THE UNIVERSITY OF VERMONT
EXTENSION
MASTER GARDENER

Beginning Gardening

Milton Public Library
April 6, 2021

A Few Key Questions to think about!

- What foods do my family and I love to cook and eat with?
- What is easy to grow for a beginner?
- How much sunlight do I have?
- Where should I plant the garden?
- Do I want to use containers, mounded beds or wooden raised beds?
- What is the quality and composition of my soil?
- What are the first and last frost dates in my area?
- When do I plant each type of crop?
- How much time and energy do I have to devote to this endeavor?

- Radishes, tomatoes, peppers, carrots, chard, lettuce and beans are easy to grow for a beginner.
- Broccoli, carrots, kale, mustard, beet and turnip greens, spinach, winter squash, tomatoes are the most nutrient dense.
- Carrots, parsnips, winter squash, dry beans, onions, herbs (dried) and potatoes store well.

Where Oh Where will my garden grow?

It's all about Location, Location, Location!

- Choosing a site
  - Sunlight – 6 to 8 hours a day
  - Soil – well drained fertile soil
  - Surrounding vegetation – Trees and shrubs compete with moisture and nutrients
  - Convenience – Water source, ease of maintenance and harvesting

Sunlight in the garden

6+ hours of full sun for warm season crops

4-6 hours full sun for cool season crops

Note the position of the sun and how it might change over the course of the growing season.

Soil and Soil Types

Soil is formed when rock is broken down by climate and vegetation over a period of time. Soil is weathered rock fragments and decaying remains of plants and animals also known as organic matter (OM). It contains varying amounts of air, water, and micro-organisms and furnishes mechanical support and nutrients for growing plants.

- Soil types are defined by the texture of the soil or the fineness/coarseness of the mineral particles in the soil.
- Sand has coarser mineral particles and feels rough when rubbed between he thumb and fingers.
- Clays are the finest soil particles. They feel extremely smooth when dry and become slick and sticky when wet. Clay will hold the form into which it is molded.
- Silt is fine soil particles that feels smooth and floury. When wet, silt feels smooth but not slick or sticky. When dry, it is smooth and if pressed between the thumb and finger, will retain the imprint.
- Loam is a textual class of soil that has moderate amounts of clay silt and sand. Loam contains approximately 7% to 27% clay, 28% to 50% silt and 50% sand.

Sand

- **Sandy soil** is easy to spot by its feel. It has a gritty texture and when a handful of **sandy soil** is squeezed in your hand, it will easily fall apart when you open your hand again.

Clay

- **Clay soil** has the finest soil particles so it has good water storage qualities. It's sticky to the touch when wet, but smooth when dry. ...
- If moistened **soil** feels sticky, rolls up easily, and forms into a ball or sausage-**like** shape, then you've got yourself **clay**.

Silt

Silt soil is fine and feels almost floury to the touch when dry. When wet, it becomes a smooth mud that you can form easily into balls or other shapes in your hand. When **silt soil** is very wet, it blends seamlessly with water to form fine, runny puddles of mud.

Loam

Loam is soil composed mostly of sand, silt, and a smaller amount of clay. By weight, its mineral composition is about 40–40–20% concentration of sand–silt–clay, respectively.

Why is soil texture important?

- The **texture** of a **soil** is **important** because it determines **soil** characteristics that affect plant growth. Three of these characteristics are water-holding capacity, permeability, and **soil** workability. Water-holding capacity is the ability of a **soil** to retain water.
- **Permeability** refers to the movement of air and water through the **soil**, which is **important** because it affects the supply of root-zone air, moisture, and nutrients available for plant uptake.

Soil Drainage

- Water drains quickly indication of a sandy soil.
  Trouble keeping you garden moist.
- Water drains very slowly indication of clay. Water puddles when wet and cracks when dry.

Simple Percolation Test

- Dig a hole 12 inches deep
  and 12 inches across
- Fill the hole with water and let it drain
- Fill the hole again with water and measure the change in water level every hour.
- Ideally a well drained soil will drain 2 inches every hour.

