Mini Gardens:
How to Grow the Essential Plants for Survival with Less Time and Less Land!

by **John White**

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Introduction

So if you're reading this book there are a few things we have to assume. That you're interested in survival if there are hard times (this doesn't have to be End Of The World, could just be hard economic or political times) and that you don't have a lot of time or a lot of land or all of the above.

But this isn't just another gardening book. We're going to tell you how to get super nutrient dense vegetables that are so healthy that they naturally repel insects. This doesn't mean that they repel all insects, but they will do their part if you do yours instead of just doing all the work and letting them be the prima donna.

Nutrient dense vegetables also taste better, are healthier, and even fill you up better which means stretching that dollar just a bit further.

We're going to cover those hard times and this is how we're going to help you with that:

If you are land poor then we have good news: you can feed yourself even if you live in an apartment! It just depends on the percentage of your weekly groceries you are looking to replace (can't promise you can do 100% in an apartment but we'll get crafty!).

If you are time poor then I've got good and bad news. I like to rip it like a band-aid so let's do bad news first. It will require an initial investment of time up front to get things started. Good news is that we've done all the research needed for every region, growing condition, etc. to ensure that you will spend the least amount of time possible out in the garden and more time enjoying the fruits of your initial labors.

If you're just good old-fashioned poor poor then we've got some solutions for you as well. Don't worry, we're getting you taken care of and we've tried to keep this book affordable, yet chock full of good stuff!

If zombies are chasing you and it's THAT kind of hard time, well… not sure what to tell you. How fast can you dig?

So make time for this book. Read it on a train, bus, or hiding in the bathroom from your kids. Share the principles you learn with a friend. Be the revolution in your neighborhood.

What Are the 'Essential' Plants for Survival?

You can probably break it down to about ten plants to give a good range for optimum nutrition in an emergency situation. While still making sure that the average gardener can grow these, let's expand out a bit for good health and variety as well and we'll call it thirteen, but only the ones with a star are your MOST important.

*POTATOES

Vitally important for their starch content alone, these fellas have high amounts of potassium that can help combat the sodium-rich diet of someone who has to eat a lot of boxed food. The vitamin C in these can help to keep scurvy at bay over a long winter, especially when paired with cole crops. Keep the peelings (most of the important nutrients are close to the skin) and cook them down to make a nice thick broth full of vitamins

or use them to feed your livestock. Potatoes and lots of them are a great way to ensure survival when the going gets tough. Forget counting calories to lose weight (which is a fallacy anyway) you'll be counting calories to make sure you've gotten enough for the day if things get really rough and these guys can help! With very little seasoning potatoes can be a complete meal. Curried potatoes and kale, boiled, baked, fried, mashed, etc.

1 Large Potato, baked

Nutrition Facts

Serving Size 1 potato large 299g (299 g)

Amount Per Serving	
Calories 278	Calories from Fat 3
	% Daily Value*
Total Fat 0g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 63g	21%
Dietary Fiber 7g	26%
Sugars 4g	
Protein 7g	

Vitamin A	1%	• Vitamin C	48%
Calcium	4%	• Iron	18%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*KALE

Everyone now knows that this vegetable is worth more in your belly than it is decorating the salad bar at your local restaurant. Kale is often touted now as a 'superfood' and for good reason. Although it's too tough for the digestive tract of a human unless it's lightly steamed, kale can be put in smoothies, salads, side

dishes, or eaten as is with a bit of salt and butter or lemon juice and oil. Kale comes in several varieties such as Curly or Lacinato and is easy to grow if you can keep the caterpillars off of it. This veg will help you get enough vitamins A, C, and even a bit of calcium in your diet. If you strip the leaves you can give the stems to livestock.

1 Cup Cooked

Nutrition Facts

Serving Size 1 cup, chopped 130g (130 g)

Amount Per Serving	
Calories 36	Calories from Fat 4
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 30mg	1%
Total Carbohydrate 7g	2%
Dietary Fiber 3g	10%
Sugars 2g	
Protein 2g	

Vitamin A	354%	• Vitamin C	89%
Calcium	9%	• Iron	6%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*GARLIC

This vegetable should really be pushed more as a superfood. Adding fresh crushed garlic to a bit of butter and smearing it on bread is one of the best ways to overcome a cold that might be popping up or to help you get over one you already have. Or prevent one completely! It can also be used as an antibacterial agent for wound care when mixed with a bit of honey (use after you've

washed the wound thoroughly, of course!). Or take that garlic and honey and eat it to get rid of nasty chest colds and sore throats. Not only all of this, but could you imagine chicken soup or any savory dish without it? Roast a bulb and mix it with rice or beans. Chop it up and spread it over vegetables. Cook it into anything. Versatile, essential, and delicious.

1 Cup, Raw

Nutrition Facts

Serving Size 1 cup 136g (136 g)

Amount Per Serving	
Calories 203	Calories from Fat 6
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 23mg	1%
Total Carbohydrate 45g	15%
Dietary Fiber 3g	11%
Sugars 1g	
Protein 9g	

Vitamin A	0%	• Vitamin C	71%
Calcium	25%	• Iron	13%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

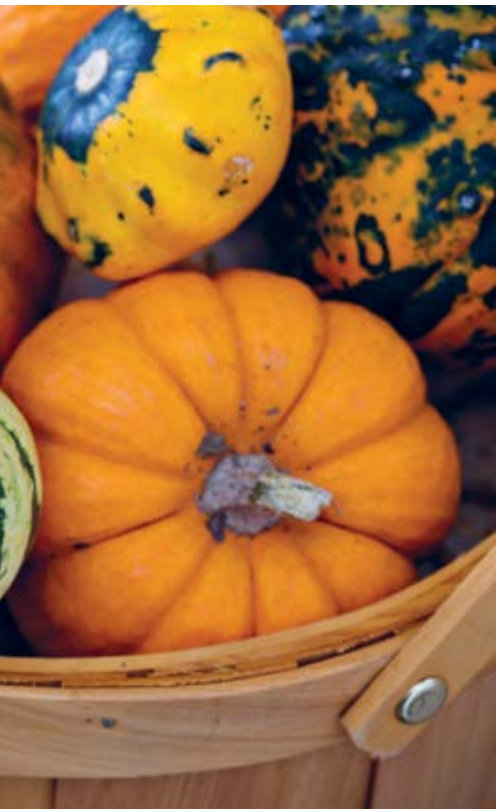
Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*SQUASH

(WINTER AND SUMMER)

There are so many types of different squashes that this should almost be two categories, but we'll keep it all together for you. There are summer or soft skinned squashes and then winter or hard skinned varieties. The summer squashes are generally very prolific and only require a bit of pest control to keep you in more squash than you can eat come July and August. There are some great ways to store these, but we'll save that for the companion volume *"How To Store Your Survival Garden For Less, With Less."*

While summer squashes are numerous, the same can't be said for winter squash, but they have their own secret weapon. They last forever! Provided you have a winter squash that is not pierced or compromised by heavy spotting (can happen from intense rainfall sometimes) those boys will last for months and months. So even in early spring when there's nothing but nettles and watercress, you can pull out a pumpkin or butternut squash and dig in. Full of vitamins A and C among many others. Make room for this one!



1 Cup Winter Squash, Cooked

Nutrition Facts

Serving Size 1 cup, cubes 205g (205 g)

Amount Per Serving	
Calories 76	Calories from Fat 6
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 18g	6%
Dietary Fiber 6g	23%
Sugars 7g	
Protein 2g	

Vitamin A	214%	• Vitamin C	33%
Calcium	5%	• Iron	5%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*BEANS

Endless varieties, endless ways to cook them, and endless ways to store them. Beans are one of nature's perfect foods. You can mash black beans or black eyed peas up to make veggie burgers. Have leftover refried beans? Toss some in the pot of soup you're making to thicken it up. Or use it in place of mayo for a quick protein upgrade on that sandwich wrap. Hello hummus! Chickpeas, cannellini, kidney, black, pinto, limas, etc. You name it and you can do it with beans. I even have an entire cookbook for just beans! Nutritional powerhouses in a tiny package, make sure to grow a few varieties.

1 Cup Kidney, Cooked

Nutrition Facts
Serving Size 1 cup 177g (177 g)

Amount Per Serving

Calories 225	Calories from Fat 7
	% Daily Value*
Total Fat 1g	1%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 0mg	0%
Sodium 2mg	0%
Total Carbohydrate 40g	13%
Dietary Fiber 11g	45%
Sugars 1g	
Protein 15g	

Vitamin A	0%	• Vitamin C	4%
Calcium	6%	• Iron	22%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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*CABBAGE

Like other cruciferous veggies, cabbage is a versatile and nutritious plant. Sure, I know what you're thinking: boiled cabbage and potatoes. Not really exciting. Healthy, but not making you weep with the creativity there. Try looking at the possibilities. Cole slaw in the summer if you grow them in the spring. Sauerkraut (great way to store leftovers!). Cabbage rolls full of beef and rice. There's a really great German casserole called Kohl und Hackfleish that can use any ground meat you have to make. This vegetable is easy to store, nutrient dense, and easy to grow. Can't go wrong with that.

1 Cup, Chopped

Nutrition Facts

Serving Size 1 cup, chopped 89g (89 g)

Amount Per Serving

Calories 22	Calories from Fat 1
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 16mg	1%
Total Carbohydrate 5g	2%
Dietary Fiber 2g	9%
Sugars 3g	
Protein 1g	

Vitamin A 2% • Vitamin C 54%

Calcium 4% • Iron 2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

*ONIONS

I'm trying to imagine a world without onions and it's a very sad world indeed. Onions, like it's allium relative garlic, make food taste better with very little effort. You probably already put them in almost every savory dish. Call it Mirepoix or Trinity, it's the base of at least two famous vegetable mixes. Rich in sulfur for healthy skin, onions are also easy to grow and store for a long time. Baked onions, caramelized onions, French onion soup, these guys belong in your garden plot so plant a lot!

1 Cup, Chopped

Nutrition Facts

Serving Size 1 cup, chopped 160g (160 g)

Amount Per Serving	
Calories 64	Calories from Fat 1
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 6mg	0%
Total Carbohydrate 15g	5%
Dietary Fiber 3g	11%
Sugars 7g	
Protein 2g	

Vitamin A	0%	• Vitamin C	20%
Calcium	4%	• Iron	2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*RADISHES

So when you're depressed because your carrots haven't germinated yet, take hope because these little fellas will be up and ready to go before you can say 'jumpin' jack flash' (everybody loves Whoopi!). Often farmers will mix radish and carrot seeds together when planting so they can tell where the carrots are at. It's also a quick growing salad veg that is surprisingly nutritious. B6, vitamin C, antioxidants, the list goes on. You can slice them paper thin and toss them with a vinaigrette, butter them and eat them with bread and a little fresh herbs. Dice them very fine to add a pleasant crunch to dips and dressings. Don't forget that if you are in a super hurry for something to eat that you can put the seeds in a sprouter and have fresh radish sprouts in just a few days!

1 Cup, Sliced

Nutrition Facts

Serving Size 1 cup slices 116g (116 g)

Amount Per Serving	
Calories 19	Calories from Fat 1
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 45mg	2%
Total Carbohydrate 4g	1%
Dietary Fiber 2g	7%
Sugars 2g	
Protein 1g	

Vitamin A	0%	• Vitamin C	29%
Calcium	3%	• Iron	2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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*BEETS

So I was never really fond of beets as a young person. I always said that they tasted like sweet dirt. They still sort of taste that way to me, but my palate has matured enough to enjoy the taste of sweet dirt. Most often I eat these pickled. Pickled beets are great because you can take the juice from them and add it to pickled eggs or to dressings to jazz things up a bit. So yes, I'm mostly limited to eating my beets pickled or juiced with apples and lemons to make a sort of raw Hawaiian Punch-type drink that knocks the socks off any lingering Pernicious Anemia (B vitamin deficiency).

For those who aren't such babies (like me) there's a wide variety of things you can do with beets. Roast them with butter, orange, and dill (this tastes good even to me). Mash them into a puree to eat with other foods. Roast them and make a root salad with some vinaigrette (this is still sort of pickling to me). You can also grow golden beets or sugar beets, but make sure to look for non-GMO seeds or you won't be replanting next year by saving seeds. Beets are great vegetables for long term storage and very nutrient dense.

1 Cup Cooked, boiled and drained

Nutrition Facts

Serving Size 1/2 cup slices 85g (85 g)

Amount Per Serving	
Calories 37	Calories from Fat 1
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 65mg	3%
Total Carbohydrate 8g	3%
Dietary Fiber 2g	7%
Sugars 7g	
Protein 1g	

Vitamin A	1%	• Vitamin C	5%
Calcium	1%	• Iron	4%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

*TOMATOES

It's hard to believe that less than 200 years ago this fruit-able wasn't even a blip on the radar of the average person. Most people still thought tomatoes were poisonous. We've got Thomas Jefferson to thank for helping to mainstream these beauties. What else would old Southern ladies have to grow in their little gardens? What else would you put on your breakfast plate with that big dollop of mayonnaise next to your grits and bacon? What good is the BL without the T? Yep, I'm full of deep, philosophical questions, aren't I?

If you think of it this way, there's nothing better in the depths of winter (it does get cold in Kentucky, folks, promise!) than a jar of Sunshine taken out of the pantry. That's really what it tastes like when you crack the lid and see the juice and tomatoes kind of plop right into the pan of whatever you're making. Liquid Sunshine... with Plops.

Like sunshine, tomatoes in winter can be life giving. They are full of vitamin C, A, E, iron, calcium, etc. All the good stuff. Plus think of the lycopene! This is an especially important nutrient for men's heart health.

Tomatoes are generally very prolific with the right type of fertilization. There are fertilizers that make a plant grow down (roots) and ones that make them grow up (leaves/stalks) and ones that help to set fruit. Having these in balance isn't as hard as it sounds (we're going to discuss this in a future chapter so keep your pants on). If you do it right, you'll grow a ½ bushel of fruit per plant easily. From there you can dry store, can, freeze, etc. If you ever wanted to learn how to can, you can't get easier than canning tomatoes!

