapes* infused with cinnamon and black pepper make an amazing sweet snack with a kick.

*Pickled green beans* bring some interesting flavor to your tired salad

*Pickled roasted bell peppers* are fabulous on a sandwich or as an appetizer

*Pickled beets* have always been a staple at picnics, they are delicious little appetizers all on their own

*Pickled chili peppers* add kick to everything from salads to sandwiches

*Pickled celery sticks* are the perfect appetizer and there is no need for ranch dressing, these sticks are already flavored and ready to go

*Pickled corn* is a great side dish for any grilled meal, and pickled corn is the perfect addition to any burrito or taco

*Pickled jalapenos* are excellent on hamburgers, tacos and burritos

Try your favorite pickled veggies as pizza toppers, on sandwiches, alone as appetizers, and in salads. Once you begin pickling your own foods you will

hundreds of uses for them. They make great garnishes for cheese and wine tasting, and some are great as a garnish for mixed drinks.

You can always try using the pickled version of the food you use, for instance, if you like peppers in your salad, try pickled peppers in your salad. If you like blt ' s try using pickled tomato in place of tomato on the blt. Replace regular eggs in your deviled egg recipe with pickled eggs, they add an extra kick.

Pickled foods are great for picnics, they don ' t need any refrigeration and they go well with almost any picnic food. Roasted pickled peppers, jalapeno ' s, celery sticks, and even green beans are great with humus, on hamburgers, or as garnish for potato or macaroni salad. Fresh homemade pickled sauerkraut is awesome on grilled hot dogs!

If you are a first time pickler, and if you purchased this book you probably are, the best foods to start with are small ones with easy recipes. Large foods, or recipes with lots of instructions and ingredients can be tough the first time around.

Get some experience under your belt with food like mushrooms or carrots (cut into fourths). They taste great and they are easy to handle for those who are just starting out.

When you get more experienced with pickling, you can tweak your flavoring or texture. Adding sugar to cucumbers will make a sweet pickle, a little chopped up chili pepper will add extra spice, and mincing the produce will make a relish! You will learn to experiment with spices and textures as you gain confidence with your new skill and soon you will have a personalized taste to your pickled creations.





## Chapter 3 – Materials Needed for Pickling

Pickling is not an expensive hobby but there are some items you will need. The following is a list of supplies needed to begin pickling your own food:

- Canning jars and lids
- A stainless steel canning funnel
- A stainless steel ladle
- A jar lifter with rubber grips for getting a good grip on the glass jar
- Kitchen tongs
- A magnetic lid lifter and a bubble remover
- A canning/cooker pot
- Lots of kitchen towels
- A stainless steel strainer

Canning jars and lids – only use glass canning jars and lids for pickling.

There are different opening sizes, regular and wide mouth, choose the one that is best for the food you are pickling. Always inspect the jars for chips or cracks, and check the lid for any dents or problems with the rubber ring.

Choose the size jar that best fits your use, it is best to choose a size that fits the amount of food you will eat after it is opened to avoid waste. It is best to use new lids, reusing jars is fine if you boil them.

Keep in mind the foods you are going to be pickling. Large foods such as cucumbers and asparagus will need jars tall enough to keep them submerged

in the brine. Small mushroom or jalapeno peppers are small and do not need very tall jars to pickle them in; unless you want to make a large quantity of them.

Stainless steel canning funnel – stainless steel is the best choice for pickling because you can easily sterilize it by boiling and it doesn't harbor bacteria the way plastic items can. The funnel is needed for transferring the ingredients without making a mess or losing it to spillage.

Stainless steel ladle – a ladle is important, it holds and transfers liquids much better than a large spoon.

Jar lifter with rubber grips – a jar lifter is basically a large sturdy set of tongs with rubber grips for removing the glass jars from the hot or boiling water. These tongs are made at an angle to avoid burns that can occur when directly over the water. The rubber grips are needed to get a firm grasp on the jars to avoid dropping them into the water and either burning yourself or breaking the glass.

Kitchen tongs – there are many uses for kitchen tongs while pickling, make sure you get a sturdy pair. They are used to remove or pick up the food to be pickled, and for anything else that requires handling when hot.

Magnetic lid lifter and bubble remover – this is optional, it is used in canning and some people like to use it for pickling too. It has a magnet on one end to

remove hot lids without touching them, and the flat end is used to remove bubbles from the jar after it is sealed.

Canning pot or cooker – this is a large pot, one big enough to put several jars in at once. There are ones you can buy specifically for canning, or if you have a big enough pot at home, you can just use that one. The pot is for sterilizing the jars and lids you are going to use. A canning pot may sometimes come with racks, this makes it easy to layer the jars and keep them from cracking in the process.

Kitchen towels – pickling is a mess affair and the jars and lids are hot, you will find it a must to have an endless supply of kitchen towels!

Stainless steel strainer – sometimes you want the little bits of “whatever” in the pickling juice and sometimes you don’t.

Pickling or canning salt – You must use pickling or canning salt when you are pickling, regular salt does not have the same properties and pickling salt dissolves better in brine.

All of the supplies listed here are all you really need to get started pickling. Canning items are used interchangeably with pickling items because canning “preserves” foods by placing them in air tight containers. The same jars are used for both canning and pickling. Remember, all of your supplies must be sterilized before using them each time you are pickling.

There are kits available that come with all of the supplies you will need. If you are new to pickling, these kits are great because everything is included and it makes it easier knowing you have the right items. If you want to save some cash, many of the items are already in your kitchen! Just sterilize them if you plan to use them for your pickling.

This item is not a must, but it does make your jars look great. Purchase sheets of sticker/label paper for the printer and print out personalized labels for your pickled goods.

You can tell what is in the jar just by looking at the food, but a personalized label and a bit of ribbon can turn your finished pickles into an awesome gift or craft fair item. They perfect for items you may want to sell on the internet too; there are many things you can do with your pickles and labels make them look tastier.



## Chapter 4 – How to Pickle

Now it ' s time to get down to business and start picking those wonderful foods you have harvested ... or purchased. If you have grown your own foods or if you purchase them, it is important to clean them well.

The food must be free of wax, pesticide, soil, insects, and any other stuff that can end up on your food.

This chapter is about pickling itself, everything you need to know to pickle any type of food. Recipes for pickling are in the next chapter. You can use this ‘ How To ’ information to pickle anything you want to, but adding that special something is what recipes are for.

Eventually you will end up creating your own recipes and you will need to keep your own recipe journal.

Before you create your own, or use a recipe, you must first learn how to pickle and this is the basic process. These steps will remain the same no matter what food you are going to pickle; each food will have its own steps, but this guide is always the same.

Sterilize your equipment and work space – Use any anti-bacterial cleaner you want to on the surfaces you will be working on; follow the directions for disinfecting food surfaces and be sure the cleaner you are using is safe around food.

Using your canning/large pot, fill it with the jars you are going to use and fill it with water then bring the water to a rolling boil and keep it boiling for 15 minutes. Turn off the heat and put your tongs and lids in the hot water, let

everything sit for another 10 minutes. Using the sterile tongs, remove the jars and lids.

Food prep – Choose the produce or food items you are going to pickle. Your first choice will probably be pickles; they are the most familiar pickled food. Although you are familiar with pickles, mushrooms or asparagus may be a better choice for your first time. Pickling cucumbers can be a bit tricky, mushrooms and asparagus are easier.

After choosing the item you are going to pickle, wash the item thoroughly, then check the recipe for any special instructions for handling the item you are going to pickle, for instance; you must remove a slice from the blossom end of a cucumber before pickling because it contains enzymes that can alter the pickling solution and cause softening of the resulting pickle.

Prepare the brine – brine is made by boiling water and adding canning salt or pickling salt and white or brown granulated sugars, unless the recipe calls for something else. Other seasoning and herbs are added to make a fusion of flavors, the recipe will tell you what to add and how much.

Add the food and the brine to the jars – this step depends on the recipe. The recipe will tell you how to add the food and brine the correct way. This step is in every recipe, follow your recipe carefully.

Seal the lid – make sure there are no air bubble when sealing your jar, air bubbles allow the growth of bacteria. This is where that magnetic lid lifter and bubble remover tool can come in handy.