Amending the Soil

Organic Matter

Organic Matter (Humus)

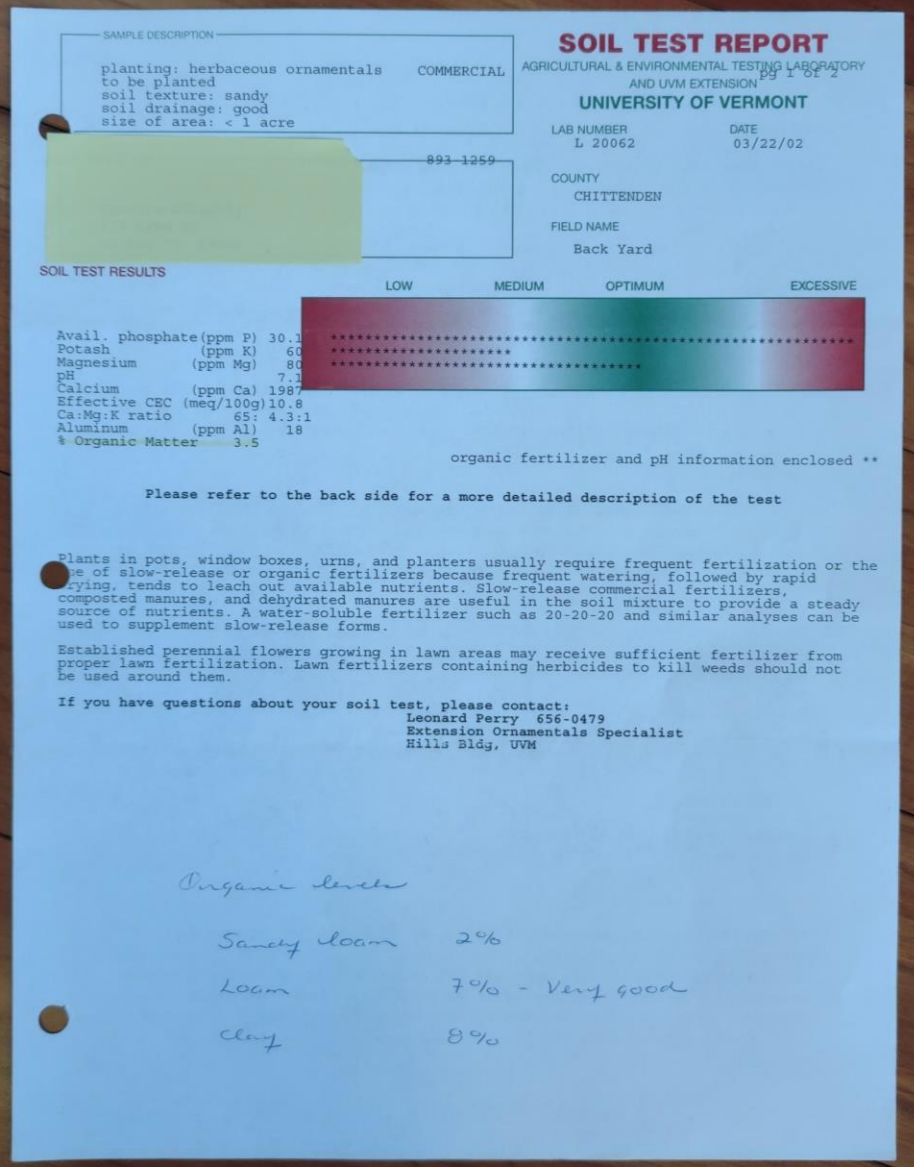
- Improves plant growth
- Has high water holding ability
- Good for storing nutrients and is useful for micro-organisms
- Binds tiny soil particles and improves soil structure
- Brownish/black color that absorbs heat

What is Organic Matter or Humus

- Soil **organic matter** (SOM) is **made** up of living plants and animals (roots, fungi, bacteria, macro fauna and micro fauna), plant litter, and all the degraded material from decomposing plant and animal material (manure).

Other considerations for location of your garden

- Location of trees and shrubs around the garden area – Competition for moisture and nutrients.
- Convenience – Water source
  Ease of maintenance
  Harvesting
- History of Site
- Septic system and leach field



SAMPLE DESCRIPTION

planting: herbaceous ornamentals COMMERCIAL
to be planted
soil texture: sandy
soil drainage: good
size of area: < 1 acre

[redacted] 893-1259

SOIL TEST REPORT

AGRICULTURAL & ENVIRONMENTAL TESTING LABORATORY
AND UVM EXTENSION pg 1 of 2

UNIVERSITY OF VERMONT

LAB NUMBER L 20062
DATE 03/22/02

COUNTY CHITTENDEN

FIELD NAME Back Yard

SOIL TEST RESULTS

		LOW	MEDIUM	OPTIMUM	EXCESSIVE
Avail. phosphate	(ppm P) 30.1			**********	**********
Potash	(ppm K) 60			**********	
Magnesium	(ppm Mg) 80			**********	
pH	7.1				
Calcium	(ppm Ca) 1987				
Effective CEC	(meq/100g) 10.8				
Ca:Mg:K ratio	65: 4.3:1				
Aluminum	(ppm Al) 18				
% Organic Matter	3.5				

organic fertilizer and pH information enclosed **

Please refer to the back side for a more detailed description of the test

Plants in pots, window boxes, urns, and planters usually require frequent fertilization or the use of slow-release or organic fertilizers because frequent watering, followed by rapid leaching, tends to leach out available nutrients. Slow-release commercial fertilizers, composted manures, and dehydrated manures are useful in the soil mixture to provide a steady source of nutrients. A water-soluble fertilizer such as 20-20-20 and similar analyses can be used to supplement slow-release forms.