Red Tomato, 1 medium sized, Raw

Nutrition Facts

Serving Size 1 cup cherry tomatoes 149g (149 g)

Amount Per Serving

Calories 27	Calories from Fat 2
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 7mg	0%
Total Carbohydrate 6g	2%
Dietary Fiber 2g	7%
Sugars 4g	
Protein 1g	

Vitamin A	25%	• Vitamin C	32%
Calcium	1%	• Iron	2%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

LETTUCE

We've done the essentials, now we're talking veggies for fun and to add variety if you have the space for them. Lettuce is one that can be very nutritious if you get the right type. You can forget about Iceburg lettuce right now, though! Think of Romaine, Buttercrunch, Bibb, and others that have darker green leaves and more flavor. You might also look at gourmet European variety mixes like Mesclun and Four Seasons where it's not strictly just lettuce growing in there but other little funny veggies all together like endive, frisee, chervil, and arugula. You can be sure that

you'll get a good dose of vitamin C, probably some iron, vitamin A, and other things depending on what's in the mix or what type of lettuce you grow. Seed it in succession while the cool weather permits and give plenty of water or you're looking at some bitter, nasty greens. More than anything, lettuces really respond to foliar feeding to give you sweet and tender shoots. We'll discuss foliar feeding later in the book, but just know for now that lettuce is easy to grow, easy to prep, easy to eat. Just plant a little every three weeks and you'll always have fresh lettuce for a good salad.

Lettuce, Green Leaf, Raw - One Leaf

Nutrition Facts

Serving Size 1 leaf inner 5g (4 g)

Amount Per Serving

Calories 1	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 1mg	0%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 0g	

Vitamin A	7%	• Vitamin C	1%
Calcium	0%	• Iron	0%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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CARROTS

So while carrots themselves are easy to grow, thrive in hungry soil, and don't require fertilizer, the prep work to make a good carrot bed sometimes turns people off. But considering that once it's done, it's done and you can plant parsnips and carrots in it I think it's worth the trouble.

See, carrot beds or wherever you're planting them require a 100% rock and clump free soil environment. Once we've picked a place I tend to plant peas to follow carrots and parsnips in that area to add a little bit of nutrients back to the soil without overdoing it. Fertilizing carrots and parsnips makes monstrous, furry, gnarly carrots. And if a growing carrot hits a rock or stick it reroutes itself to grow away from it which can either stunt them to tiny carrots or they get all gnarled up and so twisted you can't clean or eat them.

To get this smooth soil can be a little tricky. You need a soil screen

(or a makeshift one), sand, shovel, and patience.

Start out by double digging the bed or area you've chosen to plant carrots into. This means you draw a shape (usually rectangular) with your shovel and dig all the soil in that shape out down about 8 inches. Then you put the dirt back in the area you've just dug up. But with carrots we sift the soil through a rough screen and add some sand (only if you have heavy clay or a lot of silt) to keep it easy for the carrots to grow. A soil sifter is easy to make but can be bought at some hardware or gardening stores. You can make one by constructing a box frame from pallets or plywood and tacking a coarse ¼" metal screen onto the bottom. There are several tutorials available online. Your other option is to very thoroughly rake through and declump the soil with your hands but I really don't recommend that unless it's a just in a pot or something.

1 Large Carrot

Nutrition Facts

Serving Size 1 large 15g (15 g)

Amount Per Serving	
Calories 5	Calories from Fat 0
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 12mg	0%
Total Carbohydrate 1g	0%
Dietary Fiber 0g	2%
Sugars 1g	
Protein 0g	

Vitamin A	41%	• Vitamin C	1%
Calcium	0%	• Iron	1%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

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So after you've double dug, sifted, and mixed evenly with a bag or two of play sand then you get to plant! I recommend mixing radish seeds with the carrot seeds if you have them since it helps you see where the carrots are at. Others also recommend mixing it with some coffee grounds for the same reason. It can take a long time for carrots to germinate when compared to other plants.

When planting, again, you have to be careful because if the soil crusts over they won't sprout! So take your carrot seeds (mix with radish seeds if you like) and sprinkle them carefully over your freshly watered soil. Pat them down lightly with your hand until they're barely in the soil. The usual rule is to plant the seed three times as deep as the size of the seed. So a seed that is 1 mm in length you plant 3-4 mm down.

After you plant the seeds, cover the bed or area with either plate glass, plexiglass, or clear plastic sheeting. You want it to be right on top of the soil, touching it even. After three days check for sprouts every day. Just remember that the first set of sprouts will be radishes so if you planted those wait for the second wave of sprouts to come up before taking up the soil cover. At this point, it's some weeding (depending on your method) and maybe thinning out extra carrots. Very few bugs get them and if you plant onions in the same bed or close by they work well as companions and keep away each other's pests. Harvest carrots after the first frost for the best flavor.

If double digging out a special bed completely turns you off, you can do a little less work and grow one of the itty bitty varieties that only grow to be a couple of inches long like Parisienne, Ball, or Little Finger. Just remember, you still need a rock and stick free zone but not as deep.

Do you see now why carrots aren't the first choice for a necessary food plant to grow? Once you get them going, sure, they're easy and fun. But getting them set up is a right pain in the rump!

SWEET POTATOES

This is a super nutrient dense and delicious food item. Nothing more cozy tasting than a baked jacket sweet potato with butter and cinnamon in the fall or winter. A great compliment to stewed apples and roast chicken. There is a Japanese variety that has light yellow flesh and taste sort of squashy but even sweeter and more delicious.

They are very prolific in the right conditions and even giant monster

sized ones retain a good flavor when cooked. It resists drought and heat very well and can store for several months if properly kept. Unlike white potatoes it's perfectly safe to sprout a storebought veg and plant the slips from it. Sweet potatoes have a low glycemic index and are packed with vitamin A, vitamin C, B vitamins, potassium, and unique anti-oxidents. It's been called the world's healthiest food much like kale. I think food scientists have wrestling matches to determine which one is better for you. I say don't choose, stick them both on your plate.

So why didn't this awesome veg make it in the cut?

Because it is considered mostly a tropical vegetable so it requires warmth and a long growing season (100-120 days or more) which cuts out many areas unless you have a greenhouse or a hoop

house. It's also space intensive with the spreading vines. From a 4x8 raised bed we harvested a little over a bushel of sweet potatoes. Granted, many of them were larger than footballs, but it's not as much as it could be. There are surely ways to make these fit your needs, but for those who are land poor it's a hard fit for this delicious vegetable.

For those in zones 8-10 I say it's a vital veg and you should make it a priority to plant them if you have the room. From zone 5-7 you should be good for these in summer only provided you plant slips indoors to get them started before it warms up. For wet climates or places that have a short growing season, there are several fixes you can use but I don't have space to put them all in here. It's nothing the all-knowing Google can't find for you, though.

1 cup, cooked

Nutrition Facts

Serving Size 1 cup 200g (200 g)

Amount Per Serving	
Calories 180	Calories from Fat 3
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 72mg	3%
Total Carbohydrate 41g	14%
Dietary Fiber 7g	26%
Sugars 13g	
Protein 4g	

Vitamin A	769%	• Vitamin C	65%
Calcium	8%	• Iron	8%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Why not...?

So why didn't we put celery in here? Or bell peppers? Broccoli? How about… because we only have so much room in this book! And you only have so much room in your garden. Variety is awesome but only in moderation. There can be too much of a good thing. Not only that, but some plants are just hard as heck to grow properly! Cauliflower usually needs to be blanched by tying the leaves over the head and that's time consuming. Celery is a plant that you have to baby ridiculously. Both of those mean it's a no-no in my time sensitive garden. If you have time and energy to devote to these vampires then go for it, but I've got better things to do. They are very useful for some first world issues like gout and low carb diets.

If you're new and just starting a garden, remember that trying to be overly ambitious is the downfall of 98% of new gardens! (I just made that number up, but it's probably close to the real number). Almost every new gardener I've ever met has doomed themselves before they began by getting too big for their britches and over-extending themselves. Take things slowly. One step at a time. Learn as you go. Don't fail before you even begin.

Section One: Comparison of Popular Gardening Methods

In this part, we're going to discuss the pros and cons of various types of gardening methods so that you can be well informed about different methods and can easily pick the right way for you.

CONVENTIONAL ROWS

I really don't know why everyone and their mama out in rural areas have decided that this is the best way to grow a garden, but it's certainly the most popular. It doesn't require a lot of imagination and it looks just like the big farms so it must be the right way to do it. Not. This was the gold standard perhaps 50-70 years ago but times have changed! There was a huge revolution back in the 70's and 80's in ways to garden and a lot of folks just didn't get the message. Probably because this is the way their grandparents made a kitchen garden. It's just how it's done.

There are some pros to this method, but it's mostly that if you have a very large space you can grow a lot of food for many people. Community gardens work best using the row method. Also, if you're able to flood irrigate then building up mounds in rows is great and you can just release the water to flood the area instead of watering by hand. Drip irrigation is easier to set up with rows and covering them with hoop houses is also easier. Going between rows to weed is easy, but having to weed at all stinks.

Cons:

Clearing an area of land, tilling it, making rows, planting crops, watering it, and WEEDING it is standard fare. It's also insanely time consuming so if you want to spend every minute of your free time out in the garden during the season then go for it. As for me, I hate weeding and I hate hoeing and all the stuff that goes with a standard row type garden. Next!

By Climate:

Traditional row gardening can be successful for those who have large amounts of land or who live in areas that get plenty of rainfall each year and have a fairly long growing season like the Pacific Northwest

and most of the Mid-South and Deep South US. It is not recommended for areas prone to drought such as Southern California, Southwest US, parts of Texas and the Deep South.

SQUARE FOOT GARDENING

Part of that garden revolution I was just talking about, Square Foot Gardening was introduced in a book of the same name in 1981 and has had numerous editions since. It's still quite popular today and for good reason. This method was designed to utilize space efficiently and allow a good variety to be planted in a small area. I like to combine this type of gardening with other types for maximum benefit. You can even put a garden bed right on top of concrete, believe it or not, but I wouldn't recommend it since I reckon it'd have poor drainage.

The basic idea is something like this:

You measure off your garden into 1'x1' square foot mini plots. Then you plant as many plants in that space as you can get away with. Obviously there are some plants like potatoes that cover the whole square foot, but then there are others where you can cram 10-12 plants in there!

Cons:

This method can get a bit confusing because it requires a lot of looking up to see how many of plant x you can fit in space x. Plus crop rotation becomes a nightmare without very careful planning and logs of what you've planted in each space previously. You would have to do this anyway, but SFG tends to make it a bit more complicated. You don't want to put potatoes in the same space as you've put them previously until it's been at least 3-5 years to prevent disease, for example. I think it works well, but you really have to be Type A. If you're a more laissez-faire type then this isn't for you! Nope, don't even try it, hippie! Keep looking.

The setup cost can be prohibitive if you don't have access to cheap building materials. There's also the building and measuring part.

By Climate:

SFG works for almost any climate and you can easily cover the raised beds with hoop houses to extend the growing season. While it can work well in drought stricken areas if done properly and with a few alterations added, I suggest other ways to grow crops if you live where there is very little water or just a lot of heat as these beds dry out quickly when done by the book.

FRENCH INTENSIVE

Said to be one of the most successful ways to raise crops in even very small areas, the French Intensive Method is centuries old. Because of the way the soil is prepared, roots grow deep instead of shallow which leaves more room for other plants nearby. Deeper roots means less watering which makes this perfect for drought-stricken areas. Planting close together also means less weeding for you!

Cons:

It requires a healthy amount of prep work because you must double dig (that means dig ALL the soil out of your area, sift it, and put it back in with soil amendments like compost). You also still have to plan your garden a bit, but it doesn't require the type of exact planning that SFG does so if you're not Martha Stewart you can still do this!

By Climate:

This is absolutely the best method to use in areas like Southern California and the South West US where there is very little water and you want to encourage the plants to grow deep to take advantage of every drop of water available. However, this method works in any climate. I wouldn't recommend it as much where it is muggy or excessively rainy but it can be done. If you live where there is an excess of water then make sure you space the plants out slightly more than the usual to avoid mildew, rot, and other problems caused by plants that are unable to dry out.

RAISED BEDS

The true gold standard of gardening, raised beds are where it's at. Even if you have a hard time bending, this works great because you can make them as high as you want. If you can only do gardening at waist height then you can do this by making beds of interlocking brick. Great solution for elderly or ill gardeners, just takes a bit of work to put together.

But let's look at everyone else, too. You can make the beds any size or shape you want. Just don't do something monumentally stupid like make one BIG garden bed. I don't know anyone who might have done that back when they first started gardening. ::looks shiftily back and forth:: Yeah, those are hard to weed. Bad idea. Just learn from other people's (my) mistakes.

A few guidelines:

- don't use treated lumber, it can leach toxic chemicals into your garden soil
- use cedar or cypress if you can afford it for long lasting wooden rails
- if you have access to bricks or concrete blocks for a good price use these first since they'll last forever and they're non-toxic
- best cheap/free option is to build the sides of the beds with river stones fitted together or with concrete or mortar.

Cons:

Unfortunately most people have to build these a couple at a time due to time and monetary expenses involved in this type of project. But the good thing is that provided you do it right (make them out of good materials) these are permanent structures that will stand the test of time. Some soil types may find that the beds dry out faster than other forms of gardening and nutrients might also evaporate or drain more quickly so this may not be the best option for very hungry soil like sand unless you've amended it significantly. If you cover the beds in black plastic or landscaping fabric you're less likely to lose moisture.

By Climate:

These are great for any climate and no matter how long your growing season is, you can make it longer by covering each bed in a small hoop house and have fresh vegetables for 85-100% of the year. In climates where moisture is excessive, remember that you'll want to build these out of durable materials so look to stone and concrete instead of brick or wood.

LASAGNA' GARDENING

This is another method that can and usually is combined with other methods of gardening. It winds up being a low-maintenance, high-yield solution that is most often combined with Raised Beds. The initial time investment isn't even that much! It's grown in popularity since it's initial debut in the late 1990's.

