How’s it Growing: From Seed to Harvest

When it comes to growing your own food there are really just 5 major components.

- Planning
- Planting
- Maintaining
- Harvest
- Keeping Records.

Within each of these 5 major components are your foundational questions to help guide you through the process.

- Who
- What
- When
- Where
- How
- Why

These 6 questions will allow you to keep track of your progress and advance your journey. In Florida we have two major growing seasons, warm and cool. As a humid subtropical region we can grow most crops year-round.

One of the first steps is knowing and understanding your why. Most people choose to grow their own food for the following reasons.

- Eat healthy
- Save money
- Reduce Diet related health diseases
- Address food insecurity

The reason behind your why will be your motivation to seeing your journey through to completion.

When deciding how you want to grow your own food you need to understand the various practices of cultivation. Your physical capabilities, available growing space, and financial capacity will determine what your operation looks like and what you are able to actually grow. Your choice will also dictate the level of maintenance required to sustain your operation.

Growing food requires time and dedication. When making the decision to grow you will need to commit at least 4 - 10 hours a week to observe and maintain your garden.

When deciding where to grow ensure there is 6-8 hours of full or partial sunlight available or provided. When deciding what and when to grow refer to the yearly growing calendar. Growing in a controlled climate allows you to manipulate the growing process however some seeds are not easily tricked by temperature modifications.

With most operations, access to water is required as are nutrients to feed their growth.

High Tunnels: Extending the Growing Season

- **Growing Season Extension**

A high tunnel greenhouse allows growers to produce in-ground crops for a longer period during the year. It protects crops from cold temperatures and frost, as well as overly rainy seasons. This lets growers start planting very early in the spring and harvest well into the fall.

- **Reasonable Price, Quick Return On Investment**

Since Grow Span High Tunnels are manufactured in-house, they are able to be economically priced. Despite the reasonable price, they are still strong and ultra-dependable.

These structures are built from 14 gauge, American-made steel, and they have been triple-galvanized to ensure corrosion resistance. The economical price, combined with the high tunnel's superior functionality, allows growers to get a quick return on their investment. Grow Span High Tunnels can reap payback with most crops in just two to three years.

- **Easy To Relocate**

High tunnel structures are very simple to assemble and disassemble. They usually only require unbolting the rafters from the ground posts, removing the cover and moving the structure to a new location.

The ground posts can be reused, but it is often times easier to order new ones. Once the structure is relocated, install the ground posts, bolt on the rafters and put the poly covering back on.

- **Simple To Expand**

Lengthwise, Grow Span high tunnels can be extended infinitely with little complication. This allows the structure to adapt to each operation's specific needs. As their business grows, so can the structure.

- **Straightforward Construction**

High tunnel benefits also pertain to their construction. They are easy to build and can typically be erected with just a couple people.

These high tunnels come with instructions, and there are a number of how-to videos on **YouTube**. Greenhouse Specialists are also available to help with any troubleshooting.

- **Increased Yields**

Many studies have proven that, compared to an open-field setting, high tunnels provide an improved growing environment where crops can grow more vigorously. The structures offer greater control over essential inputs, like water, fertilizer and temperature. The protection from harsh weather can also reduce crop loss, allowing growers to get more crops to market.

- **Reduced Need For Pesticides**

The protected environment in the high tunnel also leads to a reduced occurrence of insect and mite pests. Additionally, it creates a less hospitable environment for diseases, reducing the occurrence of outbreaks. This allows growers to limit their dependence on pesticides and other chemicals.

- **Supports Soil Health**

The health of an operation’s soil directly affects their ability to be successful. High tunnels keep the ground covered, so rainwater does not cause runoff.
This allows the soil to retain any fertilizers or nutrients that it has absorbed, which helps plants thrive

- **Allows For Crop Diversity**

Grow Span High Tunnels have been used all over the country, and the diversity of crops seems endless. They allow growers to experiment with early varieties and can also allow for multiple crop rotations within the growing season. Operations have found success cultivating a variety of crops, including leafy greens, vegetables, blueberries, cherries, grapes and much more.

- **Easy To Ventilate**

In a high tunnel or hoop house, growers benefit from convenient air circulation, without having to install extensive ventilation systems. Most Grow Span high tunnels include either Roll-Up or Drop-Down Sides, both of which provide easy manual ventilation.

The main advantage of Drop-Down Sides is where the air comes into the hoop house, and the temperature of the air. The air enters the structure above the plants, and as the air becomes warm, it rises. The plants themselves are not exposed to cold air.