Established perennial flowers growing in lawn areas may receive sufficient fertilizer from proper lawn fertilization. Lawn fertilizers containing herbicides to kill weeds should not be used around them.

If you have questions about your soil test, please contact:
Leonard Perry 656-0479
Extension Ornamentals Specialist
Hills Bldg, UVM

Organic levels

Sandy loam 2%

Loam 7% - Very good

Clay 8%

Soil Testing

Soil PH –measures the degree of acidity or alkalinity of the soil

6.2 to 6.8 ideal for most gardens

Add lime to raise PH

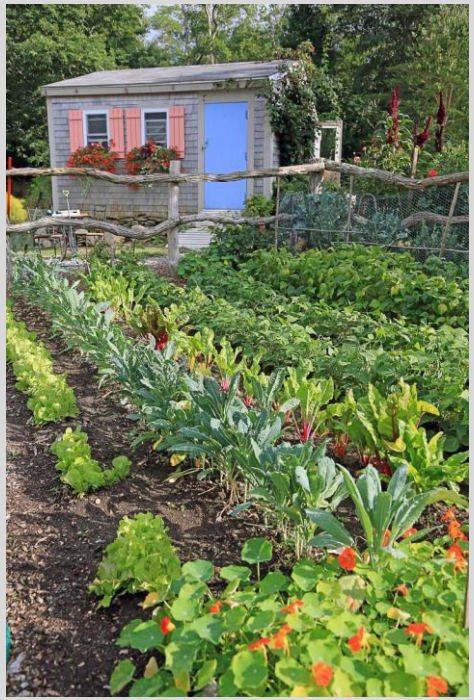
Add sulfur to lower PH (Blueberries)

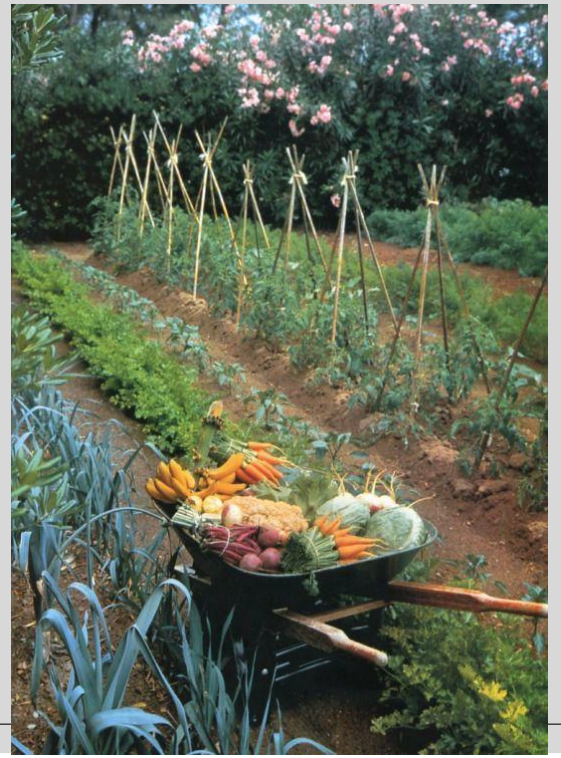
Soil test by UVM lab- Measures soil fertility or organic matter (OM)

in the soil.

https://www.uvm.edu/newsstories/news/does-your-soil-get-passing-grade

Garden Ideas





Inground gardening

- Start small

  8 X 10 ft space is a good size

- Digging your beds

  Loosen the top 6-12 inches of soil

  > Rototill, sod cutter, by hand or

  > Mow close and cover with cardboard, tarp or old rug for 3 to 4 weeks

- Amend the soil by adding organic matter (manure, leaf mold, compost)