Essentially you are layering various types of soil amendments right on top of the soil (no tilling!) and 'baking' it into something you can plant on. So manure, peat moss, bone/blood/kelp/fish meal, wet newspaper, grass clippings and bark chips to hold it down to prevent most weeds from coming up. One of the best advantages is that by layering the soil in this way it minimizes watering to almost nothing so it's excellent for areas that are prone to drought. Also, like the best organic methods you are really building the soil nutrients in a way that is not damaging to the microcosm in your gardening area.

Cons:

It usually takes about a season of mellowing and baking before it's ready to plant. By season I mean a few months, 2-4. Best to do this in the fall and plant in the spring with this method (unless you're in the

Southern Hemisphere). The weed prevention isn't fool-proof, either, which is why I usually combine this with black landscaping fabric for a true weed free summer.

By Climate:

Lasagna gardening, which is usually combined with other methods like raised beds, can be a dream come true for those who live in drought stricken areas such as Southern California and the Southwest US. It's also a great way to build up poor or hungry soil like sandy Florida, islands, or places with soil that is too heavy and full of clay. If it rains constantly and you already have pretty good looking loam such as most of the Pacific Northwest then I suggest looking somewhere else. You've already got it made so no point in gilding the lily!

DEEP MULCH

This was popularized way back in 1955 by Ruth Stout, who at age 71, wrote "How to Have a Green Thumb Without an Aching Back". The basic idea is to always keep a 6 – 8" layer of biodegradable material ("mulch") over the garden. The soil stays soft and moist meaning you don't have to dig very much, and when done right, it stays mostly weed-free. Your soil ends up full of nutrients and earthworms. It works with clay or sandy soils and conserves on water.

You can even use deep mulch to start a new garden without digging but it takes at least a season to work. Lay down a layer of corrugated cardboard or 6-24 sheets of newspaper and wet it thoroughly. Then cover it all with leaves and hay or straw to a depth of 8-12". Add lime or wood ashes if your soil is acidic; Ruth added cottonseed, bloodmeal or bonemeal (although I worry about pesticides and antibiotics in those) for nitrogen. You can also use manure or fish emulsion.

You can get mulch materials on the cheap with some hunting around (for example, moldy hay or straw, leaves, wood chips). This method

allows for very easy composting - skip the whole compost pile deal and just put your materials right under the mulch or spread on top. It's called "sheet composting". And given enough space you can grow some of your own mulch in the form of buckwheat, oats, alfalfa and comfrey.

Cons:

You can't skimp on materials – the mulch must be at least 6-8" thick at all times to thwart weeds (and the materials decompose faster than you'd expect in warm weather). Some weeds are not killed by mulching (dock, morning glories, witch grass, thistles) and some mulch materials, such as weedy hay, can even introduce weeds into your garden. It can be difficult and expensive to get enough mulch to keep the garden fully covered, depending on the size and prices and availability in your area.

By Climate:

This is a great way to conserve moisture and save on watering in a dry climate. Mulch may keep your soil cooler longer in the far northern climates and need to be pulled back a few weeks before planting in the Spring so the soil can warm before planting. Conversely, it will also keep your soil warmer longer in the Fall. In areas with extremely sandy soils or very heavy clay, the method may take some time to improve your soil.

http://www.motherearthnews.com/organic-gardening/ruth-stouts-system-for-gardening-zmaz04fmzsel.aspx

NO WEED METHOD

For those with almost zero time who still want great vegetables, this is for you. This combines great with both Lasagna and Raised Bed gardening methods. I use all three and sort of French Intensive it for a combo that works great in our area.

After you've done your soil amendments, cover your garden soil completely with black roll plastic or black landscaping fabric, then cover over that with mulch, grass clippings, and/or bark chips to hold it in place. Make sure to use anchors to keep it in the ground and not blowing around under your mulch. When you're ready to plant just cut an X in each place you're planting and put your seedling in it. Simple!

For those who live in colder climates, this is a fantastic solution to help warm your soil for earlier planting.

Cons:

Some people feel strongly about plastic coming in contact with their vegetables. This used to be us until we started feeling stronger principles about our weeds and actually having time to do something other than pulling them. After that point we got off of our high horses and just used the plastic. We're not dead or maimed yet and not too badly drain bramaged.

This doesn't work well for anything that has to be direct sown like carrots, radishes, or most root vegetables. This is a better solution for plants that mostly grow above the ground.

By Climate:

Again, this is something that is a dream come true for those in drought stricken areas (especially if you use a color that reduces evaporation) but in wetter areas you need to think breathability. Believe it or not, soil can mold and mildew when it's bound up under thick plastic so use a cloth with a looser weave in these areas.

CONTAINER GARDENING

Those of us who have lived in temporary housing and longed for a garden - or even not so temporary in some parts of the country - this is your best solution to have fresh vegetables and even fruit if you utilize the space you have.

If you have a patio, container gardening can get really creative! I have even seen people install planters zig zagging up the walls. When we were in an apartment we grew several vegetables very successfully by using heavy duty storage bins. We drilled holes in the bottoms of the bins and set them on a board frame so they could drain easily. Then it was a matter of filling the bins with dirt and compost and planting away. They did require daily watering, but there were no weeds. We were able to grow carrots, lettuce, cucumbers, tomatoes, cabbages, and potatoes easily using about 10 square feet of space.
For those who don't have a patio or balcony, you can do this inside your apartment on a smaller scale. However, precautions must be made to avoid staining carpets and making a watery mess. For very small apartments with no outside space at all it is probably best to constrain growing vegetables to a flat for lettuces and cabbage and perhaps a pot for a tomato bush.

Even if you aren't in an apartment, though, containers are a good idea for plants that are outside of your zone or too prolific for their own good. I'm thinking of mint when I say this. Mint goes berserk and smart people keep it contained.

Cons:

It's hard to grow some plants in containers and it also requires a certain amount of space if you want to do this successfully. But people have been very creative with patios in apartments and rooftops. You can even grow plants up walls, banisters, from the ceiling, up a piece of lattice. Whatever you can think of. There are tons of creative solutions for container gardening if you check out google.

I've also found that plants are healthier if you can actually put them in the ground, but since this isn't always possible containers are a great substitute followed by filling them with topsoil from the ground instead of that sterile stuff in bags. One part of growing that people discount is the natural bacterias in the soil so add real dirt from 'fertile' areas where and when you can. You can scout out areas where grass is lush but not sprayed with fertilizer or other chemicals and get permission to dig some of the dirt there to mix with your potting soil. Even a few handfuls in each pot help your plants grow better so give it a try.

By Climate:

Every climate!
Here are some clever ideas to get your imagination started:

http://lifeonthebalcony.com/how-to-turn-a-pallet-into-a-garden/
http://www.apartmenttherapy.com/gardening-without-a-garden-10-ideas-for-your-patio-or-balcony-renters-solutions-167221

Section Two: Amending the Soil by Type

So you've figured out what type of garden you want and you're even working on what plants you're going to put in there. All of this is worth nothing if you don't know what you've got to work with and whether it will even grow food!

ANALYZING WHAT YOU HAVE AT HOME

Go out and take a look at your soil. That's where this lesson begins.

Determine where your garden will be, then dig a core sample for yourself that is about 6 inches down by hammering a small pipe into the ground and pulling one up. I'd actually suggest about three samples from close together for the tests we're going to do. Shake it out of the pipe and lay it all on clean paper. Now you've got either a nice pile of logs or a big pile of dirt depending on soil conditions.

At this point you really have three options: send it for professional testing at the local extension office, buy a home kit that is something like this http://www.groworganic.com/la-motte-soil-test-kit.html or wing it.

If you're a wing it type, I'm going to address you since all those soil test types are off calling the extension office or hopping online to buy a soil test.

Testing soil is important. It really is. If you don't know what you have to work with then you can kill your entire crop by adding the wrong

nutrients. Or worse, you can make lovely lush and thick plants that have no fruit set. What if your soil is too fertile and you go plant carrots there? You're going to have mutant, hairy carrots that look like they came from Mars since carrots do better in well-drained soil that is free of the usual fertilizers.

So if this is the absolute end of the world and you can't get even home soil tests then you're going to have to use the following methods.

Otherwise, spend a few dollars and get your soil tested. The right balance of nutrients is super important if you're going to actually have a harvest. If you're really working the 'less' part of the equation and just don't have it, then please at least use these homemade tests so you don't waste precious money and time on things you don't need.

Using containers and bagged soil? Read what the bag says and test it anyway to be sure.

HOME SOIL PH TEST

Take your core samples and mix it all up so it's fairly even in texture, then divide it in three parts. Put two of the parts in one cup each and add enough distilled water (does it have to be distilled? yes it does) to cover it by ½" and stir this up well so you have a nice muddy mixture. To one cup add 3 TB of vinegar (all at once, not bit at a time). To the other cup dump in 3 TB of baking soda.

Which cup has a reaction?

If the vinegar makes the muddy water fizz then you are looking at alkaline soil that has a natural PH that is fairly high, between 7.5-9.

If the baking soda makes the muddy water fizz then you have more acidic soil, a lower PH of 4-6.

No reaction to either one? You either have perfect 7 PH soil or you messed up the test. Do it one more time with a soil sample from a few feet away from the other one just to make sure.
So at this point you know roughly what you're working with and your goal is to either make the soil closer to neutral or to use what you've got and plant accordingly. Many plants like blueberries, for example, work great with acidic soil. Do a little research and figure out if you can live off of only what you can grow with the PH you have. Otherwise amend, my friend.

Compost made of organic matter will generally bring any soil to balance fairly quickly so it's really the go to when it comes to soil amendments. Add a good amount of compost first, mix it in, and then test again in about a month to see where you are. From there you may need to work in some lime, pine needles, peat moss, or whatever it takes to get your soil to optimal.

Your climate can also give you a clue. Soil tends to be more acidic in areas where you get a lot of rain and you may even notice cracks in the earth which is another indication of acidic soil. In drought prone areas you'll usually have more alkaline soil. Either way, it probably needs amending because unless you're growing something that requires acid or alkaline specifically (like blueberries or olives) then you want neutral soil.

Soil Amendments to create more Acidity:

Pine Needles	(don't last long but they make good mulch and don't harm anything so use with other items)
Sulphur	(good for overall plant health, too)
Ferrous Sulfate	(are there a lot of yellow leaves? your plants might be 'anemic' and need this to help!)
Humic Acid	
Coffee Grounds	
Peat Moss	(much maligned by environmentalists but it's more renewable than they say and it lasts a long time)

Soil Amendments to create more Alkalinity:

Wood Ashes	
Ground Limestone	
Ground Oyster Shell	(these three are slow to work which is why you want to start amending a season ahead of planting and remember that less is more!)

IS THAT ALL THERE IS TO IT?

Heck no! We're just getting warmed up, sunshine, so you might want to get comfy in that chair of yours. By the way, hope you got enough soil because we're going to need more. Did you keep that third part from the first test?

This test is easy but it takes about 12 hours to complete. Pour the rest of your soil sample in a clear jar (make sure the sample fills it at least half way but nor more than 2/3 full), fill the rest with clean water and a few drops of liquid dish soap or laundry soap, shake it like it owes you money, and put it somewhere undisturbed for 12 hours.

When you come back the next day, you are going to analyze the soil composition to determine what amendments you need to add in order to make a healthy garden.

WHY IS THIS IMPORTANT?

I spoke earlier about hungry soil and heavy soil? It's true. And if you don't have a clear idea of what you have then you won't be a successful gardener. There are three basic components of soil and then there are extra things like rocks and organic matter that come into play which can help, but let's look at the strict basics.

Clay: a heavy monster, clay soil not only clumps up if it rains too much and bakes into mud brick if it's a drought year, but it's devilishly hard to work with if you want to grow certain things. It takes a tough plant to worm and wiggle their roots down if you have too much clay. However clay soil tends to really hold nutrients so you will be fertilizing less often if you have clay in your soil.

Sand: hungry and forgetful, sand doesn't hold onto anything be it water or nutrients. You constantly have to add more of both to sandy soil. But if you have root vegetables or shallow rooted plants then sand in your

soil is ideal because it allows for free moment of delicate root systems or roots that require less fertilizer instead of more.

Silt: sort of in the middle in it's qualities, you want there to be roughly equal parts of silt to sand. Silt is usually the remains of being dragged up from riverbeds and therefore adds needed aeration to soil as well as fertilization.

Aside from the percentages of each of these, you want to look at the color of the soil. If it's light in color then that typically indicates soil which needs more amending with compost to make it more rich and fertile. Rich soil will be dark, moist, and move easily instead of in clumps or grains.

On the side of your jar the next day, go ahead and find the natural delineations where sand, silt, and clay have settled into layers and draw a line with a marker where each layer is. This can help you figure out more approximate percentages.

If soil is more than 1/3rd clay: Do yourself a favor and add some bags of sand and double dig your garden. Or even just layer some loose topsoil mixed with leaves or straw on top of it, just keep in mind that if you want delicate rooted vegetables like peas or things that need to go deep like carrots that you MUST double dig down about 8", screen the soil, and mix thoroughly with sand or you won't get anything worthwhile. It's a pain, but you only really need to do it once and it's completely worth it.

If soil is more than about 40% sand: You will waste a lot of time watering and fertilizing your soil until you add a bit more clay and silt to this. You want it to be 'heavy' enough to hold what you're putting into it while still light enough that you don't have to double dig anything. This winds up being necessary in places like Florida, islands, and coastal areas.

If your soil is more than about 40% silt: Loosen this up with some more sand if the soil is also full of clay. Otherwise, compost will help even this out pretty well.

WHAT ELSE COULD THERE BE TO THIS SOIL THING?

Well, you need to consider how much nitrogen, phosphorus, and potassium you have among other things. If you want something other than pretty plants then this can require a bit of research on your part, but it's completely worth it in the end when you are making a big harvest.