Find a cool dark place – pickled items need to be stored in a cool dark place while they “ pickle ” . Your recipe should tell you how long your items need to “ pickle ” , most are ready to eat in a few weeks and pickled foods can last months.

The pickling process can take some time, be patient and follow all directions carefully. Rushing the process can result in a ruined batch of pickles, or worse, a contaminated batch of pickles! Wait the appropriate amount of time in all of the directions and use only recipes from a trusted source.

Once the pickles are ready to eat they may need refrigeration after opening. All recipes are different, these steps cover the conventional way to pickle and preserve food.

Other methods such as fermentation don ’ t require the time before eating and they must be refrigerated immediately after making them. The fermentation method does not preserve food, but it makes it taste great!

It is a good idea to keep your pickling supplies separate from your everyday kitchen items. This will keep your pickling supplies in good shape, eliminating the dings and scratches that come with everyday use.

It is always safer to sterilize items without scratches or dings where bacteria may be able to hide. Keeping these items separate reduces the chance that these items will come in contact with common kitchen bacteria that is present in all kitchens even the cleanest ones.



## Chapter 5 – Pickling Recipes

These recipes are perfect for beginners, nothing too complicated, and everything is top of the line tasty! Some of these are fermentation recipes and others are classic pickling recipes. Each one is clearly labeled, fermentation recipes produce pickled food that must be refrigerated as soon as it is made, and it does not last for months like traditional pickling can.

Read the directions and follow them carefully to avoid spoilage and contamination. These recipes are easy to follow and the directions are clear and concise. Each food can be eaten on its own or added to any number of dishes as a garnish, side dish, or sandwich topping.

The produce used for these recipes are common and easy to find in any supermarket, organic grocery, or road side farmers stand. Remember to wash/scrub, all your produce thoroughly before using them in any recipe. Most supermarket produce has a coating of wax and pesticide so scrub them extra good!

### **Red Tomato Pickles**

Choose tomatoes that are firm enough to skin and hold together. Over ripe tomatoes will be mushy while peeling and end up like a puree instead of whole plump fruit.

*Ingredients for Red Tomato Pickles:*

2 pounds of firm red tomatoes peeled

1 ½ full cups of red wine vinegar

2 tbs of canning/pickling salt

¾ cup filled to the top of granulated sugar

A 2-inch piece of thinly sliced ginger

3 tbs of pickling spices



*Directions for making Red Tomato Pickles:*

Prepare your pickling jars – fill your canning pot/large pot with your pickling jars and cover them with enough water to keep the submerged and bring the water to a boil. Boil 15 minutes then turn off the heat and add your tongs and lids to the water and let stand another 10 minutes. Remove all of you items and place them on a kitchen towel to keep your work surface from getting wet.

Make your brine – in an appropriately sized pot, bring 1 ½ cups of water to a boil and add the canning/pickling salt, ginger, and sugar.

Add 1 tsp of pickling spices to the bottom of each pickling jar you are going to use then pack the jar with your peeled tomatoes. Do not over stuff the jars, leave room so the tomatoes do not mush up.

Slowly pour your brine over the tomatoes and fill the jar to the top, leave about ½ inch of space and add 3 ginger slices.

Fold a towel and place it on the counter then gently tap the jar to loosen the air bubbles that are trapped around the tomatoes, use a wooden utensil to remove any air bubbles that are left by moving the tomatoes around gently. Check the space at the top and add more brine if needed.

Dry the rims and put on the lids and rings, then place them in back in the pot with hot water, boil for 10 minutes.

Store your pickled tomatoes in a cool dark place for at least a week before eating them. Refrigerate after opening.

### **Pickled Roasted Red and Yellow Bell Peppers (this is a fermented recipe)**

#### *Ingredients:*

2 medium red bell peppers and 2 medium yellow bell peppers

2 teaspoons of canola or olive oil

Sea salt and pepper

½ cup of white wine vinegar

½ cup of cider vinegar

½ cup of water

1 garlic clove

2 tablespoons of granulated sugar

2 tablespoons of fresh oregano finely chopped



*Directions for making pickled roasted peppers:*

Preheat your oven to 400 degrees

Cut the peppers in half and remove the seeds. Cut the peppers into slices and arrange them on a baking sheet. Brush the slices with the canola or olive oil and salt and pepper to taste. Put the sheet into the oven and roast for about 20 minutes, or until the slices begin to brown slightly on the edges.

While the peppers are roasting, put the water, vinegars, a teaspoon of sea salt, and garlic into a medium pot and bring to a rolling boil, stir and boil for 1 minute then remove from the heat and let it cool.

Remove the peppers from the oven and let them cool. Peel the skin from them and put them in a bowl, add the water/vinegar mixture and the oregano, then stir so all of the slices are coated then put the peppers and the liquid into a sterilized pickling jar and then put it in the refrigerator. Wait at least 2 days before eating them.

*This recipe is a fermentation/quick recipe, the peppers will not last for months and they must be refrigerated from the time they are pickled until they are finished.*

## **Pickled Mushrooms**

### *Ingredients:*

3 pounds of 1-1 ½ inch mushrooms

2 ½ cups of white vinegar, make sure it is 5% acidity

1 ¾ cups of water

3 tbs of canning or pickling salt

1/3 cup of onion chopped

2 ½ tsp of whole pepper corns

5 cloves of garlic



*Directions for making Pickled Mushrooms:*

Wash your mushrooms in cool water and remove the stems

Sterilize ½ pint size jars and lids according to the directions in chapter 4

In a large pot add the water, vinegar, and canning/pickling salt and boil until the salt is dissolved. Add the mushrooms and heat to a boil then reduce the heat and cook the mushrooms for 10-12 minutes until they are tender.

Using a sterilized slotted spoon, pack the mushrooms into the sterilized jars and leave ½ inch of room at the top. Add 1 tbs of onions, ½ tsp of pepper corn, and 1 clove of garlic to the jars then pour the hot brine over the mushrooms leaving ½ inch of space at the top.

Fold a towel and place it on your work space, tap the filled jars to remove bubbles, use a wooden utensil to remove any leftover bubbles.

Dry the rims and jars then put on the lids and tighten, then put them into the large pot with hot water and boil for 20 minutes.

Place pickled mushrooms in a cool dark place for at least a week before eating, refrigerate after opening.

## **Pickled Asparagus**

### *Ingredients:*

30 spears of asparagus

1/3 cup of sea salt

2 quarts of water

1 2/3 cups of distilled white vinegar

2/3 cup of sugar

1 tsp of canning/pickling salt

1 tsp of mustard seeds

1 ½ tsp of dill seed

1 white onion sliced

½ tsp of dried chili pepper flakes

2 sprigs of fresh dill



*Directions for pickled asparagus spears:*

Sterilize two-pint size jars as described in chapter 4.

Fill a large bowl with cool water and add 1/3 cup of sea salt, stir until the salt is dissolved. Add asparagus cut into 3 inch spears and let stand for 2 hours.

In a medium sauce pan add the water, vinegar, canning/pickling salt, sugar, mustard seed and dill seed, and onion rings. Bring to a rolling boil, and boil for 1 minute.

Place the asparagus tip side up in the hot sterilized jars and leave ½ an inch space at the top. Put 1 dill sprig and ¼ tsp of pepper flakes into the jars, then fill with the brine, leave ¼ inch at the top of the jar.

Dry the rim of the jars and tap on a folded towel to remove any air bubbles, if air bubbles are left after tapping, remove them with a wooden utensil. Seal the jars with the lids and store in a cool dark place for at least a week before eating. Refrigerate unused asparagus after opening.

### **Pickled Eggs (this is a fermented/quick recipe)**

#### *Ingredients:*

12 large eggs

1 1/2 cups of distilled white vinegar

1 1/2 cups water

1 tbs of pickling spice

1 crushed clove of garlic



#### *Directions for making pickled eggs*

Sterilize appropriate sized jars using the method in chapter 4

Hard boil the 12 eggs let them cool and peel them

In a medium saucepan, combine the water, vinegar, and pickling spice. Bring to a rolling boil then add the crushed garlic and bay leaf, now remove from the heat.