Raised bed gardening

Raised beds

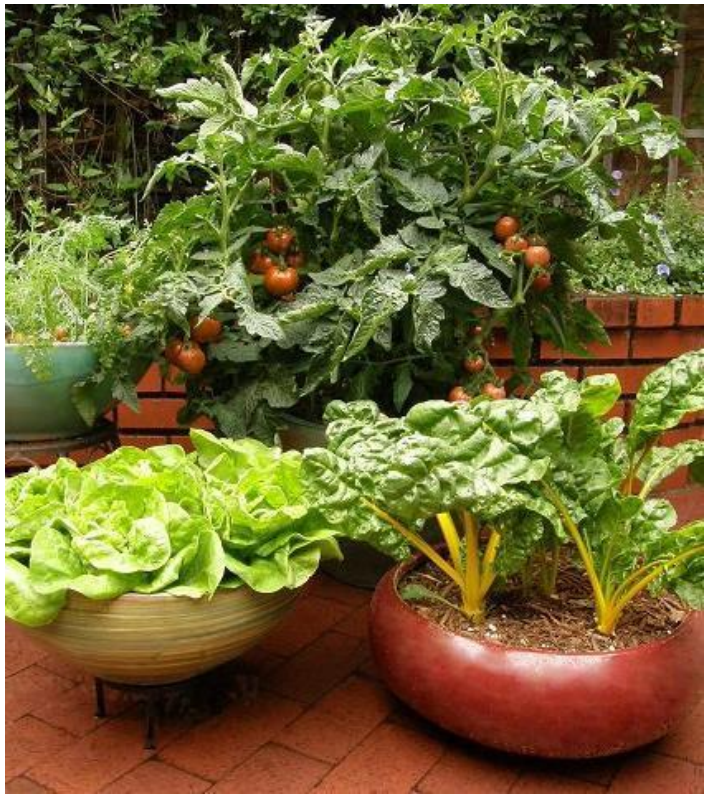
- Shallow or poor soil - 1 cubic yard of purchased garden loan will adequately fill 2 3 X 5 ft beds
- Easier on back and clearly defines area
- Size should be not more than 4 ft across so that you can reach to the center without stepping in the bed and the bed can be as long as you want it to be. Depth should be at least 6 inches deep, but 12 inches is better for the deep -rooted vegetables.
- Start by choosing your site and defining the area of the garden with a built raised bed or material of your choice.
- In most cases, **cedar** is the best wood to use for garden beds because **cedar** is naturally rot resistant. **Western red cedar** is commonly used, but Vermont white **cedar**, Port Orford (yellow) **cedar** and Juniper are also high-quality choices for outdoor construction projects. Hemlock is also an appropriate wood to use and is cheaper than cedar. DO NOT used pressure treated wood.
- Layer newspaper or cardboard at the bottom right on top of the grass and fill bed with 60% **topsoil**. 30% **compost** and 10% Potting soil (a soilless growing mix that contains **peat moss**, **perlite** and/or **vermiculite**).
- https://www.gardeners.com/how-to/raised-bed-buying-guide/9564.html

Layer Gardening
No Dig, No Till

- Start 6 months before planting.
- Can use either raised beds or in ground gardening
- Place Newspaper or cardboard at he bottom and soak with water. No glossy print.
- Layer with nutrient rich layers of compost, manure and grass clipping alternating with a carbon rich layer of straw, newspaper and shredded leaves.
- joegardener.com/podcast/easy-no-dig-gardening-charlie-nardozzi/ or
- "The Complete Guide to No Dig Gardening" by Charlie Nardozzi