List of plants that need extra nitrogen

Think of plants that grow above the ground for nitrogen so tomatoes, corn, cole crops like kale or cabbage, collard greens, mustard greens, lettuces, beans, melons, squash, okra, any peppers and almost all vegetables that set 'fruit'. Just don't go overboard or you won't have any fruit! If you're looking at just greens, though, a little extra doesn't hurt because it helps make dense green leaves.

Extra nitrogen can be found in the following amendments:

- coffee grounds
- compost
- fish emulsion
- manure

List of plants that need extra phosphorus

Phosphorus is needed to make strong roots, stems, and makes plants more disease resistant. It also helps strengthen any fruit that has set on the plant (fruit will drop before ripening if there isn't enough of this) and ensures that seeds develop properly. Any root crop such as potatoes, turnips, sweet potatoes, carrots, beets, etc. all require plenty of phosphorus to grow well.

Extra phosphorus can be found in the following amendments:

- bone meal
- bat guano
- rock phosphate

List of plants that need extra potassium

In order to allow the plants to regulate their water intake and produce sufficient protein to function plants need potassium. This is important to ALL plants and not any one in particular.

Extra potassium can be found in the following amendments:

- banana peels
- citrus peels
- kelp meal
- greensand

LINKING WEEDS TO SOIL FERTILITY

This is another one of those 'deep' subjects that requires a lot of time and thought. Books have been written about this subject. Therefore, I'll give the overview of the concept and a list of resources for further learning.

Weeds can be a great indicator of how healthy your soil is, especially if you choose not to do other testing. More than just acid vs alkaline it can tell you how well the soil drains, composition, and other things that can be hard to get even from tests. The following are great resources for learning more on this subject. If the links change then just run them through archive.org to read them.

http://www.sierra-worm-compost.com/soil-fertility.html
http://homestead.org/DianaBarker/LooktotheWeed/SoilIndicators.htm
www.rodalesorganiclife.com/garden/listen-your-weeds
http://www.gardeningknowhow.com/lawn-care/lgen/what-the-weeds-in-your-lawn-are-telling-you.htm

Section Three: Best Overall Methods by Climate

So we've discussed a lot about soil and methods of gardening but what's the best method for you?

After you've completed the soil worksheet on page 108 then start thinking about what your environment is like. Does it rain a lot? Is it hot and humid or cool? Look at what area of the country you live in (US) or if you're outside the US then look at the traditional climate grouping for the area where you live. I've included some handy resources below to help you get started, but I will discuss the most common climates and the best gardening methods for that climate. Using the USDA hardiness map will help you determine when the first and last frosts are which tells you how long your growing season is.

HOT AND DAMP

This refers to places like Florida, the Deep South in coastal areas, parts of Texas, and other places that can also be considered tropical. Typically these areas also have a lot of sand when near the coast and can have more clay type soil as you move inland.

Hot, wet conditions can be great for growing tomatoes, cucumbers, eggplant, squash, and peppers year round, especially if you feed the soil where it gets sandy. However more delicate vegetables may be problematic or impossible to grow: asparagus, lettuces, cole crops (brussels sprouts, broccoli, cauliflower), peas.

All typical gardening methods can be used with ease in this climate, but be careful when selecting materials. Due to the moisture in the air and typical heavy rainfall of this climate, any gardening materials should always be made from concrete, cypress, redwood, or brick. Soil enriching methods are encouraged where the soil is sandy such as in coastal areas.

Resources:
http://www.floridasurvivalgardening.com/
http://www.motherearthnews.com/organic-gardening/gulf-coast-gardening-region.aspx

COOL/COLD AND DAMP

Covering in the US the Pacific Northwest, parts of New England, and the Atlantic seaboard, you live in a climate that is favorable to growing most crops, especially if you have mild winters. A simple hoop house can help you extend your growing season for warm weather loving crops like tomatoes, peppers, and squash. You can also easily grow lettuces, peas, raspberries, apples, and other delicate fruits and vegetables that require a season of cool weather for maximum flavor.

Raised beds are a great place to build mini hoop houses. All other methods are also good for this area. As with the Hot and Damp climate, remember to use building materials that are resistant to moisture, particularly if you receive heavy rainfall.

Resources:
http://www.rainyside.com/
http://www.motherearthnews.com/organic-gardening/maritime-canada-and-new-england-gardening-region.aspx
http://www.motherearthnews.com/organic-gardening/mid-atlantic-gardening-region.aspx
http://www.motherearthnews.com/organic-gardening/pacific-northwest-gardening-region.aspx

HOT AND DRY

Without proper precautions and work arounds a Hot and Dry climate can be problematic for growing healthy crops. The key is to use drought resistant techniques and rely mostly on native species and varieties developed specifically for your needs. Sweet Potatoes do very well in areas that are hot and dry (US Southwest, Southern California, parts of Texas and the South). Drip irrigation is probably the smartest way to go and will help take advantage of any native rainfall as well as conserving city or well water that must be used. Not only this, but it may do you better to grow in a different season than is typical. If your fall and winter is mild then use that time of the year to grow the majority of your crops.

Topsoil in the desert can be difficult to grow in so a lot of soil amending is probably required to get healthy plants that set good fruit. At the height of the year when temperatures climb above 90 degrees you'll probably find that your plants aren't setting fruit so plan to have your harvest before this happens. To extend the growing season you might set up canopies of light filtering material to provide some shade from the intense heat.

French Intensive and Lasagna methods work really well in these areas, as well as **Deep Mulching. Container gardens** can also be successful and very popular since the containers can be moved inside during the hottest part of the year. **Raised beds** can work if you combine it with a method that retains water in the soil. I don't recommend conventional row gardening in this climate. It's far too resource intensive.

Resources:
http://soilandhealth.org/wp-content/uploads/0302hsted/030201/03020100frame.html
http://www.nativeseeds.org/

COOL/COLD AND DRY

Much like in Hot and Dry areas, a Cool/Cold and Dry climate can be difficult to grow life sustaining crops in, especially in areas that are very dusty or extremely high elevations. One thing about places like Colorado, for example, is the unpredictable weather. It can be cold one summer and scorching the next which requires planting several types of plants and setting up help for those crops as the year progresses. If you've got tomatoes and other heat loving vegetables and it's too cool to grow well then using a hoop house is a great idea. If you've got a real scorcher that year then putting up shade cloth to protect your tender veg is going to be the way to go. You have to be a roll with the punches type of person.

In these areas known as 'cold semi-arid' they usually aren't terribly consistent no matter what country you're in. Either way, you'll need to take precautions for using whatever water resources are available and using them wisely. Root crops take a lot of water but they'll also survive in just about every climate so planting potatoes, turnips, carrots, beets, what-have-you will ensure that you have food at harvest time and can even overwinter with some smart mulching.

Also as with Hot and Dry climates, the key is to use drought resistant techniques and rely mostly on native species and varieties developed specifically for your needs. Drip irrigation is probably the smartest way to go and will help take advantage of any native rainfall as well as conserving city or well water that must be used.

Topsoil here can be difficult to grow in so a lot of soil amending is probably required to get healthy plants that set good fruit. To extend the growing season you might set up mini hoop houses or larger ones depending on how much room you have.

Lasagna method works really well here, so does Deep Mulching. Container gardens can also be successful and very popular since the containers can be moved inside during times when it is either too cold or too hot. Raised beds can work if you combine it with a method that retains water in the soil and don't over plant, which will tax the water available. I don't recommend conventional row gardening in this climate. It's far too resource intensive as is Square Foot Gardening unless modified to plant less in each square.

Resources:
http://www.colostate.edu/Dept/CoopExt/4dmg/VegFruit/challeng.htm
http://www.wyogrow.com/

SHORT GROWING SEASON (VERY COLD)

For folks adventurous enough to live in the coldest regions of the planet (Alaska, Canada, parts of the Upper Midwest, Russia, etc.) you have to be very creative to plant anything at all. Warming the soil to plant in it can be a challenge all on its own. Row covers, mulch, hoop houses, and greenhouses are a must to get the most from your short growing season. Or very creative container gardening.

Raised beds can help warm the soil more quickly when combined with row covers or mini hoop houses. Using a French Intensive method or Lasagna method can generate warmth as well. Rain barrels are important to warm the water going on the plants and even a solar heater for the water would not be out of line, especially if you're ambitious enough to try for tomatoes, peppers, cucumbers, or other hot climate vegetables. Mostly, the best thing is to stick with vegetables that have a short harvest time, 90 days or less for things like winter squash, cabbages, or potatoes. For fruit bearing plants you want to have time to get a few weeks of harvest in there of strawberries, peas, or whatever you're growing. And start plants indoors or in a greenhouse before planting to get the most from your crops! This is super important.

Resources:
http://www.canadiangardening.com/
http://www.alaskagardening.net/

RESOURCES FOR THIS SECTION:

http://www.blueplanetbiomes.org/climate.htm
http://www.sunset.com/garden/climate-zones
http://planthardiness.ars.usda.gov/PHZMWeb/

Section Four:
How to Get the Best Tasting, Most Nutritious Vegetables

When people turn their noses up at organic foods there is a lot that they don't understand about them and a lot that they have heard that is incorrect.

Common myths are:

- Organic just means it hasn't been sprayed with chemicals and I can just wash those off
- Organic vegetables aren't any more nutritious than regular ones
- Organic farms don't use pesticides
- There's no reason to buy organic, it's just a label they put on food to make it more expensive
- It's too hard/expensive to farm organic and the yield is lower

By referring to these as myths you can probably tell that I'm going to bust them. Let's go through them all, shall we?

"Organic just means it hasn't been sprayed with chemicals and I can wash those off"

"Organic farms don't use pesticides"

Nope! I do refer to true organic growing methods, not just those in name only. Often in modern certified organic they just switch out one pesticide for another, using a natural fallacy of some sort whereby the

natural pesticides are viewed as superior to the synthetic. Usually I would agree, but things like Bt, for example, can still cause harm.

Organic farmers spray bacillus thuringiensis (Bt) bacteria on plants to kill pests without supposedly harming beneficial insects or humans. Yet when studying genetically modified corn, for example, it kills insects by having the crop produce it's own Bt, which in turn kills the bugs who eat it by exploding their guts. The timeline for introduction of GMO corn has been linked to the sharp rise in disorders in humans of the GI tract like IBS, Crohn's Disease, and others. I remember a time when it wasn't normal for everyone to have severe stomach issues. The fact that those two can be linked (even anecdotally) tells me that more research is needed into that pesticide. Intuitively, it just stinks so until there can be a clear, long-term safety study I avoid using Bt at all. The one good thing about using Bt in a garden is that unlike in GMO corn, the Bt can be washed away and isn't very likely to cause digestive issues in people if you wash it off. I still don't see the point in bothering since there are other things that work just as well. Most pests can be killed by sifting wood ashes over the plants, spraying with sesame or neem oil, or other easier, cheaper, and obviously safer methods.

Some pesticides are needed, sure. But with healthy plants and a few tricks they are often not needed as much as at commercial farms both conventional or organic.

As for washing the petro chemicals off, it's not going to happen. There are waxes that some fruits and vegetables are coated with to make them shiny and to help preserve them which almost never comes completely off. And despite the pesticides being on the outside, even if you wash with the best vegetable wash, it's only partially effective in removing the outer chemicals. There are still often chemicals and pesticides that are absorbed into the plant to kill insects from within. You can't wash these off and yes they are seriously bad for you to consume. When in doubt or if I don't have any other choice I buy conventional produce that can at least have the outer hard skin removed so avocados, bananas, etc. With a bit of sleuthing you can tell from the dirty dozen list which are the worst offenders for that year.

"There's no reason to buy organic, it's just a label they put on food to make it more expensive"

For the reasons mentioned above, I'll tell you that in many ways it is just a way to get you to pay more. Especially when they toss you cheaply produced, lifeless hydroponic organic vegetables. Aquaponics is something different. It's too bad they don't use aquaponics because that's not a bad way to grow food.

But standard hydroponics is often used to get around organic soil certification processes. Then there is the fact that they still do use pesticides, which probably aren't as bad for you but many are questionable. And then the soil itself is not fed or amended to grow real nutrient rich vegetables.

On the other hand, you're paying for something that legally must be non-GMO. There is an exception here for corn which often, when lab tested, turns out to be infected with GMO's due to the way it is wind-pollinated even if it is listed as organic. But most of the time you're paying for something that is safer than conventional. If you want to purchase vegetables or fruits instead of growing your own (because let's get real here, it's just not probable on today's average city lot to get everything you need) then always buy the so called 'dirty dozen' in organic. That label you're paying for may not be perfect, but it's the best we've got.

"It's too hard/expensive to farm organic and the yield is lower"

I'm a lazy gardener. I'll completely admit it. I hate pulling weeds and I will search all day if it helps me to do less work out in the garden. Sure, I like tending the plants and putting my hands in the dirt directly to plant and baby anything I've got growing. But eventually I'll get bored with it or run out of time. It just winds up seeming like a hassle. I just want them to grow and make food to cook or herbs to dry for teas or turn into herbal tinctures for my cabinet. I have a million other things

to do. I just want the darn plants to grow and I want them to do it in a way that doesn't really inconvenience me after I've gotten everything up and running.

This is where real organic gardening comes into play because it's so much more than pesticides or chemicals. Organic gardening is how you take dirt and turn it into gold. It's alchemy and if you do it all right then the result is pure magic; the wonder of how you can take handfuls of veggie scraps and some random animal poop and turn it into a fat, juicy red tomato should universally be marvelled at as much as how babies grow.

If you do your alchemy - especially if you put in those hours at the beginning - you will have high yields with minimal work through the year. It just takes knowledge, testing, planning, and a little intuition. Then you can spend less than 20 minutes a day gardening in most cases. Sometimes not even that if you get good rainfall and you've set up great precautions against weeds. Maybe then you just need to take a walk through everyday and check on your veggie friends.

"Organic vegetables aren't any more nutritious than regular ones"

This section really goes hand in hand with the last one since healthy plants automatically need less care than their sickly counterparts. Just like humans, plants that are healthy can use their internal systems to repel bugs and disease the way we repel bacteria and viruses. If you have a truly organic garden then this will happen over time as you build your plants up and learn how to take care of them better year after year.