Place the eggs in the hot jars and fill the jars with the brine mixture. Dry the rims and seal with the sterilized lids. Refrigerate for 10 days before eating, refrigerate any leftover eggs.

*This is a fermented/quick recipe; the eggs must be kept refrigerated from the time they are done till they are finished.*

### **Pickled Summer Fruit (this is a fermented/quick recipe)**

*Ingredients:*

1 thinly sliced Bartlett pear

1 red plum with the seed removed and cut in four pieces

1/2 of a thinly sliced lemon

1 tbs of slivered fresh ginger

1 cup of water

1 cup of sugar

1 cup of rice wine vinegar

1 fresh mint sprig



*Directions for making pickled summer fruit:*

Sterilize the appropriate sized jars as explained in chapter 4

In a medium sauce pan add water, sugar, and the vinegar. Bring the liquid to a rolling boil then lower the heat and simmer until the sugar dissolves.

Place the thinly sliced pears, 4 pieces of plum, and the thinly sliced lemon into the sterilized jars then add a mint sprig. Slowly add the hot pickling liquid and fill the jar  $\frac{1}{2}$  inch from the top.

Refrigerate the pickles for at least a week before eating.

*This is a fermented/quick recipe, keep the pickles refrigerated from beginning until they are finished.*

### **Pickled Cherries (this is a fermentation/quick recipe)**

*Ingredients:*

3 cups of cherries with the pits removed

$\frac{3}{4}$  cup of white vinegar

$\frac{1}{4}$  cup of sugar

4 crushed cardamom pods

1 tsp of peppercorns

1 tsp of whole coriander

$\frac{1}{4}$  tsp of dried chili flakes



Sterilize a jars as explained in chapter 4

Combine the liquid and spices/sugar/herbs in a sauce pan and heat and stir until the sugar is dissolved.

Pack the cherries in the jars and pour the liquid over them, fill the jars leaving ½ inch at the top.

Dry the rim and seal with the lids, keep in refrigerator for 24 hours before eating. Keep the cherries in the refrigerator until they are eaten, they last up to a week.

## **Conclusion**

Pickling is an old fashioned food preservation technique that is making a comeback. Now you have the skills to create your own pickled fruits, veggies, and eggs. It is time to experiment on your own and create some awesome pickles full of the spices and flavors you like. Just follow the directions in chapter 4 to sterilize your supplies and the rest is up to you.

The skill that you have learned and the delicious recipes you have made are perfect for any dish that needs a little pick me up. Try the fruits on toasted bread or in a salad, they are great as snacks by themselves too.

If you are looking for an awesome summer salad, toss some of your pickled veggies on top then add your favorite dressing. The ideas for enjoying your pickled food are endless and so are the recipes for creating pickled delights!





# *Foraging*

**A Beginner's Guide for Foragers:  
Wilderness Survival Skills,  
Self-Sufficient Living and Foraging Wild Edible Plants**

**Andrew ROBINSON**

# FORAGING

## A Beginner's Guide for Foragers: Wilderness Survival Skills, Self- Sufficient Living and Foraging Wild Edible Plants

by Andrew ROBINSON

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## Introduction

This book is your guide to foraging if you are interested in becoming a forager. This book contains a lot of interesting stuff about foraging. I have shared some edible herbs and plants with pictures, where you could find them, which parts to eat and what benefits they have.

I have also guided the readers in this book about different tools that they should take with them when they go for foraging. Foraging is not a game that you can play.

You have to be really professional about it. You cannot just go and dig up a whole plant with your hand. You have to be able to use different tools to collect different plants.

If you are going in the wilderness to forage, you should know some basic skills needed for you to survive in the wilderness. I have shared such skills with you in this book too.

You also have to be really careful while collecting different weeds and herbs because eating something you are not sure about can be fatal for you. There are some tips and tricks and precautions I have shared with my readers.

If you want to be a forager and you don't know where to start, this book is the perfect guide for you to begin your foraging hobby. Good luck!



# Chapter 1 - Best Herbs and Plants from the Wilderness to Forage

In the first chapter, I would share with you some of the herbs and plants that you could eat if you are stranded in the wilderness and your last stock of food has ended.

Before you read about the best herbs and plants found in the wilderness that you can eat, you must know that you have to be really, really careful while eating any plant or her you find in the wild.

Why? Because there are many plants that have poisonous look-a-likes too. You have to be trained and knowledgeable enough to learn about different kinds of edible herbs and plants that grow in the wilderness.

Let's have a look at some of the best herbs and plants you can forage from the wilderness

1. **Amaranth**



[http://content.artofmanliness.com/uploads//2010/10/Amaranthus\\_retroflexus\\_flower1.jpg](http://content.artofmanliness.com/uploads//2010/10/Amaranthus_retroflexus_flower1.jpg)

Also called: *Amaranthus retroflexus*

This weed is an edible plant that is found on most of the continents in the world but it is native to the Americas. All parts of this weed are edible but you have to be really careful because the leaves have spikes on them. Its leaves are spiky but they are not poisonous.

The leaves contain oxalic acid and if it is grown in nitrate-rich soil, it might contain a large amount of nitrates in it. To remove the oxalic acid and nitrates from the leaves, you have to boil them first. You can eat this weed raw if the conditions are really bad!

## 2. Asparagus



<http://content.artofmanliness.com/uploads/2010/10/asparagus.jpg>

Also called: *Asparagus officinalis*

This is a vegetable and it is mostly found in Europe and some parts of North Africa, West Asia and North America. The Asparagus found in the wilderness has thinner stalks as compared to the Asparagus you find in the grocery stores. This plant is full of vitamin C & B6, potassium and thiamine. You can eat it raw or boil it, whatever you like.

### 3. Burdock



<http://content.artofmanliness.com/uploads/2010/10/burdock.jpg>

Also called: *Arctium lappa*

As shown in the figure above, this plant has big leaves and has flowers with purplish thistle-like heads. This plant is found in parts of the Eastern Hemisphere but with advancement, it can also be found in the Western Hemisphere.

It is a really famous Japanese food. You can eat the leaves and peel the stalks. Boil them or eat them raw, you can do both. But it is

recommended that you boil the leaves before you eat them to remove the bitter taste of the leaves.

You can also peel the roots of the roots and boil them before you eat them.

#### 4. **Cattail**



<http://content.artofmanliness.com/uploads//2010/10/cattails.jpg>

Also called: *Typha*

These plants are also known as *Punks* in North America. In England, they are called, *Bullrush* or *Reedmace*. This plant is usually found near the shores of streams of fresh water. Known as cattails or punks in North America and bullrush and reedmace in England, the *typhagenus* of plants is usually found near the edges of freshwater wetlands.

This plant was a part of the diets of different Native American tribes. Most parts of this plant are edible. You can eat the rootstocks or the rhizomes of Cattails. You can boil them or eat them raw. The best part of this plant is the white part of the stem that is near the bottom.

You can boil it before you eat or you can eat it raw. The leaves can be boiled the same way as spinach. The dog-like spike from the flower can be eaten like a corn. It tastes like corn too.

## 5. Clovers



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Also called: *Trifolium*

Clovers are an edible plant. They can be found in any grassy area. It has trefoil leaflets which is how you identify this plant. Clovers can be eaten raw but if you boil them, they would taste a lot better.

## 6. Chicory



<http://content.artofmanliness.com/uploads/2010/10/chicory.jpg>

Also called: *Cichorium intybus*

Chicory is found in Europe, the Americas and Australia. This plant is bushy and it has really small flowers that are in blue, lavender or white color. The whole plant can be eaten. Boil the leaves or eat them raw.

If you boil the roots, they would taste really good. If you are in a mood of a snack in the middle of nowhere, you can eat the flowers.

## 7. Chickweed



<http://content.artofmanliness.com/uploads/2010/10/chickweed.jpg>

Also called: *Stellaria media*

Chickweed is an herb that is found in the temperate and the arctic zones. The leaves are really large and there are sometimes, white flowers on this plant too.

The flowers grow in the months of May and July when the temperature is high. The leaves are rich in vitamins and minerals. You can boil them or eat them raw.