Roll-Up Sides are a little easier to maintain, and last longer because they are rolled up with a hand crank, keeping them off the ground and out of the way. Since Drop-Down Sides are on the ground when they are in the down

position, they tend to collect water and get dirty. The main disadvantage of Roll-Up Sides is that early in the morning, when the tunnel is opened, cold air comes in at the plant level.

Hügelkultur

What do you do when you have a small, wooded area with lots of fallen branches and dead wood, three horses that poop a lot and a desire for raised garden beds? You build a Hügelkultur garden. **Hügelkultur**, pronounced Hoo-gul-culture, means hill culture or hill mound.

It's literally a raised garden bed that is built from the bottom up with logs, sticks and branches, wood chips, grass clippings, manure, leaves, food scraps, eggshells, coffee grounds… everything you would put into a compost heap. Top it all off with a layer of topsoil and/or more compost and you are ready to plant.

The way it works is that as the wood decays it retains moisture and supplies nutrients to the mound. The decaying wood provides a home to the beneficial soil bugs that help break down organic matter. In the first few years the soil will warm from the decay going on so your growing season will be longer too. It has been proven to work in the desert as well as an urban backyard. It also is a great way to use dead and fallen trees that otherwise would get burned or go to a landfill.

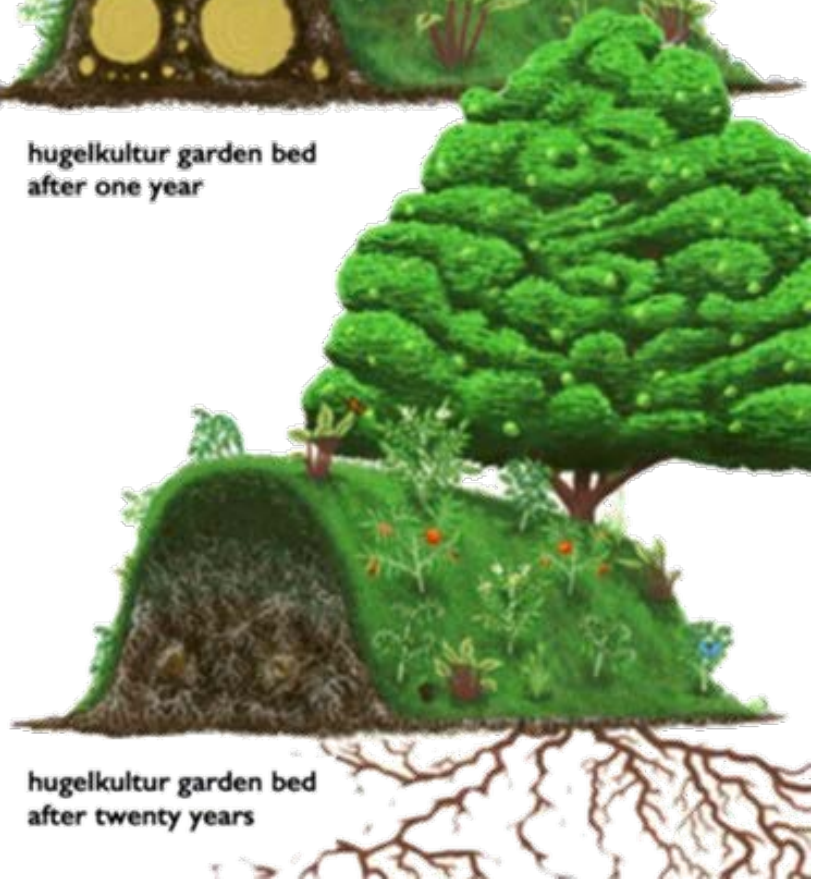
There are a few rules to building your Hügelkultur, but they are basically the same rules you would follow if building a compost pile. No Black Walnut or Black Cherry, no dog or cat waste (but horse and cow is encouraged), no grass clips from a treated lawn (that goes for leaves too), and don't put weeds that have gone to seed (unless your goal is to grow weeds). Cedar and Pine are not good to use because they tend to not break down and discourage microbial activity. Don't ever use treated

wood. The deader the wood the better. You can build your mound free standing, enclosed or underground.

hugelkultur garden bed
after one month

hugelkultur garden bed
after one year

hugelkultur garden bed
after two years



hugelkultur garden bed
after twenty years

Integrated Pest Management (IPM) Systems: Companion Planting

What is Companion Planting:

The establishment of two or more plant species in close proximity so that some cultural benefit that cultural benefit that results in higher yields is derived.