When we just moved into our new house I was super excited to learn that it had established raised beds in the back and the owners swore that it was an organic garden. I was therefore kind of disappointed when I saw how lightly colored and lifeless the dirt in the beds looked and how disease ridden the tomatoes that were left looked. The carrots left in the ground were gnarly and woody.

Then I remembered when we first came to see the house and I remember looking in the pantry and freezer to evaluate the size of them. I saw a bunch of gluten free and organic junk food. Gluten free corn dogs. Organic candy. Gluten free muffins. I realized it was the same mentality: sort of a superficial idea that the label gluten free or organic makes everything better. I realized at that point just how much work we have ahead of us to get our new garden to produce and be as healthy as our old one.

Yes I looked in their pantry. I'm a terrible person. Let's move on.

So back to that garden of ours. It's going to require digging out the beds and amending the lifeless dust in them with compost, blood and bone meal, kelp meal, and broken eggshells to bring it back from the dead.

It's going to require laying drip irrigation again. And the fun is going to be avoiding the mistakes we made the first time around.

So you're probably asking yourself why we'd be nuts enough to do all of this just to have good veggies. You can look at it like health care. It's preventative maintenance to grow your veggies as strong as possible. More vitamins in food is less we need to take. Healthier veggies = healthier us. Healthier plants = less work, less disease, less pest problems.

(And I didn't even mention how much healthier it makes YOU to be digging in the dirt and replenishing all of that good gut bacteria that is sadly neglected and destroyed by modern Western living. Digging in the dirt is recommended for people with leaky gut. It's completely true. Do some reading and you'll find just how highly recommended soil-based probiotics are!)

We talked about amending the soil and that's a really important first step to get what is called high brix levels.

I've included two resource links that are very helpful for learning more about this, but I'm going to break it down as simply as I can for folks so you can have a good understanding of the subject before diving into the literature.

Years ago when we first poked our toes into eating organic foods, I bought some organic produce from Whole Foods Market, back then Wild Oats. I'm very Southern and I like collard greens. My grandmother would cook them down with bacon and onions, bit of vinegar, and she'd toss a carrot in there to 'suck up the bitterness'. Adding sugar on top of that was standard. I hated collards as a kid, but as an adult I grew to appreciate the slight bitterness that was leftover after she'd doctored them up.

So I grabbed some collard greens, bundled beautifully from Lady Moon Farms and they looked so pretty compared to the straggly things I'd always bought before at the 'normal' supermarket! I got a couple of

bundles since it was almost Thanksgiving. Then I grabbed another one because I'd recently read about how folks take the center spine out of the leaf and use them for sandwich wraps. I figured we could at least unroll them and eat the insides if nothing else. Then I'd wash the leaves and stick them in the pot with the rest. The more greens the merrier during the holidays.

I got them home, washed them up really well, took the spines out, and started chopping the leaves. I thought I'd taste one after all before I went through the trouble of saving some to make those stupid sandwich wraps with. Those people must be crazy, I thought, because collards are bitter and nasty unless you doctor them up. Then I actually tasted the leaf raw with nothing on it. Delicious! Sweet! Tender!

Did I buy the right thing? I looked at the tags again and they said collard greens. Hmmn. So I tried a couple of experiments. I made the sandwich wraps for dinner, chock full of julienned veggies, sprouts, and hummus. And for the greens for Thanksgiving I only put carrots to add color and texture to the dish. Bacon, onions, and salt yes. Added sugar no no no.

I fully expected the skeptical look on the faces of my family that night. My son grabbed one and bit into it and his eyes lit up in wonder. He ate it all and asked for another. They loved it!

So what happened? What made the organic collards I picked up that day so much better than the ones I grew up with? One thing is that conventional pesticides tend to leave a bitter flavor, especially on greens, that is hard to wash away. But more than that, it's growing conditions. Without ever stepping foot on Lady Moon Farm I know that they grow organically in more than just in name. The brix levels of their produce was something I could taste (And incidentally, still can. Bought some of their greens just the other day and they're perfect!)

At the time I had no clue why it was different. I just knew that organic tasted awesome. Eventually I further found that local organic food tasted even better. I also started picking up on the taste of conventional produce and I could tell that there was a big difference. Vegetables at a salad bar tasted off and bland.

WHAT IS BRIX?

Brix is technically the levels of solid material in the liquid material that plants are made of. It is a measurement of minerals, sugars, and acids among other things. In wine making they use refractometers to measure the sweetness of the grapes being harvested before they are turned into wine. But somewhere along the way someone discovered that the brix level of a plant was indicative of much more than sweetness; brix levels tell you how nutrient dense a vegetable or fruit is, which in turn is an excellent indicator of plant health. When the plant is stressed or deficient in needed nutrients then you have lower brix levels.

SO HOW DO I FIX IT?

Fortunately we've already discussed in great detail how to amend your soil and resources for that. There are more resources at the bottom of the page that deal specifically with amending soil to create high brix plants. Brix has become a much larger thing than it was when I was first starting my gardening adventure. I came across an article at the Weston A. Price website about brix because I was searching for ways to make vegetables more nutrient dense. Back then when I searched around I could only find helpful advice from pot farmer forums. Almost no one else was even talking about raising the brix levels of plants! But from those friendly cannabis farmers I learned a lot about soil supplements to use and foliar feeding tips that helped us create mammoth, delicious vegetables that we and our neighbors enjoyed that year.

I never became nerdy enough about it to get a refractometer myself, but nerd on if you'd like to do that! It's a good indicator to use when you are inexperienced in growing healthy crops. Otherwise, you can just keep an eye on how often the plants are swarmed with pests or disease and compare the taste of the vegetables you are growing to what you get in the supermarket. Maybe also compare how well the food fills your belly. If you need less to fill you then the nutrients are denser in what you're growing. It always worked fine for us that way.

I'm going to go over point by point the items you may want to check off when growing a high brix garden.

- Amend the soil to a fertile neutral, then add sea minerals like kelp meal to provide trace minerals. Ocean minerals specifically can be purchased and worked into the soil.
- Set up a watering system so that your plants are never stressed by lack of water. There are even special watering systems for creating high brix plants but these aren't necessary, just fun to have!
- Create a foliar feed mix and make a schedule for foliar feeding based on blooming
- Get a refractometer to determine the measureable levels of minerals and sugars in your plants (again, totally optional!)

Wait a minute, you say, what's **foliar feeding?** Why are you throwing all this terminology at me? You're going to make me cry!

Pipe down. Breathe. Try to keep up. But then, this is a book so you can go back and re-read wherever you're getting confused. It's okay.

Foliar feeding is simply spraying nutrients onto the plants with a sprayer that looks similar to what people use to spread pesticides on them. Because the nutrients are being sprayed right on the leaves in a misty droplet they get absorbed directly into the plant instead of working up from the roots and through the other plant systems. Think of it like the difference between swallowing a vitamin and spraying it in your mouth.

A pump sprayer or a sprayer hooked up to your hose both work great to spread the foliar love. Two of the most important things to remember is to watch your blooms and only foliar feed when the sun is NOT out. So evening hours when the sun is mostly down and can't burn the leaves as most foliar feeds make plants very photosensitive and they can actually get scalded or burnt. You'll want to do some research on recipes that will work for your specific needs, but this is a listing of common ingredients for a foliar feed application.

FOLIAR FEED IDEAS

Humic Acid
Kelp Extract/Seaweed
Compost Tea
Liquid Sulfur
Molasses
Phytamin 4-3-4
Therm x70
Fish Emulsion

Resources:

http://wewantorganicfood.com/2011/01/08/improving-food-quality-through-brix-testing/
http://www.westonaprice.org/health-topics/the-quest-for-nutrient-dense-food-high-brix-farming-and-gardening/
http://www.healthychild.org/produce-purification-101-can-washing-fruits-veggies-remove-pesticides/
https://www.ocf.berkeley.edu/~lhom/organictext.html
http://www.nutritionsecurity.org/PDF/Brix.pdf
http://www.healthy-vegetable-gardening.com/brix-level.html
http://highbrixgardens.com/
http://jonrowley.com/2010/09/06/tomatochallenge/
https://www.youtube.com/watch?v=T0EyOeVncVY

Section Five: Pest Control by Vegetable Variety and Region

Don't let this information scare you. While there are quite a few garden pests out there, chances are good you'll never have to deal with every single one of them - and certainly not all in the same season! Remember too, some pests do minimal damage, and then move on. In some cases, you don't have to do anything except keep an eye on things and monitor; if the damage begins to stunt the growth of your plants, then you'll obviously have to act. But all gardens contain insects and many times, the beneficial balances out with the harmful, keeping everything in check.

Note that some pests are found pretty much everywhere. In those cases, we didn't note any specific region.

PEST	THEY LIKE TO EAT...	AREAS FOUND IN	ORGANIC SOLUTIONS
Aphids	Most vegetables		Spray with hard jet of water; spray with soapy water; Tomato Leaf Spray; Hot Pepper Spray; Garlic Spray; dust with diatomaceous earth
Beet Leafhopper/ Whitefly	Beans, Beets, Squash, Tomatoes	West of MO and IL (not in foggy coastal areas)	see Leafhopper

Cabbage Looper	Cabbage, Kale		Handpick; Hot Pepper Spray; dust wet plant with lime
Cabbage Maggot/Root Maggot	Cabbage, Kale, Radishes		Sprinkle wood ashes around plant stems; plant very early or late to avoid
Cabbageworm/ Imported Cabbageworm	Cabbage, Kale		Floating row covers; sprinkle with diatomaceous earth
Carrot Rust Fly	Carrots	Mostly Northwest US	Floating row covers; plant later in the season to avoid; spread wood ashes around plant
Carrot Weevil	Beets, Carrots	East of the Rockies	Floating row covers
Carrotworm/ Parsleyworm	Carrots	East of the Rockies	Handpick (these grow into Swallowtail Butterflies)
Colorado Potato Beetles	Potatoes, Tomatoes	Mostly Eastern US	Hand pick into soapy water and wipe off red eggs on undersides of leaves; use thick mulch; dust with diatomaceous earth
Cucumber Beetles	Beans, Potatoes, Squash, Tomatoes	East of the Rockies but most serious in the South	Hand pick; use floating row covers; place foil under the plants

Cutworms	Cabbage, Potatoes		Place a paper collar around young stems; poke soil near damaged plants and remove any worms you find
Deer	Most vegetables		Bloodmeal; fencing; spray mixture of soap and hot sauce; hang bars of Irish Spring soap from fences
Earwig	Potatoes	Mostly in the West, especially Northern CA	Trap with moistened tight rolls of paper - dispose of the next day; dust with diatomaceous earth
Flea Beetles	Beets, Cabbage, Kale, Potatoes, Radishes		Garlic or Hot Pepper Spray; plant as late as possible; sprinkle wood ashes or diatomaceous earth around plant bases
Gophers	Carrots		Trapping or shooting; place human hair around the garden
Harlequin Bugs	Cabbage, Kale, Radish	Southern half of the US, from coast to coast	Handpick; in the Spring, place cabbage leaves in the garden to collect them then destroy
Japanese Beetles	Potatoes	Mostly Eastern US	Hand pick into soapy water; floating row covers; as a last resort, spray with Neem oil

Leafhoppers	Potatoes		Garlic Spray; sprinkle wood ashes or diatomaceous earth around plant bases; place foil under the plants
Leafminers	Beets, Cabbage, Potatoes		Spray with soapy water
Mexican Bean Beetles	Beans, Kale	Especially a problem in the East and Southwest	Hand pick and wipe off yellow eggs on underside of leaves; dust with diatomaceous earth; plant marigolds and summer savory, spray with Neem oil
Nematodes	Beans, Carrots, Garlic, Onions, Potatoes, Sweet Potatoes, Tomatoes	Areas with sandy or loamy soil (not common in clay soil)	Rotate crops yearly; heavy mulch or compost
Onion Maggots	Garlic, Onions, Radishes	Northern and Coastal regions with cool, wet weather	Sprinkle diatomaceous earth or wood ashes around plant base and gently dig in; Spray the ground around the plants with soapy water

Pickleworm	Squash	Southeast and Gulf states, especially FL and LA	Plant as early as possible to avoid
Potato Tuberworm	Potatoes	South from coast to coast, north to WA, CO, VA and MD. Worse in hot, dry years	Plant as early as possible to avoid
Rabbits	Beans, Carrots, Lettuce		Sprinkle dried bloodmeal, bonemeal, ground hot peppers, chile powder, garlic powder; sprinkle urine (either dog or human) around garden areas
Slugs/Snails	Beans, Cabbage, Kale, Lettuce, Onions, Potatoes, Squash	Especially prevalent in Western US	Sprinkle with diatomaceous earth or wood ashes; water in the morning rather than the evening; place shallow containers, with the lip at ground level, filled with stale beer or 1 t. of yeast dissolved in 1/4 c. water - replace daily.