8. **Curled Dock**



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Also called: *Rumex crispus*

This plant can be found in the Americas, north and South, Europe and Australia. This plant has tall red stalks. They can reach the height of 3 feet. The stalk can be boiled or eaten raw.

You just have to peel the stalk first. The leaves have a really bitter taste and it is advised that you boil the leaves several times in water to remove the bitterness.

## 9. **Kelp**



<http://content.artofmanliness.com/uploads//2010/10/kelp.jpg>

Also called: *Alaria esculenta*

This is a seaweed found in almost all parts of the world. You can eat it raw. If you like, you can use it as an ingredient in your soup too. It is rich in vitamin K, lignans and folate.

## 10. Purslane



[http://content.artofmanliness.com/uploads/2010/10/Portulaca\\_oleracea\\_blossom.jpg](http://content.artofmanliness.com/uploads/2010/10/Portulaca_oleracea_blossom.jpg)

Also called: *Portulaca oleracea*

This weed is not much liked in the United States but few people know that this weed is rich in vitamins and minerals which are very much needed if you are lost in the wilderness. This plant is really small and has fat leaves. The leaves have a very good our taste.

This plant grows from the start of the summer season to the start of the winter season. This plant can be eaten raw and you can boil it too if you like. If you don't enjoy the sour taste, you can boil it before eating.

These were **10 really good plants and herbs** that can be found in the wilderness that you can use for foraging. There are many other such plants and herbs you can find in the wilderness but you have to be a hundred percent sure what you are going to eat before you eat them.



## Chapter 2 - Best Tips and Tricks for Foraging

In the previous chapter, I have shared with you some plants and herbs that you can eat if you find yourself stuck in the wilderness and you have nothing left to eat. This chapter is about some tips that you would need for foraging. I have some tips and tricks for you when you forage.

When you are in the wild and you are in search of food, there are many things that you should take care of. Let's have a look at what you should and what you should not do during foraging,



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### What you should do?

- **You should know what you are going to eat is edible or not.** You cannot guess about a plant or weed if it's poisonous or not. You have to be sure because not being sure can get you killed.

You should take two bags with you when you are on foraging. In one bag, you can collect plants that you are sure about and in the other; you can put the plants you are not so sure about.

- **You should get help from an expert.** Foraging is no game. If you are interested in foraging, you should find yourself a mentor who is an experienced forager. You can ask him about the plants you are not sure about.
- **You should learn about the origins of different plants and herbs.** You cannot just go out there and start looking for a random plant in the wild. It is possible that the plant you are looking for around the coasts, grows only in mountainous regions.
- **You should know about the non-edible poisonous plants that grow with plants or weeds that you can eat.** Such plants are companion plants. The poisonous plants grow with edible plants. This can be really dangerous.

For example, morel mushrooms grow with non-edible plants like May-apples, Ferns or Jack-in-the-pulpits because all of them grow in the similar environment. You have to be sure you don't collect the non-edible plants along with edible ones.
- **You should learn about the look-a-likes of different edible plants.** Plants like Lily-of-the-valley looks just like the Ramps. To differentiate between the two, you should learn that Ramps have a garlic-like pungent smell while Lily-of-the-valley is odorless.
- **You should know the Latin names of different plants too.** There are some poisonous plants that share the same names as some edible plants. So if you don't want to confuse the poisonous ones with the ones that you can eat, you have to know their Latin names of you are foraging.
- **You should grow wild edible plants in your lawn.** Wild plants are diminishing day by day because of over collecting. So if you think you

have the right environment for wild plants at your home, you should grow them at your home.

- **You should get permission for foraging.** If you just start foraging on someone's private property, you would be in trouble. So, to avoid any confrontations and legal problems, you should ask for permission to forage.
- **You should tell your friends or family that you are foraging and where you are foraging.** Like I said before, foraging is not a game and accidents can happen when you forage. So, in order to get help in time, you should let someone know where you are going for foraging and when should they expect you to come back.
- **You should know when the hunting seasons start.** To save yourself from getting hunted (of course, accidentally), make sure you know if you are foraging in the hunting season. If yes, wear a reflecting vest for safety.
- **You should use all of your senses when you forage.** Don't just depend on how a certain edible plant looks like because like I mentioned earlier, there are plants that have poisonous look-a-likes. So you have to use your nose too. Smell the plants, feel the texture to be sure you are collecting the right plant.
- **You should know which part of a plant is safe to eat.** This is very important that you only use the parts of the plants that are edible. Not all plants have all the parts that are edible.
- **You should learn when to eat a certain plant.** There are some plants that can only be eaten in a certain time of the year. Some plants don't remain edible after they have gone to seed.

## What you should not do?

- **You should not collect too much.** Even if you think that a certain plant is abundant in quantity, you should only collect whatever is enough for you to survive.

Keep in mind that you might not be the only Person who is foraging in that area. Do not take more than you need just because there is a lot of something.

- **You should not collect plants that are rare.** There are some plants that are very rare and collecting them may be illegal. So you should be careful while you forage. Don't harvest rare plants.
- **You should not harvest the whole plants if what you need is the leaves only.** Don't dig up the whole plant if you only need the leaves to make soup or whatever you want to make.
- **You should not forage in areas that are toxic.** The areas around the road are usually toxic because of the toxic gases emitted by the cars or pesticides that road crew sprays on the roads.

If you are foraging somewhere near a water source, be sure you don't collect plants that are grown near the streams. They may be toxic because of the chemicals and metallic residue discharges by different industries and factories.

- **You should not collect plants that are unhealthy.** Just like human beings, plants can also be diseased. They can be affected by fungi, pests or different bacteria. So, if a plant seems unhealthy, don't harvest it. Collect the plants that are healthy because they would be more nutritious.

If you take care of the above mentioned tips and tricks when you forage, you would not only find the most nutritious plants and herbs to eat but you would also be safe from any poisonous plants or weeds that come in your way when you are foraging.



## Chapter 3 - Essential Foraging Tools for Wilderness

In this chapter, I would tell you about what tools you should take with you when you are going into the wilderness for foraging. You cannot just get up and run towards the wilderness to start foraging. You have to be well trained and well equipped before you do that.

It's not like you have to go out there and start searching for different plants that you can eat and on finding one, you can pull the whole plant out of the earth. You have to be really careful about foraging.

As I have mentioned in one of the tips in the previous chapter, you should be able to know which part of a plant you need to eat and only harvesting that plant instead of pulling out the whole plant.

To know about the essential tools you need for foraging in the wilderness, you should get trained first. As this book is for beginners, I have to suggest a few things that they should take with you when they go in the wilderness for foraging.



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**The Forager's Toolkit**

First of all, you would need a forager's toolkit. What should that toolkit contain? Let's have a look:

### **Transport Containers:**

This is the most important thing that a forager must have when he is foraging. If you have collected enough plants and herbs to forage, you would need some containers to carry them home.

These containers can be in different shapes and sizes depending on your foraging loot. There are many different plants and herbs that you forage, so depending on their types and the season that you would be foraging in, keep the following containers in your forager's toolkit always,

- **Plastic Bags:**

If you are going to forage plants and herbs in large quantities, plastic shopping bags would prove to be really helpful. You can collect mallow, purslane, wild mustard etc in plastic bags. Also, if you are planning on foraging bigger fruits and nuts like apples, walnuts or lemons, plastic bags can come in handy.

- **Sandwich Bags:**

When you are foraging for tiny things like different kinds of seeds and pine nuts etc, you should have sandwich bags in your toolkit. These bags are good for collecting things that are too little for plastic shopping bags.

- **Freezer Bags:**

If you find larger plants like plantain plants or sumac, you can keep them in freezer bags. They should be in your toolkit when you are foraging for things that are too big for sandwich bags but if you put them in plastic shopping bags, you can lose them through the small holes.

- **Covered Containers:**

Covered containers like Tupperware are also an essential part of your forager's toolkit. They can be used when you are foraging things that would be crushed in different kinds of bags.

The things next to the bags would crush the items in the plastic bag so it is better to use Tupperware or covered containers for such delicate things.