7 Benefits

1. **Deterring pests**: Certain plants act as insect repellents or deter critters. For example, garlic's smell is unappealing to many pests.
2. **Attracting beneficials**: Some plants also attract beneficial insects. For example, borage attracting pollinating bees and tiny pest-eating wasps.
3. **Shade regulation**: Large plants provide shade for smaller plants in need of sun protection. For example, corn shades lettuce.
4. **Natural supports**: Tall plants, like corn and sunflowers, can support lower-growing, sprawling crops such as cucumbers and peas.
5. **Improved plant health**: When one plant absorbs certain substances from the soil, it may change the soil biochemistry in favor of nearby plants.
6. **Improving soil fertility**: Some crops, like beans, peas, and other legumes, help to make nitrogen more available in the soil. Similarly, plants with long taproots, like burdock, bring up nutrients from deep in the soil, enriching the topsoil to the benefit of shallow-rooted plants.
7. **Weed suppression**: Planting sprawling crops like potatoes with tall, upright plants minimizes open areas, where weeds typically take hold.

Companion Planting Chart

Crop Name	Companions	Benefits and Notes
ASPARAGUS 	Calendula Petunias Tomatoes	**Calendula**, **tomatoes**, and **petunias** are thought to deter asparagus beetles.
BASIL 	Peppers Purslane Tomatoes	**Purslane** is used to shade the soil around basil plants, helping them to remain fresh in hot weather. Basil improves the growth and flavor of **tomatoes** and **peppers**.

Crop Name	Companions	Benefits and Notes
BEANS 	Beets Corn Lovage Nasturtium Rosemary Squash Strawberries Sunflower	**Nasturtiums** can be used as a trap plant to entice aphids away from beans. **Lovage** and **rosemary** also have excellent insect repellent qualities. **Sunflowers** can be used to create shade for sun-stressed crops. **Corn** will benefit from the beans' nitrogen-fixing capabilities. Pole beans provide structural support.
BEETS 	Brassicas Bush beans Garlic Lettuce Onion family	Beets are companions for **chicory** and **endive**. **Onions** protect against borers and cutworms. Beets adds minerals to the soil, as beet leaves are composed of 25% magnesium.
BROCCOLI 	Oregano Other Brassicas (Cabbage, brussels sprouts, cauliflower, etc.)	**Oregano** has insecticidal properties. Plant **Brassicas** together so that they can all be covered with nets to protect from pests such as cabbageworm. They also all like lime added to the soil.

Crop Name	Companions	Benefits and Notes
CABBAGE 	Garlic Nasturtium Sage	**Nasturtiums** deter insect pests such as beetles and aphids. **Garlic** planted alongside cabbage repels insects with its odor. **Sage** deters cabbage moth.
CARROTS 	Chives Leeks Onions Peas Radishes Rosemary Sage	**Chives** improve the growth and flavor of carrots and deter aphids, mites, and flies. **Rosemary** and **sage** repel carrot fly. **Leeks** are thought to repel many flying pests (including carrot rust fly). ***Foes:*** *Dill can reduce the yield of carrots.* *Dill, coriander, and other members of the* ***Carrot family*** *should not be planted near carrots (they tend to cross pollinate).*
CORN 	Beans (pole) Cucumbers Dill Melons Peas Squash Sunflower	**Dill** is thought to protect against aphids and mites. **Beans** can provide more nitrogen to the corn. **Sunflowers** can act as a structure and a windbreak for the corn, and **dwarf sunflowers** bring in ladybugs to control aphids. **Pole beans** are sometimes interplanted with corn, adding nitrogen and providing structural support. **Spinach** grows well in the shade of corn, keeping corn roots cool.

Crop Name	Companions	Benefits and Notes
CUCUMBERS 	Beans Borage Dill Lettuce Nasturtiums Oregano Radish Sunflowers Tansy	**Dill** is thought to protect against aphids and mites. **Nasturtium** deters aphids, beetles and bugs and improves growth and flavor. **Oregano** deters pests in general. **Radish, Nasturtium,** and **Tansy** repel cucumber beetles; radish also repels flea beetles. Tansy also deters ants, beetles, bugs, flying insects, as does borage, improving flavor and growth.
LETTUCE 	Chives Onions Oregano Peas Poached Egg plants Radishes Scallions Zinnia	**Chives**, **onions**, and **garlic** deter aphids and other pests by masking the scent of the lettuce with their aroma. **Basil** is thought to improve the flavor and growth of lettuce. **Radishes** can be used as a trap crop for flea beetles. **Poached egg plants** *(Limnanthes)*, a wildflower, will bring hoverflies and other beneficials that eat aphids.
ONIONS 	Beets Cabbage Carrot Chard Lettuce Strawberry Tomatoes	**Onions** protect against borers and cutworms. Their aroma disorients pests. **Onions** benefit from **marigolds** as the smell of marigolds reduces the egg laying of onion maggot fly.

