



Gardening 101: The Humble Art of Growing Things

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Agenda

- **What we will cover in this series:**
 - **Soil**
 - **Water**
 - **Light (Sun)**
 - **Mulch**
 - **Fertilizing**
 - **Pests**
 - **Plants & Flowers**
 - **Ideas for gardens**
 - **Seed Sourcing & Supplies**

Soil

Soil is composed of air, water, minerals & decaying organic matter (NOT DIRT!)

Texture is determined by the proportions of sand, silt & clay present

- Sand filters water so does not hold moisture
- Clay retains water which can cause root rot/drowning

Soil Amendments (Know your soil first!)

➤ **Compost is the KEY!**

- Compost adds decaying organic matter and nutrients
- Makes better soil texture
- Adds 'air' pockets as breaks down & helps retain moisture
- Types of compost
 - Worm castings (Vermiculture)
 - Mushroom compost
 - General compost
 - Home compost
 - Manure is NOT compost!
- Expanded Shale is used to add more air pockets to soil
- Do not use Sand – it will slowly sink, not help texture, no water retention



Water

Things to Consider

1. **Location** of your water source – closer is better
2. **Water quality** – too much chlorine harms plants
3. ***WHEN to water*** is important
 - Water in early AM or around dusk to decrease water evaporation
 - Do not water directly on plants at any time
 - Heat of day can cause plants to scorch
 - Other times causes mildew or fungus on plants
4. **HOW to water** is important
 - Know the plants needs (average, moist, drought tolerant)
 - Water at the roots of a plant and a few inches out
 - Water DEEPLY & less often helps establish stronger root systems, protecting the plant while watering more frequently & less makes for a weaker plant
5. **Drip Irrigation is best**
 - This is the recommended way to water as it allows control over watering, keeps water at the base of a plant & can water for a longer period less often



What else is growing near your beds??



Water

Checking moisture levels

DO NOT GUESS!

Plants will look the same if they are OVER watered or UNDER watered... you will not know what killed it if you not check

Mentions of checking moisture levels

- Finger Test – insert finger into soil at least 2” or more to check moisture levels
- Moisture Meter – my Preferred mention
 - Remember roots grow down as well as out so it is important if there is water under the 2” level of your soil



Light (Sun)

Know your Yard 1st!

- What is the direction of your yard/beds?
- Where does the sun rise & set?
- Do the bed receive morning sun, afternoon sun and/or evening sun?
- What kind (if any) shade is there?
 - Is there a Tree near by?
 - Is there a Fence or building near by?

What does the plant need?

- Read the tag – plant tags should list requirements on it.
- Look it up

Light (Sun)

Let's talk about Sun

- **Full sun** - 6+ hours of sun/no shade
- ***Sun** – 6 hours or less of sun
- **Part Sun** – 3 - 5 hours of sun & <4 hours of shade daily (also called Light Shade)
- **Partial Shade** – 2 hours or less of direct sun
- **Shade or Dense Shade** Think deep forest or little to no sun





Mulch

Why is mulching important?

- Helps retain moisture in the soil
- Helps keep the soil cool for roots
- Breaks down to add nutrients & organic matter increasing soil texture
- Promotes microfungal support

How to mulch

- For seedlings – light layer 2” outside of stem & add as plant grows
- For plants
 - Keep it away from base of plant (1” or so)
 - Start w/ at least 3” each planting



Mulch

Types of Mulch

- Hardwood mulches
 - Box stores
 - ChipDrop (more for paths/landscaping)
- Pine Needles/Straw
- Leaves
- Straw (not hay)
- Cover Crops (winter to fix nitrogen)
- Hardscape (not around veggies)

Considerations:

- Hardwoods, leaves & straw can become hydrophobic so watch
- Colored hardwood will lose color
- Cover crops will compete for water
- Do not recommend hardscape around Veggies

Fertilizer



Types of Fertilizer

- Organic vs Synthetic
- Specific Applications (veggies vs roses vs grass)
- Vermicompost (worm poop!)
- Mushroom compost
- General compost
- Home Compost (no meats, fats, oils)
- Manure – NOT COMPOST

The Numbers for Organic & Synthetic Fertilizers

- There are typically 3 #s on a bag of compost (N-P-K)
 - 1st # is Nitrogen – green growth
 - 2nd # is Phosphorus – root development
 - 3rd # is Potassium – strengthens roots; helps environmental stressors
- Know your soil, know your plants, know your needs