Fruits like grapes, apricots, different kinds of berries etc can be crushed easily. So, instead of putting them in a plastic bag, you should always have a covered container with you.

Tupperware is also good for putting flowers and some thorny foods like milk thistle and prickly pear etc, which can tear the sides of the bags.

### **Picking Aids:**

Like I have mentioned before, you cannot just go on and pull out the whole plant or a young tree by your hand when you are foraging. You have to have some tools with you not only to save the plants and herbs but also to save your hands in case you find something prickly or thorny.

The following picking aids are essential for your forager's toolkit,

- **A pair of scissors:**

You will find all sorts of plants when you go on foraging in the wilderness. Some plants, you will be able to pick easily with just a slight movement of your fingers without any real hard work and there are some plants that you will have to twist once or twice and bend back and forth with your hands until the stem breaks and you get the plant you want.

But you will also find some plants in the wilderness that would not only be difficult to break with your bare hands but also they will resist your efforts to breaking them. In doing so, if you keep pushing and pulling,

the whole plant might get damaged or the whole plant might break when all you want to pick was a fruit.

Also, you cannot pick plants that are prickly and thorny with your bare hands. To avoid trouble in such cases, you should always have a pair of scissors in your forager's toolkit.

You can cut the plant from the lower part of the stem instead of damaging the roots by pulling out the whole plant. This way the plant would be safe and it would keep growing.

Your fingers would also remain unscathed if you are using a pair of scissors to cut plants like stinging nettles.

- **Gardening Gloves:**

Gardening gloves offer a lot of protection to your hand when you are foraging. They keep your hands from getting cut by thorny plants like stinging nettles. It is safe to use gardening gloves anyway when you are foraging.

- **Hard Plastic or Cardboard Mitts:**

Gardening gloves are good for keeping your hands safe from thorns and spikes of different plants but sometimes even gardening gloves cannot give you enough protection. Some thorns would tear through your gardening gloves and cut your hands.

Gardening gloves keep the thorns and spikes embedded in your gloves that would cut your hands the next time you wear them to foraging even if you are not anywhere near a spiky plant.

These spikes don't come out even when you wash the gloves. After you wear your gardening gloves while you handle some plants with thorns, you would have to throw them out. You cannot use them the next time. So it is a good idea if you make your gloves from a material that the thorns cannot cut through.

You can use the plastic soda bottles. Cut one end of the bottle and use the other end of the plastic soda bottle as a "mitt". You can hold the

bottle from outside and cup the prickly pear in the hole that you have cut in the bottle.

You can then squeeze the bottle shut to trap the prickly pear inside. Twist the bottle and you would get the prickly pear without damaging your hands.

You should also keep cardboard in your forager's toolkit to pick up things like prickly pears to milk thistle. Wrap the plant with a cardboard piece and then grab the cardboard to pick the thorny plant.

- **Long Sticks:**

When you are foraging, you would find various fruits on your journey. If you find a fruit on an unreachable branch of a tall tree, what would you do? For this, you should always have a long stick to shake the branches of the tree so that the fruits and nuts can fall down and you can forage them.

- **Mini Hand Trowel:**

You have learnt in this book about some plants whose roots can be eaten too. For this purpose, a mini hand trowel is an essential tool that should always be in your forager's toolkit.

You can dig with your hands too but a mini trowel would get the job done faster than your bare hands and it would be a lot less messy.

For a beginner, the above mentioned forager's tools are good for a start. All the above mentioned tools are essential for foraging.



## Chapter 4 - Wilderness Survival Skills for Self-Sufficient Living

I have said it before and I would say this again, foraging is not a game especially when you are planning to do that in the wilderness. You don't know what kind of situations and circumstances you would have to face when you would be alone in the wilderness.

For this purpose, you have to have some knowledge on how to survive in the wilderness. In this chapter, I would share with my readers, some basic skills to survive in the wilderness.



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The skills that would decide whether you would survive your foraging journey in the wilderness or not, are as follows:

**Attitude** – When you are on a foraging journey in the wilderness, your survival depends on how you behave in different circumstances. If you want to survive in the wild, you should know what is the most important thing for your survival?

- Air
- Shelter

- Water
- Food

This is a list of things in sequence that are essential for your survival in the wilderness.

Now if you are alone in the wilderness, you should also be able to tackle different situations in a systematic way. You cannot panic when the things are tough.

If you encounter a dangerous situation, don't panic! Don't let fear take over. Because that will only get you killed. You have to stop, calm yourself and plan on what you have to do in order to get out of the trouble at hand.

To survive your foraging trip, you have to be resilient and strong. If you are not that, you better forage in your back yard and not in the wilderness.

**Shelter** - You are stranded in the wilderness and you don't know what to do. First, you have to get a shelter for yourself. Because the harsh weather and the open air can affect your health.

And you are not sure how long you will be stuck here until someone in your family or friends notices that you have been gone too long and that you need rescuing.

Get yourself a shelter. You should be able to make a small debris hut for yourself if you are interested in foraging in the wilderness. You can also make a shelter for yourself with logs. If you find a cave, you can take shelter there too.

You have to avoid staying in the sun for too long or sleeping in the open when you are lost. Your body temperature needs to remain stable if you are stuck somewhere on your foraging journey.

**Water-** Your body is mostly made up of water and if you have left on your foraging journey to the wilderness without enough water, you have made the greatest mistake of your life. You could die of dehydration. If you were depending solely on water from streams and lakes, you should know better.

Because you cannot be sure if the water from the streams is drinkable or not. It can be poisonous too. The water from the streams can be contaminated from different chemicals released from different industries. You cannot just drink water from a stream. In case you are lost in the wilderness while you were in search of a certain plant and you are thirsty, find a spring to drink water from. Small water tributaries are a source of pure water too.

But the best choice is to take enough water with you when you plan to go on foraging into the wilderness. You should also keep iodine with you to purify the water you would find, just to be extra cautious.

**Fire -** You should know how to make fire without a lighter or matches. In case you are lost, you should be able to make fire for yourself to keep your body warm in winters. Also, fire would help protect you against different predators and animals that you may encounter if you are stranded in the wilderness alone, especially if it's night. Learn how to make fire using different methods like bow drill or fire plough etc.

**Food –** You are leaving into the wilderness, you have to be sure that you have enough food with you in case of emergencies or in case you are lost. Being a forager, you should be able to identify different sorts of plants and herbs that you could eat when you are hungry and you are unexpectedly lost in the wilderness.

Here your foraging skills will be put to test and your foraging skills will help you get food for you to stay alive.

But, because you are a beginner, you have to be really careful with different herbs and plants.

I have clearly said in the early chapters that there are some herbs and plants that are edible but they also have look-a-likes that are poisonous. You don't want to end up eating the poisonous brother of the edible herb you were looking for.

For this, use all of your senses. Smell the plant, feel its texture and if you are doubtful about a plant, leave it there. Find something else to eat.

If you are lost in the wilderness on your foraging journey, you would need to be skilled enough in the above mentioned areas. If you think you cannot survive any difficult circumstances, don't go foraging in the wilderness.

Because if you are thinking that foraging in the wilderness is an easy job and you can do it if you know all the weeds and plants, you are wrong. You have to be self-sufficient to be able to survive the wilderness. Because you would be on your own there.

And if you are lost, you cannot survive if you are not skilled.

## Conclusion

This book is a complete guide for foragers who are new in this field and want to know where to start foraging and what is foraging about. The tips and tricks given in this book would help you know how to differentiate between different weeds and herbs, for starters.

If you really want to become a professional forager, you should start with this book. The tools I have shared in this book, you should get them before you start foraging. You cannot just get up and go into the wild to start collecting plants.

You should know what you are doing. Plus the wilderness is not like your backyard. You would be facing difficult situations too. To be able to survive in different survival situations, you should be trained enough. Before you get professionally trained, you should read this book to help you begin with foraging.

This book is only for beginners because it has guidance only for foragers who are new to foraging.

# MARIJUANA HORTICULTURE

Your Complete Grow Guide To Big Buds



**WILLIAM JONES**

# **MARIJUANA HORTICULTURE**

## **Your Complete Grow Guide To Big Buds**

*(Growing Marijuana, Medical Marijuana, Cannabis)*

by William Jones

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# Introduction

Marijuana is also famously known as Cannabis and is popular with many other names in different regions. It is basically a preparation of the Cannabis plant which can be utilized as a psychoactive drug or medicine.