Crop Name	Companions	Benefits and Notes
PEAS 	Alyssum Carrot Chives Corn Grapes Lettuce Mint Radish Spinach Turnip	**Chives** deter aphids. **Mint** improves health and flavor. **Alyssum** brings in pollinators and encourages green lacewings, which eat aphids. ***Foes**: Do not plant near **garlic** and **onion**, as they will stunt the growth of peas*
PEPPERS 	Basil Marjoram Onions Oregano	Herbs like **basil**, **oregano**, and **marjoram** have a protective, insecticidal quality.
POTATOES 	Basil Beans Calendula Catmint Cilantro Garlic Horseradish Oregano Peas Tansy	**Beans** can improve the size of potato tubers. **Cilantro** protects against aphids, spider mites and potato beetles. **Calendula**, **tansy**, and **horseradish** planted at the corner of a potato patch wards off Colorado potato beetles. (**Note:** Tansy is considered invasive in some areas. See local guidelines before planting.) **Catmint** also repels Colorado potato beetles, but can bring cats into the vegetable garden, so it is a good idea to plant it in pots around the edge of the plot.

Crop Name	Companions	Benefits and Notes
RADISHES 	Chervil Lettuce Nasturtium Peas	**Chervil** improves growth and flavor. **Nasturtiums** are a good trap crop for radishes. **Radishes** are often used as trap crops for flea beetles. **Peas** give nitrogen to the soil which benefits radishes.
WINTER SQUASH and **PUMPKINS** 	Beans (pole) Buckwheat Calendula Corn Marigold Nasturtium Oregano	**Buckwheat** brings in pest predators which reduce insect pests. **Nasturtiums** protect against pumpkin and squash beetles. **Oregano** provides general pest protection. **Calendula** deters beetles and root nematodes. **Squash** is traditionally planted with corn and beans ("three sisters") to disorient the adult vine borer.
SPINACH 	Beans Cilantro Eggplant Oregano Peas Rosemary Strawberries	**Peas** and **beans** provide natural shade for spinach. **Cilantro, oregano**, and **rosemary** is thought to repel insects.

Crop Name	Companions	Benefits and Notes
TOMATOES 	Asparagus Basil Borage Calendula Dill Garlic Nasturtium Onion Parsley Thyme	**Calendula** deters general garden pests **Asparagus** repels nematodes. **Basil** repels whiteflies, mosquitoes, spider mites, aphids. Basil also attracts bees, which improves pollination, tomato health, and flavor. **Borage** repels hornworms. **Dill** makes it difficult for cutworms to lay their eggs and supports parasitic wasps that attack pest caterpillars. **Thyme** reduces egg laying by armyworms.
ZUCCHINI/ SUMMER SQUASH 	Buckwheat Oregano Nasturtium Zinnia	**Buckwheat** brings in pest predators which reduce insect pests. To attract pollinators, plant **oregano** and **zinnias**. **Nasturtium** protects against aphids and whiteflies.

Irrigation: Cultivation Water

What is Irrigation

Irrigation is the artificial application of water to the soil through various systems of tubes, pumps, and sprays. Irrigation is usually used in areas where rainfall is irregular or dry times or drought is expected.

4 Benefits of Irrigation Systems

When you water by hand, more than 50% of the water is wasted through runoff or evaporation. Automatic irrigation settings, by comparison, offer multiple benefits to reduce your water supply usage, therefore conserving resources while reducing your costs.

Saves you water and time

Both sprinkler and drip irrigation systems can be set to daily or weekly watering, as well as timed for specific hours during day or night. The system will also automatically shut the water off when the irrigation process is complete. By having an automated system to distribute your water supply, you do not have to be physically present for the water system to be effective. The automatic shut off will keep your water usage to a minimum, and lower your costs since less water will be used.

Reduces weed growth

By installing an irrigation system specifically designed for your landscape, only areas that truly need water will receive it, thus limiting your potential weed growth. Drip irrigation systems are particularly efficient at this: the system directs water specifically to each plant's roots, rather than sprinkling over the entire garden.

Improves plant growth

Plants will grow faster and greener when watered with smaller amounts of water over a longer period, which is exactly what irrigation systems are designed to do. Installing an irrigation system will improve your plant growth significantly.

Preserves soil nutrients

Watering by hand often leads to excess water seeping into the soil. Water runoff seeps into the soil and carries precious nutrients away from your plants. Using a hose can also compact your soil, leading to plant suffocation or root disease. Using an irrigation system will preserve your soil structure and keep your plants absorbing nutrients, not the runoff water.

After learning about the advantages of irrigation systems, your next question is probably this: how do I install one?