Fertilizer

Notes on Fertilizer

- Best is always compost
- Slow-release fertilizers are not worth the \$\$ here in the south
- Apply per directions near/around base of plants each growing season
- Water in after application but do not over water



My Recommendations

- Compost!!!
- Microlife Multi-purpose for all plants
- When I plant new plants, I add Bio-Tone to each planting
- FoxFarms Grow Big for seed starting
- Any Espoma or FoxFarms fertilizers
- Dried Molasses really feeds the soil buddies so great for that
- Seaweed fertilizer is a great natural fertilizer

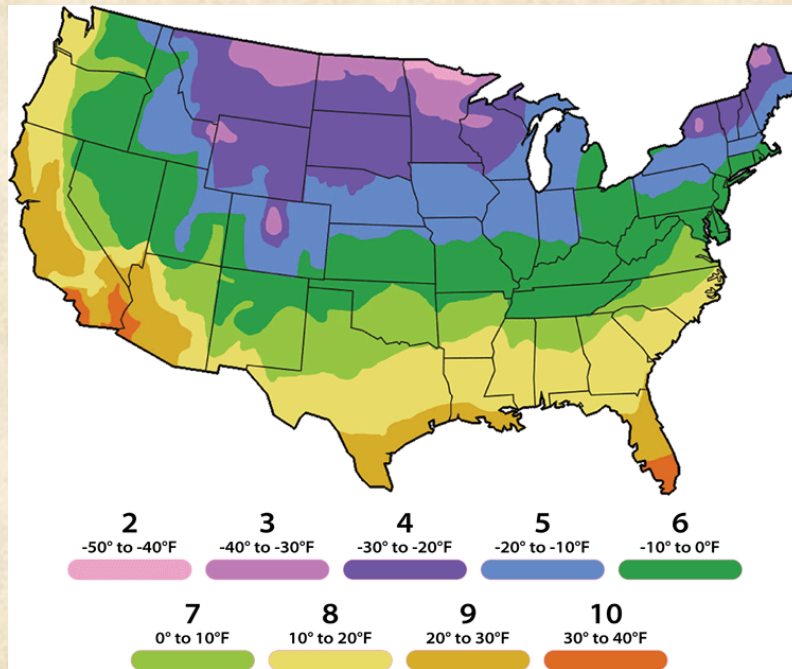
Insect Management

Pesticides kill ALL bugs... the good & the bad

- Predatory bugs are part of a well-balanced ecosystem
- Look for other alternatives 1st
 - Companion Planting
 - Crop Rotation
 - Pulling infected plants
 - Supporting Predatory bugs (water, shelter, etc.)
- If spraying is necessary, consider
 - Spraying/treating ONLY the part of the plan/area affected
 - Try to limit use of pesticides



US Zones or Plant Hardiness Zones



Average Annual Extreme Minimum Temperature 1976-2005

Temp (F)	Zone	Temp (C)
-60 to -50	1	-51.1 to -45.6
-50 to -40	2	-45.6 to -40
-40 to -30	3	-40 to -34.4
-30 to -20	4	-34.4 to -28.9
-20 to -10	5	-28.9 to -23.3
-10 to 0	6	-23.3 to -17.8
0 to 10	7	-17.8 to -12.2
10 to 20	8	-12.2 to -6.7
20 to 30	9	-6.7 to -1.1
30 to 40	10	-1.1 to 4.4
40 to 50	11	4.4 to 10
50 to 60	12	10 to 15.6
60 to 70	13	15.6 to 21.1

- Hardiness zones are about the COLDEST temps typically in an area
- Does not account for heat, rainfall, humidity
- Each zone covers a 10 degree range

Why Zones Matter

PLANT ZONE HARDINESS

- Zones are based on the winter temperatures of an area
 - Each zone covers a 10-degree range
- This is to help determine if a plant can survive the winters in an area
- Why Zones Matter?
 - Perennials, shrubs & Trees can come back year after year so need to be able to survive and thrive in winter climates
 - Annuals & vegetables – frost dates matter here and are specific to zones
 - Microclimates in your yard are also a factor
 - Sun exposure, wind, urban heat islands, etc.