I guess you have heard of this plant many times and the various effects it can have on the body, also, not forgetting that it can be used as a treatment for some illnesses.

There may be a lot that information which you may be lack cornering this plant. Before we get started with growing process of marijuana in our home, you need first to comprehend better some concept regarding this plant.

Marijuana is a plant that often grows wile in temperate and tropical areas of the world, although it is possible to grow this plant in any temperature. Also, you need to understand that the main ingredient that is inside this plant is known as the delta-9 tetrahydrocannabinol, or THC.

This is the chemical that makes you feel high when you get one puff of it. Of course, there can be a big range of the potency of the THC based on which cannabis product you choose.

Marijuana is basically made from using the dried leaves and flowers of the cannabis plant. Most of the time, people who use marijuana will do so as an edible product or smoke it.

Apart from Marijuana, other products such as Hashish which is another form of cannabis that is made using the resin of the plant. This option is dried and then pressed into small blocks before the user smokes it. In some cases, this can also be placed into food and eaten, but this is less common.

Also, you can derive another product which is hash oil. This part is made from a thick oil that comes out of the hashish and again it can be smoked as well.

Most people will use this plant in order to experience a sense of relaxation and mild euphoria. This is often known as a high and is something that users enjoy experiencing, especially after a stressful time.

Marijuana can change the mood of the user and even changes the way that they perceive and think about the environment around them. This can be a welcome relief to those who are upset about events in their lives or who feel shy and maybe want to get out of their shell.

There are a number of short term effects that can arise from using this kind of plant.

- 1) You can feel a sense of dryness in your throat, mouth, and eyes
- 2) Also, you can experience loss of coordination
- 3) Increase in food appetite
- 4) You can talk too much

When smoked, Marijuana may give you this change in perception, perhaps an ability to relax a bit or to not be as worried about embarrassment when out with friends. Its' ability to make you feel high when smoked, can draw you

back over and over again, allowing you to see the world differently and to feel so much better.

With all its names, the changes that have occurred over the years, and the many people who have given cannabis a try, it is no wonder that many are interested in growing this plant in their own backyards. It will enlighten you with basics information such as:

- Benefits of Marijuana
- The lifecycle of Marijuana
- The planting procedure
- How to control the pests



# Chapter 1- Reasons To Grow Marijuana

## MEDICAL BENEFITS OF MARIJUANA

Here is a look at some of the health and medical benefits you can get from this amazing plant.

Prevents Alzheimer's - Although you may think that marijuana has negative effects on the chemicals in the brain, according to a study done in 2006 by the Scripps Institute, it was proven that THC which is a chemical in marijuana will work to help prevent the disease because it will block the deposit the disease makes in the brain.

With all of these and many other health benefits it is no wonder why people are using marijuana today.

Also, Marijuana can be used to treat seizures.

## BENEFITS OF GROWING YOUR OWN MARIJUANA

### Growing Marij

uana at home may come with various merits. In fact, there are many benefits to doing this, for instance, when you purchase marijuana from your regular buyer you may not be able to get the right strain that you want on a regular basis. Perhaps you are tired of getting a poor quality strain and your desire is to get a quality strain that will help you get the right high.

In addition, purchasing Marijuana plants from others can often get expensive compared to just growing them on your own.

While it is a personal choice to grow your own marijuana, it can be a really rewarding experience when you learn how to do it right.

Here are some of the best benefits that you can get when you choose to grow your own cannabis.

1) The right strain - sometimes it is hard to get the exact strain that you want. Your seller may not have the right one on hand or you can't find someone who has the one that you would like. Growing your own cannabis plants takes all this drawbacks out of the process. You can grow the exact strain that you want, regardless of where you live or if others are doing so, and get the exact product that you want.

2) Best quality – Do you really get the quality you want? This are some of the questions you should ask yourself. Your supplier may promise a good quality, but you have no idea of testing the plant and knowing how good it is until you have already smoked it. But when you grow your own plants, this is no longer a worry. You can watch it through the whole process and ensure that you are getting a substance that is of the highest quality each and every time.

3) It is relatively cheaper - it is way cheaper to grow your own cannabis compared to buying it from someone else. When you make a purchase from another person, you are stuck with their prices and their quantity regardless of what you can afford or what you want. But when you grow the plants on your own, you simply need to purchase the seeds, perhaps a few lights if growing inside, and the system you would like to grow with.

This can cost a bit when getting started, but the more often you use it, the costs go way down.

4) You can come up with your own strain - as a novice, you will probably just want to start out with one strain that you like quite a bit and get used to the whole process. But over time, cross pollination can be an added bonus of the Marijuana growing process. You can mix together some different strains and get the one that works out best for you. It can produce the high that you want, or even the taste, much better than from what you get from someone else

5) Attain the right quantity you want – By growing your own Marijuana, you will be able to choose how much you would like at once. You won't have to worry about being able to get enough from your dealer or someone else. You can grow the exact amount of plants that works for your needs and even keep a little bit extra on hand. This can ensure that you have it whenever you want.

So when you are ready to start getting all of these fantastic benefits, read through the rest of this guidebook and learn all of the tips and tricks that you need to know to get the best harvest each and every time.



## **Chapter 2- Understanding The Marijuana Lifecycle**

Before you learn how to grow your own marijuana, you will want to know a little more about the marijuana plant. This will help you understand why you need to pick the right strain, or the right gender, why you need to stop pollination, and a lot of other things about the plant.

When undisturbed and allowed to grow in a natural environment, the marijuana seeds germinate in spring and then the plant will grow rapidly. It continues its vegetative growth until fall, and then changes to flowering. Female and male flowers are found on separate plants.

Pollen from male flowers fertilizes the female flowers and seeds are produced. If you remove the male plants from your garden, the female flower remains unfertilized.

The male plant will die when it has released its pollen into the air. If fertilized by the pollen of a male plant, the small ovary behind each female flower will swell up.

Within a few weeks, it will produce mature seeds. When all the flowers of the female plant are fertilized, it ceases to produce any more flowers. All its nutrients and energy go into helping the seeds mature. Once the seeds mature, the female plant will wither away and die.

But you want to use the buds yourself. So, you don't need the male plant because it doesn't provide you with the buds that are used for eating or for

medical or recreational purposes. Secondly, you don't want your male plants to fertilize the flowers of the female plant, unless you want to use the male and female plants to produce seeds for you.

What you want is for the female plant to produce good-quality buds you can harvest, dry, cure, and then use for your purposes. This is why when you grow your plant indoors you just need the female plant and not the male plant.

A male pre-flower will usually reveal its gender before the female and will look like a spade from a deck of playing cards. Female pre-flowers, on the other hand, will be longer and narrower. They also usually have a pistil or white and wispy hair sticking out from the top.

Just look at the shape of the pre-flower and you will be able to identify the male from the female. Don't rush and remove the plant when it is 3 weeks old. Wait, and make sure that it is indeed the male plant and not the female. Once sure, just get rid of the plant before it begins to flower and spill its pollen everywhere, contaminating your female plants.



## STARTING OFF WITH THE RIGHT STRAIN AND SEEDS

There are three main strains of cannabis. These are indica, sativa, and hybrid strains that are a mix of both sativa and indica. Most strains available are a hybrid of some sort, some may be more towards the indica variety, and others more towards the sativa variety.

The indica strain is usually shorter and bushier and gives more of a physical high.

Its leaves are round and fat. On the other hand, the sativa strain grows to be taller and gives you more of a mental high. The indica strain requires lower amounts of light than the sativas. The sativa also takes longer to mature and has thin leaves.

Hybrids are considered to be the best option because they possess the best traits of both the indica and sativa.

There is also a ruderalis strain. Also known as the auto-flowering variety, you need to give it 18 hours of light a day, and the plant will be ready in 3 months. The auto-flowering variety does not depend on its light schedule and does not grow beyond the height of 1-2 feet.