Squash Bugs	Squash		Handpick and wipe eggs from underside of leaves; use row covers but when flowers open, lift for pollination
Squash Vine Borer	Squash	East of the Rockies	Wrap stems with old stockings; if stem is infested, cut a slit and remove borer then mound soil over the stem to encourage new rooting
Stink Bugs	Beans, Cabbage, Tomatoes		Hand pick; control weeds (they love weedy areas); garlic spray; plant marigolds which attracts them and then dispose of the plants
Striped Blister Beetles	All vegetables	East of the Rockies	Handpick (wear gloves to protect your skin); use floating row covers; try spraying with soapy water - very heavy on the soap
Thrips	Beans, Onions, Squash, Tomatoes		Spray with a hard jet of water; spray with soapy water; dust with diatomaceous earth; garlic spray
Tomato Hornworm	Potatoes, Tomatoes		Handpick; hot pepper spray

Wireworms	Beans, Cabbage, Carrots, Lettuce, Onions, Potatoes, Sweet Potatoes	Tends to favor poorly drained soil	Trap them: cut a potato in half and put a stick through the center. Bury it 1" deep with stick as handle then pull out after 1-2 days; plant after soil has warmed up
Woodchucks (Groundhogs, Whistlepigs)	Everything		Trap and remove; get a big dog!; sprinkle bloodmeal; sprinkle hair and/or urine; spray mixture of soap and hot sauce

PLANTS FOR REPELLING INSECTS

BASIL:	Against flies and mosquitoes.
BORAGE:	Against tomato worm.
CASTOR BEAN:	Against moles and aphids.
CATNIP:	Against flea beetles.
DATURA:	Against Japanese beetles.
DEAD NETTLE:	Against potato bugs.
FLAX:	Against potato bugs.
GARLIC:	Against Japanese beetle, aphis, weevils, fruit tree borers, spider mites.
HENBIT:	General insect repellent.
HORSERADISH:	Against potato bugs (plant at corners of plot).
HYSSOP:	Against cabbage moth.
LAVENDER:	Against clothes moths (dry and place in garments).
MARIGOLDS:	Against Mexican bean beetles, nematodes and many other insects.
MINT:	Against white cabbage moths, dried against clothes moths.
MOLE PLANT:	Against moles and mice (the mole plant is a species of Euphorbia).
NASTURTIUM:	Against aphids, squash bugs, woolly aphids.
PENNYROYAL:	Against ants and aphids.
PEPPERMINT:	Against cabbage moths, ants.
PETUNIA:	Against beetles.

POT MARIGOLD:	Against pickleworms, aphids, leafhoppers, spider mites, harlequin bugs, imported cabbage worms and many other insects.
PYRETHURM:	Against pickleworms, aphids, leafhoppers, spider mites, harlequin bugs, imported. cabbage worms and ticks.
ROSE GERANIUM:	Oil or crushed leaves as insect repellants.
ROSEMARY:	Against cabbage moths, bean beetles, carrot flies.
RUE:	Against Japanese beetles.
SAGE:	Against cabbage moths, carrot flies, ticks.
SANTOLINA:	Against moths.
SASSAFRAS:	Against aphids.
SOUTHERNWOOD:	Against cabbage moths.
SPEARMINT:	Against ants, aphids.
STINGING NETTLE:	Against aphids, black flies.
SUMMER SAVORY:	Against bean beetles.
TANSY:	Against flying insects, Japanese beetles, striped cucumber beetles, squash bugs and ants.
THYME:	Against cabbage worms.
WHITE GERANIUM:	Against Japanese beetles.
WORMWOOD:	Against animal intruders, cabbage worms, flea beetles.

HOMEMADE REMEDIES

ALL PURPOSE INSECT SPRAY:

Liquefy in a blender:

1 head of garlic, a small onion, 1 t. cayenne pepper (or other hot pepper). Mix with 1 quart of water and steep for an hour. Strain out the solids. Add 1 T. of dishwashing soap. Use this for all leaf eaters, spraying on both sides of the plant's leaves.

GARLIC SPRAY:

Add a head of minced garlic to a gallon of water (alternately, blend the garlic with some water then add remaining water). Add 1 T. of olive oil. Let this sit for 48 hours. Strain out the garlic. Add a few drops of dish soap. Spray plants in the evening.

HOT PEPPER SPRAY:

Puree 1/2 cup of hot peppers with 2 c. of water in a blender. Strain. Spray every 5 - 7 days. Adding a drop of detergent may help this to stick better. Use it to repel insects and critters.

MANURE TEA:

Fill a bucket 2/3 full with water; top with manure. Steep 2 - 3 days. Pour off the liquid and dilute it until it's the color of weak tea. Use as a fertilizer.

Resources:

http://hungrypests.com/the-threat/
http://www.motherearthnews.com/organic-gardening/organic-pesticides-zmaz94fmzraw.aspx
http://www.globalhealingcenter.com/natural-health/organic-pesticides/

Section Six: Best Varieties

POTATOES (SOLANUM TUBEROSUM):

Potato crop yields are most prolific in cold and dry areas of the United States with the majority of potatoes coming from--you guessed it--Idaho, the king of the classic Idaho (Russet) potato--The Spud! Other states with major potato crops are Washington, Wisconsin, Oregon, Colorado, North Dakota, and Minnesota where winters can be harsh and cold (which freezes nasty pests) and summer days are long and hot making conditions ideal for growing. Growers in warmer parts of the country can work around this though by planting in the fall, winter or early spring so the potatoes can be harvested before hot summer weather arrives.

Potatoes fall into three basic categories: starchy, waxy and all-purpose. The classic Russet or Idaho potato falls in the first category. They're dry, fluffy, and starchy and hold up well for baking and frying. Other varieties of starchy potatoes include Blue/Purple Peruvians, White Potatoes and Katahdin, which are the perfect potato for your pommes frites and American french fry.

Waxy and all-purpose potatoes, on the other hand, are smoother, hold their shape better while cooking and are perfect in soups, stews and salads. Classic varieties of waxy potatoes include red, yellow, fingerling, and bite-size petite potatoes.

There are literally hundreds of potato varieties. Here's a partial list of some of the best:

VARIETY	CHARACTERISTICS
All Blue	Mid-season
Caribe	Short season, high yield
Carola	Good flavor
Elba	Stands up to insects & diseases, late-season
French Fingerling	Good flavor, good storage, mid-season
Green Mountain	Late-season
Kennebec	Good storage, mid-season
King Harry	Stands up well to insects & diseases
Purple Viking	Mid-season
Red Pontiac/Red Norland	Good flavor, early season, good for storage
Rose Finn Apple	Mid-season
Rose Gold	Good flavor
Russian Banana	Good flavor
Swedish Peanut	Good for storage
Yellow Finn	Mid-season
Yukon Gold	Good for storage, early season

Companions and Advice

Marigolds and basil are good choices to plant with your potatoes since they're supposed to help keep potato bugs away. Other good companions to plant near are beans, cabbage, onions, horseradish, basil and nasturtiums. Planting other varieties from the same family is generally not a good idea with nightshades so avoid planting with peppers, eggplants, and tomatoes since they can infect each other.

Also remember to rotate your potato locations every year and don't plant in the same location for at least five seasons. This helps to keep diseases at bay. In the 1840's there was the famous Irish potato famine which was a perfect storm of things that starved the Irish, but a potato blight was the main cause of that traumatic event which sent hundreds of thousands of Irish across the sea to try their luck in America. Potato blights are such a serious thing that when you buy seed potatoes they are actually raised in special labs to keep them sterile and to monitor if they have a disease or not. This is why you don't want to just plant any old potato in the dirt unless you have no other choice because you're playing Russian Roulette with your crops.

KALE (BRASSICA OLERACEA):

Kale is an extremely versatile vegetable that is adaptable to many climates -- in fact, it likes a bit of frost which sweetens the taste. There are two forms: curly (or frilly-leaved) and smooth leaved. Extreme heat can make kale bitter. A great advantage of kale is it matures quickly and can be cut back and then regrow, giving you an ongoing harvest. It can overwinter in many climates but it may need some mulch or other protection in extremely cold areas.

Some of the more popular heirloom varieties include:

VARIETY	CHARACTERISTICS
Blue Curled Scotch	Holds up to heat
Dwarf Blue Curled	Good for late summer planting
Gulag Stars	Flavorful
Lacinato (Tuscan, Dinosaur)	Savoy type with mild flavor
Red Russian	Tender and mild

Savoy	Early Spring plantings; sweet
Scarlet Kale	Tender, curly
Siberian	Slow to bolt; tender
Vates Blue Curled	Overwinters well

Companions and Advice

Kale is supposed to be helpful to grow with your potatoes and cabbages. Marigolds, nasturtiums, thyme, and sage planted nearby are supposed to help keep pests away.

Kale is frequently stripped down to a nub by caterpillars which is why it's usually sprayed with Bt. Using kaolin clay, diatomaceous earth (DE), or insecticidal soap generally works in a safer way. I suggest once they get a bit of growth on them to just start powdering them with kaolin clay. Not enough that they are smothered, but enough that the bugs will likely leave them alone. I've noticed that they tend to get eaten right before I want to eat them so just before you start thinking of plucking some up for dinner, think about crawlies that might want them first.

GARLIC (ALLIUM SATIVUM):

Garlic can be divided into two main types: Softneck, which is what you find at the grocery stores because it has a long shelf life, and Hardneck, which is also called topset because before the bulbs expand underground, the plant grows a flower stem. Garlic takes about 8 - 10 months to grow and depending on where you live, you either plant it in the Fall or the Spring.

Here are some tried and true varieties:

VARIETY	CHARACTERISTICS
Chesnok Red	Hardneck, widely adaptable
Early German White	Hardneck, dependable, easy peel
Early Red Italian	Softneck, creamy, early, good raw
Inchelium Red	Softneck, mild, taste winner
Polish Softneck	Softneck, spicy, winter hardy
Red Toch	Softneck, large, great flavor
Russian Red	Hardneck, better than others in soggy soils
Siberian	Hardneck, good for cold winter areas
Spanish Roja	Hardneck, rich flavor

Companions and Advice

Garlic makes a great companion to everything in your garden - with the exception of beans. Try tucking some garlic plants in small available spaces, interplanted with your other vegetables. Garlic can be used to repel most pests, insects as well as mammals.

SQUASH (CUCURBITA):

Let's divide squash into the two major categories: winter and summer with winter squash including pumpkins and gourds (hard skin and flesh) and summer squash (soft skin and flesh) consisting primarily of zucchini and yellow squash varieties.

There are a huge number of varieties and heirlooms that can be purchased--we're excited about the plethora of them and want to share with you a rather long listing because no matter where you are you can find a variety that will suit your needs.

Some of our favorite varieties are:

VARIETY	CHARACTERISTICS
SUMMER SQUASH	
Black Beauty	Zucchini, freezes well
Costata Romanesca	Stays tender even as it gets bigger
Lemon	Small, outlasts the bugs
Rampicante Tromboncino	Long and curved, stands up well to insects
Ronde de Nice	Small round, good producer
Table Dainty	Striped
Yellow Bush Scallop	Pattypan
Yellow Crookneck	Sweet, buttery flavor
WINTER SQUASH	
Banana Pink	Can grow very large, good texture
Butternut	Stores well
Candy Roaster	Adaptable to hot and cold
Delicata	Light orange flesh, delicious taste
Gold Nugget	Developed as sweet potato substitute
Sweet Dumpling	Good keeper, good producer
Sweet Meat	Good keeper, rich and sweet
Thelma Sanders Sweet Potato	Small acorn, short season

Companions and Advice

Squash can benefit from growing with radishes. Borage and nasturtiums are both supposed to help discourage the bugs that like to nibble on the plant. Marigolds certainly won't hurt either! Cabbage, carrots, garlic, onions, and radishes all work well with squash.

And then there's the old standby of the "three sisters": beans, corn and squash. When Native Americans first taught European settlers about these North American standby crops, they taught them how to grow them. You can check out this great article for a step by step guide on how to do this. http://www.reneesgarden.com/articles/3sisters.html

To keep squash plants bug free we always just saved our wood ashes from winter and threw them on the squash plants once bugs rear their ugly heads. A good coating of ashes, then watering the plants at sunset usually worked. We'd repeat it a couple of times and whenever bugs became an issue. It always worked great for us so give it a try!

BEANS (FABACEAE):

There are over 40,000 species of beans from all over the world. They are multi climate plants that are found everywhere-- from the dry forests of the Americas to the tropical rainforests of Africa. Beans can be in the form of dried beans, pole green beans (which send up long vines and need to be grown with something to climb up), and bush green beans.

DRIED BEANS	
VARIETY	**CHARACTERISTICS**
Adzuki	Easy to grow, very rich in vitamins
Anasazi	Drought tolerant, sweet
Black Turtle	Good for cooler climates

Henderson's Bush Lima	Early, tasty and tender
Hutterite Soup	Creamy white, prolific
Jacob's Cattle	Beautiful, good for baking and soups
Tepary Beans	Blue speckled, heat and drought tolerant
Tigers Eye	Easy to grow, like a pinto bean but creamier
Tongues of Fire (Borlotto Bush)	Use fresh or dried, easy to grow
Vermont Cranberry	Very large, red and pink

BUSH BEANS	
VARIETY	**CHARACTERISTICS**
Blue Lake	Adapted to cooler summers
Contender	Tolerates heat and mildew, tender
Golden Wax	Rich flavor, golden yellow, stringless
Maxibel	Easy, widely adapted, long and slender
Montpellier	French filet, extra fine
Nickel Filet	Baby French bean, tender
Provider	Extra early, widely adapted
Roma	Flat beans, heavy yielder
Slenderette	Huge yields
Tendergreen	Meaty, good for freezing

POLE BEANS	
VARIETY	**CHARACTERISTICS**
Cherokee Trail of Tears	Good for snap and dry, prolific
Christmas/Speckled Calico	Rich butter bean, red speckled
Dragon's Tongue Streaked	Yellow with purple streaks, tender
Fortex	Extra long, slender, early
Greasy Grits	Productive, bug resistence, flavorful
Kentucky Wonder/Old Homestead	Very reliable, early, productive
Missouri Wonder	Extremely productive even in hot and cooler weather
Purple Podded	Bright purple, stringless, tender
Rattlesnake	Does well in heat, outstanding flavor
Scarlet Runner	Like cooler weather, beautiful vines

Companions and Advice

Try growing marigolds and summer savory with your beans. Both are supposed to help keep the pests away. Other good companions to grow with your beans are cabbage, carrots, and potatoes. Keep onions and garlic away from your beans - they do not like each other!

CABBAGE (BRASSICA OLERACEA):

Cabbage is a cool season crop that comes in two types: flat leaf and savoy (crinkled-leaf). You can make plantings in both the spring and fall. Check the variety because some mature earlier than others and you can time that to your growing region, avoiding the hottest parts of the year.