Zones

ZONE	Ave Minimum Winter Temp	Sample Hardy Plants
3	-40 to -30 F	Extremely cold-tolerant perennials & early crops that can handle harsh winters (Peonies, Delphiniums, Columbines)
4	-30 to -20 F	Cold-hardy flowers & shrubs thrive w/ reliable snow cover for insulation (Lilacs, Coneflowers, Hellebores)
5	-20 to -10 F	Protect tender shoots from late frost (Bleeding Heart, Astilbe, Coral Beels)
6	-10 to 0 F	Mixed gardens of perennials, shrubs & hardy ornamentals (Hydrangeas, Sedum, Black-eyes Susan)
7	0 to 10 F	Mild winters allow for some tropicals & flowering shrubs (Lavender, Camellia, Crepe Myrtles)
8	10 to 20 F	Warmer climate supports evergreen shrubs, citrus, & long-blooming ornamentals (Gardenia, Fig tree, Agapanthus)
9	20 to 30 F	Tropicals, succulents and heat-loving plants w/ some annuals growing year-round (Citrus, oleander, Bougainville)
10+	30 F+	True tropical climate w/ lush foliage & exotic flowers year-round (Banana, Bird of Paradise, Hibiscus)

Keep in mind some plants can live in different regions during different times of the year 8b (D/FW) – can seed/plant cold tolerant flowers in the fall for Spring blooms, but the Plants will be done around May or so when it starts to get hot.

How to Read a Plant Tag

Front

Back

Sun Exposure
Number of hours of sunlight needed per day

Common Name

Scientific Name
Plant's genus and species

Bloom Season
When you can expect the plant to bloom



Water

Let the soil dry out in between waterings

Let the soil dry an inch below the surface between waterings

Keep the soil moist constantly

Average Size

Maximum height and width when fully grown

Spacing

How much space to leave in between plants in a garden

Hardiness

Ability to withstand adverse growing conditions

Zone

Area of the country where the plant grows best

Fertilization

How often to fertilize

Bee Hazard Warning

Remember to check the warning labels on pesticides before application

Mounding Growth

How the plant grows, either vertically, horizontally or both

Animal Resistance

Certain animals (deer, rabbits) prefer other plants



Getting Started

- Pick your place: ground bed, raised bed, etc.
 - Size and depth of soil matter for the plants
- Check your soil
 - If clay, consider adding compost & a good organic soil
 - If raised beds, consider hügelkultur to cut down on cost of soil/compost
- Know the plants
 - Track the plants size so you know the space needed for each plant
 - Is the plant a bushing squash or vining variety? Add trellis
 - Root system: root vegetables need more depth than a pepper plant
 - Do the plants in the bed all need the same amount of water & nutrients
 - Look up companion planting as some vegetables will not thrive near others (Nightshades should not be planted together; Peppers & brassicas compete for nutrients)

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Seed Sources:

- Botanical Interest - www.botanicalinterests.com
- Ferry-Morse - <https://ferrymorse.com/>
- Johnny's seeds - www.johnnyseeds.com/
- Baker Creek Seeds - <https://www.rareseeds.com/>
- TomatoFest - <https://www.tomatofest.com/>
- Burpee - <https://www.burpee.com/>
- Seed Therapy - seedtherapy.com/

Indoor Seed Starting Supplies:

- Plant Lights (<https://www.amazon.com/dp/B07LGTJQ2S?tag=dallasgarden-20&th=1>)
 - Small bungee cords to help raise/lower lights
(https://www.amazon.com/dp/B0D9CZ7Q2L?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_3)
- Miracle Growth Cactus, Palm & Citrus Potting Mix (not seed starter mix)
- Vermiculite
- Seed starting trays
 - <https://www.amazon.com/dp/B07R9S38VX?tag=dallasgarden-20&th=1>
 - https://www.amazon.com/gp/product/B07BLRZQW?tag=dallasgarden-20&ref_=as_li_ss_tl
- Heating mats (<https://www.amazon.com/dp/B074753J5V?tag=dallasgarden-20&th=1>)
- Garden marker (<https://www.amazon.com/dp/B01FOG9KWI?tag=dallasgarden-20>)
- Plant tags (<https://www.amazon.com/dp/B01HTDDFKW?tag=dallasgarden-20&th=1>)
- FoxFarm Grow Big Fertilizer

Other Recommended Supplies

- Espoma Bio-Tome Starter
- Moisture Meters
 - https://www.amazon.com/dp/B07DM4LS1D?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_5&th=1
 - https://www.amazon.com/dp/B0C7GXZLVK?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_5&th=1

Fertilizers:

- Microlife Multipurpose 6-2-4 Fertilizer
- Espoma is a great fertilizer with different applications
- FoxFarm Happy Frog series

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