### **How to get seeds, or should you get a plant?**

Another thing to consider is whether you would like to purchase seeds. It is a great option since you can easily buy them online. When looking for seeds, pick hard and dark-colored ones.

These will germinate, unlike the small and white ones, which are often immature and don't germinate. But that doesn't mean the light-colored ones will not germinate at all. Just try them out too.

If you just bought your seeds, keep them in a cool, dry place. A refrigerator is a good place to keep them, but don't freeze them. Keep them away from light. You can keep them safely for five years.

Many people use bagseeds to start growing instantly. You will find these bagseeds in the marijuana you just bought from the store. The only disadvantage of using seeds is that you don't know which one will turn into a male plant and which one into a female plant. You also don't know how they will grow.

If you already have a collection of bagseeds with you, you can start growing instantly. No one knows for sure how the harvest is going to turn out; it may be fantastic or it may just turn out to be nothing like the marijuana they came with.

When you buy your seeds online, you will be able to choose all-female seeds and the right strain for your grow space. Only breeders sell feminized marijuana seeds.

If you are buying seeds from a regular seller, half of your plants may end up as males.

You can also use clones of another plant. A clone is mostly going to grow in the same fashion and produce buds that are similar to the original plant. So, in this way you know exactly what to expect.

The only problem with having a clone plant is that you need to search for someone who is already growing cannabis plants. But if you can get your hands on one, you will be able to save about a month before the plant is ready to harvest.

Seeds, of course, begin from the start so they will take the whole 3 months before they are ready to harvest. The clones also guarantee that the gender of your plant will be female.

It is a better idea to probably order a few seeds online and get started with them.

Once you do have a few plants of your own, you can clone them to make more plants.



## **Chapter 3- Planting Procedure Made Easy**

Once you have decided whether to grow your Marijuana inside your home or outdoors, it is time to get started with growing the plant. This can be a really rewarding experience as long as you get it done right and understand how to pick the right seeds, pick the right soil, and the other details that are necessary when growing this kind of plant.

### **1) Picking Seeds**

The first thing that you will need to do when starting to grow your Marijuana is to pick out the right seeds. You will need to pick out the kind of strain that you would like to go with including auto-flowering, sativa, and indica strains. All of them will have different benefits that you may enjoy and can provide different potencies.

Often it is up to personal preference, and the end result that you would like, that determines which seeds that you will pick.



Source: <https://www.pinterest.com/trendsmarc/cannabis/>

## 2) Where to plant

The next thing to consider is how much room you will have to grow in. This will determine how many seeds you will be able to purchase because you need to have enough room without the plants competing for nutrients.

You should consider the kind of medium that you plan to use with the seeds, such as whether you are using hydroponics or soil, since each of the strains will work differently with these systems.



Also consider how long you have in the season, how much yield you would like to get from the seeds, and whether you have the time commitment for each type before beginning.

### 3) Germination

Once you have picked out your seeds, it is time to get them growing. You will need to germinate the seeds before planting by simply placing them into a glass of distilled water for 24 hours.



After this time has passed, take them out of the water and into a warm and moist paper towel. You should be able to see that the seed has sprouted its taproot and you will be able to place it into the growing medium of your choice.

#### 4) Seedlings

In this stage, you will start to see that the seeds begins to sprout the first leaves. This changes happens around two to four weeks depending on the strain that you choose.

At this point the seed has changed into a seedling. It will need some special care during this time, including at least sixteen hours of light every day, to help it get the proper care and attention while growing. Be careful with the light being too strong at this point since the marijuana plant is delicate and bright lights can cause damage.

#### 5) Vegetative Growth

During the next stage, the Marijuana plant is going to develop quite a bit. You will start to see changes that happen almost daily in terms of the shape and the size of the plant.

You will still need to keep them under a strict regimen of sunlight, preferably up to eighteen hours each day, to help them grow. During this stage, you will be able to add in the brighter lights since the plants can handle it a bit better.

This particular stage is not going to last for long, it can take four to five weeks before the flowering will start, but this can vary based on the strain that you picked out, how long you have the seeds under the lights, and other variables.

It is also during this stage that you can take clones of your plant and then train it in order to get a bigger yield without having to restart with brand new seeds, but this is something you can try out as you get more experience.

#### 6) Male or Female Plants

Depending with the kind of plant you want to have, may it be a male or a female it all depends on you.

You will be able to determine the sex of the plant by using the pre-flowers that will start to develop during the vegetative growth phase. Even at this point, if you see that the seeds are feminized, there are steps that you can take to change the

sex of the plants



For example, if the plant becomes stressed out it can become a hermaphrodite or will grow as a male. You will need to work hard to prevent some of the most common issues with stress on your plants to keep them growing as female including watching the temperature that your plants are growing in and ensuring that the plant is getting the right kind of light.

### 7) Flowering

The flowering stage is the one that you have been waiting for; it is the stage where the plant is finally going to start producing the largest buds which is your main goal. This is the stage where you will be able to reduce some of the light that your plants are using since most of them will simply need twelve hours of light compared to the other stages. If it is indoor gardening, you need to lower the brightness of the bulb to ensure that the plant isn't being damaged. Keep with this regimen until the plants are ready for harvest.



8) Harvesting Always as a novice, it may be difficult to tell when it is time to harvest your plants, but it is one of the most important steps if you

would like to get the most out of these plants. You may need to bring in some helping equipment to make it easier for your eyes to spot the signs for harvesting.

One way to tell that the plants are ready is to check their trichomes. You will need a magnifying glass to look and see if 80 percent of the trichomes are cloudy, five percent are clear, and fifteen percent are amber. While checking, realize that you won't be able to get this right all of the time.

You won't have something telling you this, but if the amounts match to being close to these percentages, the plant is ready to be harvested. Get ready to chop the flowers and get ready to dry and cure them for use.

## 9) Drying and Curing

At this point, you may be ready to take the flowers and just start smoking those buds right away. But this is not the time to start smoking the buds if you want to get the most enjoyment out of your work. You will find that drying and curing your weed will make it more enjoyable compared to just harvesting the buds and then taking them.



To dry the weed, you will need to hang up the buds and keep them there until they start to feel dry to the touch. You don't want to leave them up there too long, just until you feel they are dry to the touch. After this time, you can use the process called burping which is just placing the buds into a glass jar, Mason jars work well for this, and then leave them inside over the next month.

You should open it a few minutes twice a day during this month to allow a bit of air in, but otherwise you can leave alone until you are done with the month.

Once you have gone through the steps above, you will have some of the best Marijuana to enjoy. This is one of the best ways to do it, at home, because you know the exact strain that you have, you can save money from a dealer, and you won't have to worry about running out or a bad mix from someone else. Follow these simple steps and see how easy it can be to work on growing your own Marijuana.

## MERITS OF PLANTING MARIJUANA OUTSIDE THE HOUSE

Planting Marijuana outside the house have a lots of merits compared to indoor planting. It is one of the easiest forms that you can use. Apart from being able to adding in some nutrients to the soil if it's a little bit dry and watering the plants on occasion, outdoor gardening is pretty simple.

It is also easier when it comes to attending to the Marijuana plant. You can tend to the garden when it works out the best for you and as long as the plants are getting the proper care, you will find they produce a good yield.

- 1) Acces to natural sunlight

When Marijuana is planted outside the house, it gets the advantage of getting natural sunlight. While it is possible to purchase some lights that can help mimic the sun, none of them are going to work well as the sunlight do. It provides some extra strength and nutrients to the plants, this aids you to save money for electricity bills which you could have incurred during indoor planting.

When picking out a place to grow these plants, make sure that you are getting enough sunlight. You want to pick out a place that will give at least a few hours of sunlight every day for your plants.

## 2) Availability of Fertile soil

Outdoor gardening of Marijuana plants helps it to access all the natural vitamins and nutrients that come from the soil. There are many places in your yard that have these nutrients just waiting to be used.

Other times, you may have to put in a little bit of work to get the soil to be just right. Simply adding in a little mulch and some other nutrients will enrich the plant with all necessary nutrients it require for proper growth.

## 3) Availability of Rain water

With outdoor planting, you won't have to worry so much about providing the right amount of water to your plants. However, you will still need to check on them every once in a while, but often the rain water will take care of your plants for you.