Some tried and true varieties include:

VARIETY	CHARACTERISTICS
Brunswick	Cold hardy, stores well
Charleston Wakefield	Heat tolerant
Copenhagen Market	Early, lasts longer in garden
Danish Ballhead	Good keeper
Des Vertus Savoy	Very curly, small headed super hardy savoy of excellent quality
Early Jersey Wakefield	Early, reliable
Golden Acre	Early, compact
Gonzales	Mini, hybrid (good for containers)
Henderson's	Early, handles weather changes
January King	Savoy
Late Flat Dutch	Late, savoy
Mammoth Red Rock	Red, hardy, easy
Perfection Drumhead	Late, savoy
Primax	Early, hybrid
Savoy Chieftain	Savoy, tolerates insects

Companions and Advice

Cabbage can benefit from having nice smelling herbs planted nearby. Try planting dill, sage, chamomile, peppermint, thyme or rosemary. It can also be helped when planted with beets, onions and potatoes.

To keep slugs out of your beautiful cabbages, crush eggshells and sprinkle them around the cabbages in a circle. They slice up their soft bellies and don't want to bother with them. Or make beer traps by sinking clean tuna cans into the dirt between cabbages and fill them with beer. The slugs are little drunkards and they'll drown themselves in the beer.

Also, don't overwater your cabbages as they can burst. Nothing is sadder than a beautiful, giant drumhead cabbage with cracks all over it. If it's raining heavily just cover your cabbages (and tomatoes) with plastic sheeting until it's stopped.

ONIONS (ALLIUMS):

Basically there are two types of onions: short day and long day. Short day onions require 10 - 12 hours of daylight before they can form bulbs below the ground; long day onions need 15 - 16 hours. Because of this, generally speaking, short days do better in the Southern half of the US while long days are better for the North. Some seed companies sell varieties that are listed as "day neutral" or "intermediate" which can be grown anywhere.

Here's a good link for choosing the right type of onion for your location:
http://sustainableseedco.com/onion-seed/

Here are some of the most popular varieties:

VARIETY	CHARACTERISTICS
Ailsa Craig	Long day, can grow to be very large
Ebenezer	Short day, quick, hardy
Granex	Short day, sweet (think "Vidalia")
Italian Red Torpedo	Day neutral, sweet and mild red
Red Creole	Short day, small, sweet
Red Marble Cipollini	Long day, small, sweet
Red Torpedo (Long Red Florence)	Intermediate, long and narrow
Stuttgarter	Long day, one of the best keepers
Walla Walla Sweet	Long day, sweet
Yellow Globe	Long day, tried and true, good keeper

Companions and Advice

Onions do well with beets, cabbages, carrots, kale, lettuce, and tomatoes. You can actually use them to fill in small spaces throughout the garden and benefit other plants at the same time. The only plant they don't get along well with is beans.

When you plant onions, unless you make seed tapes or plant onion starts, you'll have to thin them out. The thinned out little onions make great soups and garnishes and can be eaten in the same way you'd eat chives or wild garlic..

Planting onions by seed is better if you plan to store your onions in braids or over winter them. Otherwise, planting starts will do you just fine if you plan to eat your onions fairly soon after harvest.

RADISH (RAPHANUS SATIVUS):

Radishes come not only in the form of the red, round things we find in our salads. There's plenty of variety not only in color and shape but also in taste and use. There are radishes that are grown for cooking and pickling as well. Believe it or not, for those who are trying to get away from nightshades, radishes make a great substitute for potatoes when they are boiled and mashed! Some varieties store for several months which makes them a useful tool for your winter garden and a possible food source for livestock.

Here are some old favorite varieties to try:

VARIETY	CHARACTERISTICS
Chinese White Winter	Good cooked or raw; easy to grow
Daikon	An incredibly large radish, this guy is great for those who like Asian cuisine. Use it in stir-fry, fresh eating, pickling, and fermenting (kim chi). On the spicy side!
French Breakfast	Fast grower, mild, a real favorite
Philadelphia White Box	Fast grower, white, mild flesh
Pink Summercicle	Carrot shaped
Purple Plum	Fast, sweet and mild
Red Meat (Watermelon Radish)	Good for Fall; sweet and crunchy

Round Black Spanish	Can over winter
Violet de Gournay	Purple, can take some frost
White Icicle	Juicy and mild

Companions and Advice

Radishes do well when planted with beans, cabbage, carrots, kale, lettuce and nasturtiums.

When planting carrots, sprinkle radish seeds in the mix because the radishes will germinate very quickly while the carrots are relatively slow. If you have the radish seeds in there you can see where the carrots have been planted and have a nice harvest of radishes by the time your carrot bed is ready to thin out. Pick smaller types of radishes for this method.

BEETS (BETA VULGARIS):

Beets are a cool-season root vegetable and grow well in spring in multiple climates.

Some popular varieties are:

VARIETY	CHARACTERISTICS
Albino	Pure white, great flavor
Bulls Blood	Greens are sweet
Chiogga	Gourmet, red and white striped
Crosby's Egyptian	Early, tender, not earthy in flavor
Cylindra/Formanova	Long, slender, smooth skin
Detroit Dark Red	Popular old standard, good greens too

Early Wonder	Early, good greens, smaller beet
Golden	Rich golden color, sweet
Lutz/Winter Keeper	Good storage, good yields

Companions and Advice

Beets can help bush beans (keep them away from your pole beans though!). You may also want to plant them with your bush beans, cabbage, radishes, and onions.

If you're looking to grow sugar beets to process your own sugar it's a bit of a process. I heartily recommend keeping bees or learning to identify and tap sugar maples in the wild instead as it's much easier and less land intensive. But for those who just want to do it, below are some great links to help you on that journey.

https://www.youtube.com/watch?v=fJtvbicVEMk
http://www.survivopedia.com/how-to-make-sugar-at-home/
http://americanpreppersnetwork.com/2012/12/how-to-make-your-own-sugar.html

TOMATOES (SOLANUM LYOPERSICUM):

There are a mind staggering 3,000 varieties and more than 10,000 heirloom varieties. You've got tomatoes made for making sauce ("paste" or "Roma" tomatoes), tomatoes made for slicing and eating fresh, yellow, red, pink, black, purple, white; tomatoes made for eating green; tomatoes created to produce nice and early in a short season and ones that you may not see appear until August. You've got the whoppers giving you more than one person can eat per tomato and the little tiny cherry, grape and salad varieties. The hardest part of growing tomatoes may be deciding which varieties you want to choose. Try a few different ones each year though because each has it's own characteristics and benefits and drawbacks. Growing several varieties ensures a harvest no matter what weather or pests the season may bring you.

GOOD COMPANION	BAD COMPANION
Asparagus	Broccoli
Basil	Brussels Sprouts
Beans	Cabbage
Borage	Cauliflower
Carrots	Corn
Celery	Kale
Dill	Kohlrabi
Garlic	Potatoes
Lettuce	
Melons	
Onions	
Parsley	
Peppers	
Radishes	
Spinach	
Thyme	

Companions and Advice

Try planting your tomatoes with marigolds or nasturtiums. One drawback with tomatoes and carrots: tomato plants can stunt the growth of your carrots but the carrots will still have a good flavor. Basil repels flies and mosquitoes, improves growth and flavor – and just naturally tastes good with tomatoes! Bee balm, chives, and mint improve health and flavor. Borage deters tomato worm, improves growth and flavor. Dill, until mature, improves growth and health; mature dill retards tomato growth.

Enemies: keep corn and tomatoes apart since they're attacked by the same worm. Known as the corn earworm or tomato hornworm - it's a big old ugly sucker. In the caterpillar phase of its life, it causes damage to fresh sweet corn by burrowing into the tops and in tomatoes, they chew a hole in the stem end, ruining the fruit. Keep potatoes and tomatoes apart since they both can get early and late blight contaminating each other.

Here are some of our favorite heirloom types and varieties:

Popular Globes	
VARIETY	**CHARACTERISTICS**
Aunt Gertie's Globe Red Rose	Rich taste
Costaluto Genovese	Prolific in hot or cold weather
Flamme/Jaune Flamme	Juicy, orange, productive
Mr. Stripey/Tigrella	Huge crops, yellow and red striped
Nebraska Wedding	Apricot orange, dependable in weather extremes
Russian Black	Good for containers, rich dark brown
Stupice	Small but very early and reliable
White Beauty/Snowball	Called the best white variety, great flavor
Popular Beefsteaks	
VARIETY	**CHARACTERISTICS**
African Queen	Well balanced taste
Aunt Ginny's	Abundant, large, juicy, resists cracking
Believe It or Not	Very large fruits
Black Krim	Good for a container or small garden
Boxcar Willy	Very heavy crop, lasts all season
Green Zebra	Zesty, green and yellow
Hillbilly/Flame	Huge, yellow and red, rich flavor
Mortgage Lifter	Meaty
Pruden's Purple	Early, productive, large fruits

Popular Oxhearts	
VARIETY	**CHARACTERISTICS**
Amish Paste	Large and meaty
Anna Russian	Heart shaped, good in hot and cool weather
German Red Strawberry	Meaty and abundant
Hungarian Heart	Enormous, meaty, crack resistant
Japanese Oxheart	Pink, extra high yields
Orange Russian 117	Yellow and red, sweet
Popular Pears & Plums	
VARIETY	**CHARACTERISTICS**
Amish Paste	Classic, supposed to be the ultimate paste tomato
Black Cherry	Purple brown, unique and delicious
Garden Peach	Light, fruity, keep for several weeks
Green Grape	Good flavor, seems to do well in cooler summers
Ivory Egg	Ivory color, creamy flesh
Jersey Giant	Paste tomato with rich, beefsteak flavor
Opalka	Thin skin, thick and meaty paste tomato
Orange Banana	Orange paste, also good for drying
Principe Borghese	Good for drying, very little juice
Purple Russian	Productive, “perfect” purplish fruits with no blemishes

Red Currant	Very tiny, long season and prolific
San Marzano	Heavy producer, standard Italian paste
Tommy Toes	Good in heat and humidity, lots of 1" fruits
Yellow Pear	Mild, grows in clusters

LETTUCE (LACTUCA SATIVA):

Originally a wild plant containing a latex-like sap that produced a type of painkiller and sedative, we eventually got our 'garden variety' versions of this favorite salad green. All the way back to ancient times, humans have cultivated lettuce for medicine and food.

Some good, well adapted heirlooms are:

VARIETY	CHARACTERISTICS
Black Seeded Simpson	Can withstand heat
Buttercrunch	Butterhead, very heat tolerant
Deer Tongue	Tender and prolific
Mascara	Sweet taste
Merveille des Quatre Saisons	Looseleaf with a crisp center; grows in all weather
Pablo	Slow to bolt, nice, wide leaves
Paris Island Cos	Romaine, heat tolerant
Red Salad Bowl	Slow to bolt
Tom Thumb	Butterhead, good for containers

Companions and Advice

Lettuce can benefit from being planted with beans, beets, carrots and radishes (it can even supposedly help to make these tender in the

summer weather). Keep it away from your cabbages and kale plants because they just don't get along well together.

Lettuce grows best in cooler climates because it has a tendency to bolt - which means it sends up a seed stalk and tries to produce flowers - in warm weather, making the leaves bitter. There are several varieties that hold up to the heat better than others though and you can always tuck in lettuce plants in the shade of taller plants during the hotter times of year. Another trick to prevent bitter lettuce is to keep them consistently watered so they grow at a steady rate.

If you want to get a head start on your lettuces then stick these guys in a cold frame or start them inside before transplanting outside. Of all vegetables, lettuce varieties are probably the very best plant for a container garden.

CARROTS (DAUCUS CAROTA SUBSP. SATIVUS):

Carrots are a cool season crop and can be planted for the Spring and Fall. They're divided into groups by size and shape - it's important to choose the right one to match your soil. Ball, Chantenay, and Danvers are more blocky shaped carrots, good for heavy soil. Nantes and Imperator varieties are slender in shape and work better in very deep, loose soils. Orange is the most common color but carrots also come in red, purple, white and yellow varieties.

Some good heirloom varieties are:

VARIETY	CHARACTERISTICS
Atomic Red	High in vitamins, best when cooked
Danvers	Good for heavy soil
Little Finger	Fast grower, sweet
Lunar White	White root; hardy and mild
Oxheart	Large, blunt; good for shallow or heavy soil

Paris Market (also called Parisian Market, Tondes de Paris)	Small, round, good for heavy soil
Purple Dragon	Spicy, good in heavy soils
Red Core Chantenay	Very sweet; good for juice or eating
Royal Chantenay	Delivers dependable yields
Scarlet Nantes	Easy to grow; fast

Companions and Advice

Carrots do well when planted with bush beans, cabbage, early potatoes, garlic, lettuce, onions, radishes, and tomatoes. If you plant dill, keep it away from your carrots since they do not get along. Parsley and carrots are related plants so watch out for diseases between the two.

I detailed previously about the steps to make a carrot bed so I suggest that if you want to give it a whirl that you read over that section well. They may sound complicated, but once you have a carrot bed started you can keep using that one or make two and alternate from year to year (the best option by far) since other plants thrive in sandy, loose soil. Aside from the prepping part, carrots are super easy. Make sure to harvest after your first frost for the best flavor as the plant sugars get sent to the roots and you'll have a sweeter carrot.

SWEET POTATOES (IPOMOEA BATATAS):

Sweet Potatoes are a warm season vegetable, needing at least three months without frost. Those of you in the northern climates should look for varieties that mature in 90 days or so. Other than the requirement of heat, they're pretty easy to grow, mostly pest free and drought resistant as well.

Sweets come in a variety of colors, sweetness and textures.

VARIETY	CHARACTERISTICS
Arkansas Red	Early, orange flesh with high yields
Beauregard	Good for short seasons, light orange
Carolina Ruby	Reliable, high yields, dark orange
Ginseng Red	Early, flavor improves with storage
Jersey Yellow	Creamy, stays firm when cooked, very old variety
Molokai	Purple, dry flesh, rich in vitamins
O'Henry	White, creamy, about 100 days to maturity
Red Japanese	Good for short seasons, purple skin, white flesh, seriously delicious!
Southern Delite	Color varies depending on the soil it's grown in
Vardaman	Deep orange, taste test winner

Companions and Advice

Unlike regular potatoes, you can most definitely grow slips from old store bought sweet potatoes and plant them in your garden. They need a lot of space to spread out so if you do raised beds they need their own beds.