Rain water often has more of the nutrients that your plants need to do well and you will just need to check up, rather than constantly water.

#### 4) Availability of enough space

When you are able to plant the Marijuana outside, you are giving them more room to grow. You will have any space outside, rather than a small pot inside the home, and often you won't have to worry about transplanting your plants at all because they are fine in the location they are.

The plants will be able to expand their roots and grow strong without having to worry about changing out of pots or other issues.

Picking whether to grow your plants inside or outside can sometimes be up to your personal preferences. Just make sure that you are giving the plants the proper care that they need and you will be amazed at the yield you can get in no time.

### ALL THE NECESSITIES NEEDED TO GROW MARIJUANA

Growing Marijuana is similar to growing other plants in your garden. The plant needs some special care and attention to grow big and strong, but with some dedication and good work, you will be able to see some high yields from your hard work.

Here are a few of the basic tools that you will need to ensure that the Marijuana plants are growing strong and you are getting the results that you want.

#### 1) Water

Water is essential when it comes to plant growing, Marijuana will not grow strong if it doesn't have a good source of water. You should pick out water that is at a neutral pH and if the water doesn't reach this pH, you may need to

alter it a little bit. With the outdoor garden, you may be fine using just the water that comes from your hose as well as rain water.

It is possible to use tap water to take care of your plants when growing them indoors, but test the water first to make sure it reaches the right pH to be healthy for your plants.

During the growing process, your plants will need a lot of water. This water is going to carry a lot of nutrients to the roots and ensures that your marijuana is able to grow healthy and strong. Check on your plants often to see if they need more water to grow strong, but be careful to not put too much water into the ground as this can rot the roots.

## 2) Light

The light source that you choose will make all the difference in how well your Marijuana will grow. If you have chosen to grow this plant outside, the light source is not as important because you have the sun helping you out. But if you are growing these plants inside, you will need to take special precautions to ensure that the plants get the right kind and right amount of light to grow strong.

There are different cycles of lighting that are needed in each stage of your plant growth so consider getting a few different types of lights with different intensities, and even ones that have timers so you ensure the plants are getting just the right amount of light that they need.

## 3) Nutrients

During the growth of Marijuana, you will need to ensure that the plants are getting the right nutrients to stay healthy. Sometimes this is present in the soil that you pick out, but often you need to add in a helping hand to ensure that the plants are going to do just fine. There is no harm in adding in these nutrients, and often it can result in the best yields.

You do need to exercise some care when it comes to picking out the right nutrients for your plants. You should make sure that the three main ingredients, potassium, phosphorous, and nitrogen, are present in the soil when growing marijuana.

You can get a tester to see how the outdoor soil is doing in the area where you would like to grow the plants. If they are missing out on a key nutrient, consider adding in some mulch or mixing in potting soil with these nutrients.

Things get a bit easier when you use your own soil, such as with indoor gardening. This allows you to pick out the exact soil that you would like to use to keep the plants growing strong. You should check the bag of anything that you plan to use with growing and ensure there are high levels of the three nutrients to help your plants grow strong.

## **Chapter 4- Ways To Handle All The Pests While Gardening**

When you are growing your Marijuana plants, you will want to make sure that you are giving them the proper care and attention. While there are many issues to consider, such as making sure the plant is growing properly, you are giving the plant the right amount of water and nutrition, and that the plant is getting enough sun, you also need to be on the watch for pests and bugs who may hinder your plant growth.

No matter what kind of plant you grow, it is possible to see pests and bugs try to take over. Failure to take immediate action, you are going to find that your marijuana plants are starting to fade and it could be too late to give them the help that they need.

Whether you are trying to be proactive and keep the pests and bugs at bay or you are already dealing with these common issues, here are some tips to help out when those pests come and invade your Marijuana.

### **METHODS TO CONTROL THE PESTS**

There are a number of effective methods that you can use for pest control with your Marijuana plants. No matter which one you choose, you need to be on the lookout for pests and start the pest control early for the best results. Some of the methods that you can consider for pest control include:

## 1) Introduction of Predators

Adding in some predators can help to keep those pests away. Options like lacewings, praying mantises, and ladybugs can all be predators to common pests that may affect your plants. You can purchase these commercially and let them free into your garden. You won't have to worry about them taking advantage of your growing plants and they will kill off any of the pests and bugs that have been causing you some issues.

Keep in mind that you need to keep the natural order of things where you are growing. Don't try to introduce new animals to an area they haven't been before.

Try to bring in just one or two types of predators to the area and let them do their job. Adding in too many different types of bugs can cause some attention, cause the predators to fight amongst each other, and can even result in damaging your plant.

## 2) Organic Insecticides

Since you are growing the Marijuana to consume, you need to be really careful about the kinds of insecticides that you are using. While these chemicals can do a great job at keeping away those bugs and pests, if you pick out some of the commercial brands, you may have some issues with adding harmful things into your plants and to your health.

Going with organic ones will prevent some of these issues and they work just as well as other options.

Pyrethrum is a good choice to use because it is organic and is considered to have one of the best strengths when it comes to insecticides. It will also work with many different pests so you can use it on anything that is bothering your garden.

Remember, even when it comes to organic varieties, you may need to add in some water so read the instructions to ensure you are applying correctly.

While the organic insecticides do not contain some of the chemicals that traditional insecticides do, it can make a big difference on the amount of pests in your garden with all natural materials that are safe for your plants while killing off the pests.

If you tried using predators and they are starting to take over your garden as well, your organic insecticides can help out with these as well. Read the ingredients on all of your chosen insecticides to ensure that they have the right chemicals to keep the garden growing strong.

### 3) Homemade Remedies

If you are worried about the pests in your garden and don't want to allow harmful chemicals into the Marijuana plants, you can choose to make some of your own homemade remedies.

These are easy to make and often just include one or two ingredients. These remedies will keep the pests away in the first place, and you won't have to worry about the quality or taste of your Marijuana.

There are a number of options that you can use to help keep this plants safe. One option is to take two tablespoons of soap and dilute it into a gallon of water. Add this into a spray bottle and mist it onto your plants. Try to apply this as evenly as possible to your plant. Let this mixture set for a few minutes and then spray it with some normal water to get the soap off to prevent damage.

Another option that can be really good for keeping beetles away is to make a mixture of garlic while using some alcohol in soapy water can be good for keeping away the slugs and snails. Mint works well with many pests and can keep your plants safe without any harmful side effects.

There are quite a few recipes that you will be able to use on your plants that use a few essential oils and are safe for the plants. Be careful to find the right recipe that will keep your plants healthy without affecting the quality or taste while keeping away all of those nasty pests.

Using some natural remedies, whether you are making these on your own or getting an organic insecticide, compared to purchasing a commercial insecticide, can help to keep these pests away without the harmful chemicals. Try out a few of these options and see how amazing they work for the health of your plant.

#### 4) Companion Planting

This kind of method works well when you plant your Marijuana outside the house. There are some plants that are grown in the wild and can help to repel pests naturally.

If you add in a few of these plants to your Marijuana garden, they will keep the pests away without any extra work on your part. Some of the plants include onions, cabbages, and mints. Any plant that is pretty odorous can help out as well.

These plants can naturally keep away all the pests while also helping to camouflage the growing area you are using for Marijuana. Just remember to plant each of these apart from each other to ensure that the weed and the other plants are not competing for nutrients or water in the garden.

You may also need to make some changes to the nutrient density in your soil if using companion planting to ensure that both types of plants are getting all of the nutrition that they need and don't start dying out.

## **Conclusion**

It is my hope that growing Marijuana in your home is not a big challenge now. Even if you have never gotten started with growing the plant in the past, you will find that growing Marijuana can be pretty easy to execute.

By handling the plant with care, you are going to get the exact strain of Marijuana that you want without having to rely on any alternate sources.

Get started now, you already have the guidelines in your fingertips. When ready to grow this plant, you will find all the information that you need inside this book.

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JAMES MOORE

# *Gardening*

A BEGINNER'S GUIDE TO GROWING PERENNIAL VEGETABLES, HERBS AND FRUITS

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