The only real companion to sweet potatoes is okra, which is fine by me because we love us some gumbo here! You can stick an okra plant on each end of a raised bed of good size with sweet potato vines. But if you couldn't figure for the life of you what to do with okra, go look up Trim Healthy Mama recipes because those ladies have discovered just about EVERYTHING you can do with okra that you never thought of before. Okra has wonderful health properties, especially for those with digestive issues, so sneak some into your brownies this week. I tried it and it worked a treat. My family never knew.

Section Seven: Resources

APARTMENT GARDENING LINKS AND VIDEOS

http://survivalathome.com/apartment-homesteading/
http://urbansurvivalsite.com/urban-survival-gardening/
https://www.youtube.com/watch?v=y2MMxCMIqqo
http://community.artofmanliness.com/forum/topics/urban-apartment-survival?xg_source=activity
http://www.thepreppersuniversity.com/tag/indoor-survival-garden/
http://www.offthegridnews.com/survival-gardening-2/how-to-grow-a-garden-when-you-dont-have-land/
http://urbanhomestead.org/

FRUGAL GARDENING LINKS AND VIDEOS

http://themicrogardener.com/frugal-gardening-5-thrifty-recycling-ideas/
https://www.pinterest.com/mybjswholesale/frugal-gardening/
http://thehappyhousewife.com/home-management/frugal-gardening-tips/
http://empressofdirt.net/12creativegardenprojects/
http://thecouponproject.com/17-creative-ideas-for-frugal-gardening/
http://www.hillbillyhousewife.com/frugal-gardening-tips.htm
http://www.chickencoopguides.com/find-cheap-free-construction-materials-for-purpose/

By the way, don't forget that if you receive SNAP benefits that you can use those to buy vegetable and fruit seeds. Yes, really!

And in most areas you can go to the local county extension office and ask them for excess supplies they might have or they can usually direct you to community resources that can help you get your garden off the ground.

TIME CRUNCHERS GARDENING LINKS AND VIDEOS

http://www.earth911.com/home-garden/farmyard-garden-profile/ *(these are popping up everywhere so check your city or area)*
https://www.provenwinners.com/learn/container-gardening/gardening-time-starved
http://freshorganicgardening.com/no-time-for-garden-chores-grow-vertically/
http://www.veggiegardener.com/saving-time-vegetable-garden/
http://www.offthegridnews.com/survival-gardening-2/vegetable-gardening-when-you-are-short-on-time/

MISC.

For all your companion planting needs, Wiki knows all:
https://en.wikipedia.org/wiki/List_of_companion_plants
https://attra.ncat.org/attra-pub/viewhtml.php?id=72
http://www.almanac.com/content/plant-companions-list-ten-common-vegetables

LISTING OF THE BEST SEED COMPANIES

1. **BAKER CREEK HEIRLOOM SEEDS**
   2278 BAKER CREEK ROAD
   MANSFIELD, MO 65704
   417-924-8917

http://www.rareseeds.com/
Jere Gettle always had a passion for growing things, and at age 3 he planted his first garden. Thus began his love of seeds, which eventually grew into a desire to be involved in the seed industry. So in 1998, at the age of 17, he printed the first Baker Creek Heirloom Seed catalog. The company has grown to offer 1,800 varieties of vegetables, flowers and herbs—the largest selection of heirloom varieties in the USA. Baker Creek carries one of the largest selections of seeds from the 19th century, including many Asian and European varieties.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes (only one variety)**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes (exotic fruits, sweet potatoes)**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes. Orders of any size are welcome, but we suggest those shipped outside of the U.S., Canada or Mexico keep under $50 to improve shipping success. Shipping cost for international order is 20% of the order total with a $5.00 minimum charge.**
This company sells outside North America: **Yes**

2. BOUNTIFUL GARDENS
1712-D SOUTH MAIN ST.
WILLITS, CA 95490
707-459-6410

http://www.bountifulgardens.org/
Bountiful Gardens started over 30 years ago with the idea that people could grow their own food without weird chemicals, and save their own seed, just as gardeners have done for generations. At the time, the seed industry was replacing old-time, open-pollinated varieties with hybrids developed for agribusiness and long-distance shipping.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **No**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes**
This company sells outside North America: **Yes (Import regulations vary widely on the importing of seeds. Please check with your country's Agriculture Department before ordering, to be certain that they will allow your order to enter. If specific information is required please let us know what information is needed.)**

3. **FEDCO**
   PO BOX 520
   WATERVILLE, ME 04903
   207-426-9900

https://www.fedcoseeds.com/
We are a cooperative, one of the few seed companies so organized in the United States. Because we do not have an individual owner or beneficiary, profit is not our primary goal. Consumers own 60% of the cooperative and worker members 40%. In business since 1978.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **No**
This company sells rare varieties: **No**
This company sells internationally: **Yes (only to Canada)**
This company sells outside North America: **No**

4. **HEIRLOOM SEEDS**
   287 E. FINLEY DR.
   WEST FINLEY PA 15377
   724-663-5356

http://heirloomseeds.com/
Located in South Western Pennsylvania, we are a small, family run seed house that has been in the mail order business since 1988. When we started this business, our first priority was to offer old fashioned vegetables noted for their taste. All of the varieties we offer are open pollinated (non hybrid) and have been grown by generations of backyard gardeners.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **No**
This company sells rare varieties: **Yes**

This company sells internationally: **No**
This company sells outside North America: **No (Only US orders)**

5. JOHNNY'S SELECTED SEEDS
PO BOX 299
WATERVILLE, MAINE 04903
877-564-6697

http://www.johnnyseeds.com/
Started in 1973, Johnny's is a worker-run cooperative where every worker has a voice in the decisions of the company and where workers receive equal compensation regardless of the economic value traditionally placed on the jobs done. Specializes in short season varieties.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes**
This company sells rare varieties: **No**
This company sells internationally: **Yes**
This company sells outside North America: **Yes**

6. NICHOLS GARDEN NURSERY
1190 OLD SALEM RD NE
ALBANY, OR 97321
800-422-3985

https://www.nicholsgardennursery.com/store/index.php
We have been in the seed and nursery business for over 60 years. Our purpose during these years has been to bring people closer to nature through gardening. Nothing can equal the sense of accomplishment of growing hundreds of pounds of vegetables from a few ounces of seeds.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes (Jerusalem artichokes, onions, hops, comfrey, sunroot)**
This company sells rare varieties: **Yes**
This company sells internationally: **No**
This company sells outside North America: **No (No HI, Canadian or foreign orders)**

7. PEACEFUL VALLEY FARM & GARDEN SUPPLY
P.O. BOX 2209
GRASS VALLEY, CA 95945
888-784-1722
530-272-4769

https://www.groworganic.com/
We are dedicated to preserving the environment by providing you with cost-effective, state-of-the-art, organic growing supplies and the information and tools needed to apply them. We strive to provide growers at every level, from home gardeners to commercial farmers, with great service, low prices and the best selection of quality products available.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **Yes (Artichoke, asparagus, rhubarb, horseradish, Jerusalem artichoke)**
This company sells rare varieties: **Yes**
This company sells internationally: **No**
This company sells outside North America: **No**

8. PINETREE GARDEN SEEDS
P.O. BOX 300
NEW GLOUCESTER, MAINE 04260
207-926-3400

https://www.groworganic.com/

Family owned and operated business since 1979, Pinetree Garden Seeds was founded with the simple mission of offering low prices on quality seeds to the home gardener. Over the years offerings have expanded to include over 1300 varieties of seeds, including many Heirlooms & Organics. We have pledged our support to local efforts to label GMO foods and strive to offer an extensive selection of heirloom seeds in an effort to support the ideals of responsible and organic gardening practices.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (but currently only to Canada)**
This company sells outside North America: **No**

9. R.H. SHUMWAY
334 W STROUD ST
RANDOLPH, WI 53956
800-342-9461

http://www.rhshumway.com/

Founded in 1870, this company sells many "old timey" varieties. The catalog is very unusual due to it's oversized pages and old fashioned black and white drawings. The company is owned by Jung.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes**

This company sells rare varieties: **No**
This company sells internationally: **No**
This company sells outside North America: **No (Also only seeds shipped to AK and HI; No Canadian orders)**

10. SAND HILL PRESERVATION CENTER
1878 230TH STREET
CALAMUS, IOWA 52729
563-246-2299

http://www.sandhillpreservation.com/
We are not a large operation and all of the work is done by Linda and me (Glenn) with occasional inputs from outside sources. We are not a wholesale seed company nor are we a large hatchery. We are genetic preservationists that are in this for the genetic diversity of this planet we all call home. We produce all of our own eggs for our hatches, tend all of our own flocks, weed and care for the seed crops and produce around 90% of the seed which we sell.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No (but extensive sweet potato collection)**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **Sweet Potatoes**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (We have always requested that orders from Canada and other foreign countries be sent to us with payment in U.S. DOLLARS ONLY.).**
This company sells outside North America: **Yes**

11. SEEDS OF CHANGE
PO BOX 4908
RANCHO DOMINGUEZ, CA 90220
888-762-7333

http://www.seedsofchange.com/home.aspx

Founded in 1989 with a mission to make organically grown seeds available to gardeners and farmers while preserving rare heirloom and traditional seed varieties and promoting sustainable organic agricultural practices.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **Yes (onions, shallots, peach, rhubarb, horseradish, asparagus, garlic, fruit)**
This company sells rare varieties: **No**
This company sells internationally: **Yes (only to Canada)**
This company sells outside North America: **No**

12. SEEDS TRUST
5870 S. LONG LANE
LITTLETON, CO 80121
720-335-3436

http://secure.seedstrust.com/
30 year-old family seed company dedicated to teaching you to save your own seeds, grow a delicious home garden and create stunning native landscapes. We sell heirloom seeds (passed on from generation to generation), open-pollinated seeds (will reproduce true to form) and organic vegetable, native wildflower, native grass and medicinal herb seeds.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **No**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (Ships to Canada and Mexico; other countries depending on seed export laws; contact for more information)**
This company sells outside North America: **Yes**

13. SOUTHERN EXPOSURE SEED EXCHANGE
P.O. BOX 460
MINERAL, VA 23117
540-894-9480

https://www.southernexposure.com/
We emphasize varieties that perform well in the Mid-Atlantic and Southeast, although gardeners and farmers from all over the country grow our seeds. We offer many unusual, Southern heirlooms, including peanuts, southern peas, naturally colored cotton, collards, okra, roselle, turnip greens, corns for roasting and meal, and butterbeans.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **No**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (but only to Canada and Mexico)**
This company sells outside North America: **No**

14. SOW GOOD SEED
146 CHURCH STREET
ASHEVILLE, NORTH CAROLINA 28801
828-254-0708

http://sowtrueseed.com/
Founded in 2008 by lifelong gardener and food activist Carol Koury, Sow True Seed provides open-pollinated, heirloom and organic vegetable, herb, and flower seeds to enthusiastic home gardeners and small market farmers. We are motivated by Carol's vision of empowering individuals to become more self-sustainable and less dependent on multi-national food corporations which may not have our best interests in mind.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **Yes**
This company sells plant starts: **Yes**
This company sells rare varieties: **Yes**
This company sells internationally: **Canada only**
This company sells outside North America: **No**

15. SUSTAINABLE SEED COMPANY
PO BOX 636
PETALUMA, CA 94952
877-620-SEED

www.SustainableSeedCo.com
Our family owned Seed Company provides gardeners with over 1875 varieties of organic and heirloom seeds. Discovering "new" heirloom seeds is one of our passions. We hope to preserve this part of history and believe that with the continuing encroachment from large producers of hybrid and GMO seeds, that companies such as our own, along with our customers, may be a crucial link to saving the future of food.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **No**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (We do ship seeds internationally. We also offer a phytosanitary certificate which may be required by your country's customs laws.)**
This company sells outside North America: **Yes**

16. TERRITORIAL SEED COMPANY
PO BOX 158
COTTAGE GROVE, OR 97424
800-626-0866

http://www.territorialseed.com/
The first territorial Seed catalog was written in the fall of 1979 by Steve Solomon. He grew a serious trial ground in both summer and winter to find the highest quality seeds. Tom and Julie Johns purchased the company in 1985. They have grown the business substantially over the past 30 years but have never strayed far from the original course set by Steve.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **Yes**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (Certain size seed packets only; additional fees charged; they do not provide phyto-sanitary certificates).**
This company sells outside North America: **Yes**

17. THE GOOD SEED COMPANY
6475 HIGHWAY 93S, SUITE 52
PO BOX 4906
WHITEFISH, MT 59937
496-471-3284

www.goodseedco.net
Founded in 1980. One hallmark of the company is their "homestead friendly" seeds: varieties with multiple attributes such as varieties that are useful as both food plants and dye plants, or a good companion plant as well as a medicinal.

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **No**
This company sells medicinal herb seeds: **Yes**

This company sells plant starts: **No**
This company sells rare varieties: **No**
This company sells internationally: **Yes (Currently we ship to all 50 states, Puerto Rico, the US Virgin Islands, and Canada with a flat shipping rate. For all other countries, please contact us)**
This company sells outside North America: **Yes**

18. THE NATURAL GARDENING COMPANY
P.O. BOX 750776
PETALUMA CA 94975
707-766-9303

http://www.naturalgardening.com/
This is the oldest certified organic nursery in the US. Our goal is to provide you with the finest quality seeds and plants. We know your time is limited and results matter, so our product selection is aimed at quality, not quantity

This company sells heirloom and/or open pollinated seeds: **Yes**
This company sells seed potatoes: **Yes**
This company sells medicinal herb seeds: **No**
This company sells plant starts: **Yes**
This company sells rare varieties: **Yes**
This company sells internationally: **Yes (Sells to international commercial growers; contact for info. Website has a page in Japanese)**
This company sells outside North America: **Yes**