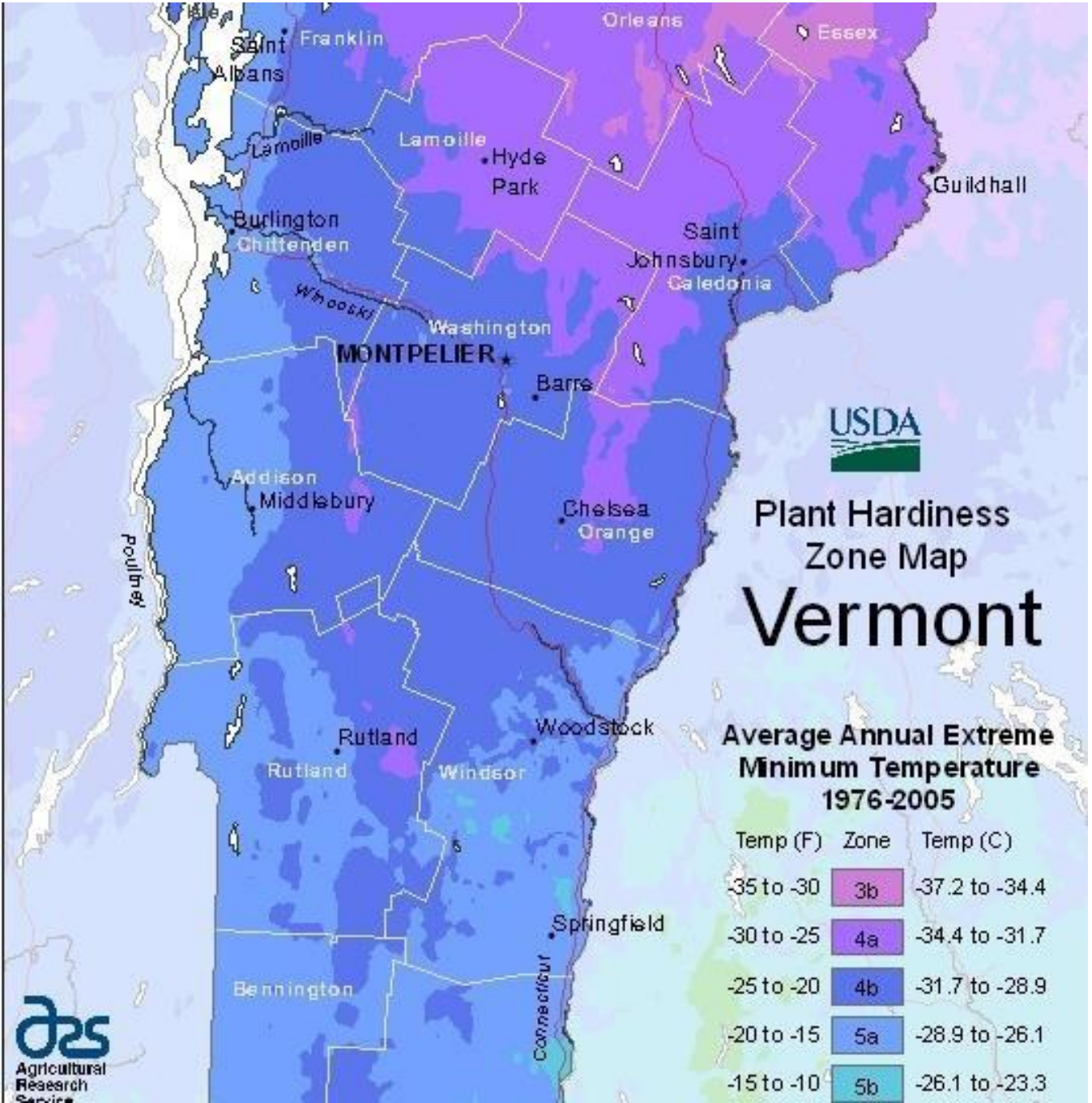
Container Gardening

- Need a site that gets lots of sun
- Need to water more frequently
- Do not use garden soil by itself
- Soilless media
- Compost up to 25%
- Fertilize regularly using a water-soluble fertilizer



Tips for Container Gardening

- Good drainage
- Choosing varieties of plants that are compact and suitable for containers
- Choose the correct container size for the vegetable you are growing



Frost Dates

- This will vary with area, the first frost date in fall in USDA hardiness zone 5 is around the first week of October, about 10 days earlier in zone 4. In the spring, the last frost date is around the second week of May in zone 5, and about 10 days later in zone 4. These zones refer to average annual minimum temperatures.
- Since cold air is heavier than warm air, it tends to sink into valleys. Mountaintops, too, are generally colder than lower elevations. For these reasons, frosts usually come first in these areas while hillsides remain frost-free. Similarly, on even a smaller or "microclimate" scale, some parts of a particular property such as low areas may be more prone to frost than areas near warmer pavement or buildings.

Planting Time!

A soil thermometer is a helpful tool especially in the spring as it can help you determine which crops to plant depending on the soil temperature.

- 40 – 50 degrees F

  Peas, radishes, carrots, beets, swiss chard, potatoes, onions, kale, lettuce, spinach, broccoli, cauliflower

- 50 -60 degrees F

  Cilantro, corn, tomatoes (transplants) cucumbers

- 60 – 70 degrees F

  Snap beans, eggplant, pepper, melons, pumpkins, squash, zucchini, basil and other herbs

https://www.uvm.edu/sites/default/files/Extension-Master-Gardener/Planting_the_Garden.pdf

Materials

Visit your local nursery and ask for recommendations for organic seeds, plants, compost, and fertilizer.

- Soil test - UVM Soil Test UVM Agricultural and Environmental Testing Lab
- Tools
- Fertilizer – LD Oliver Seed Company in Milton - North Country Organics Pro-Gro, Pro Start and Pro Holly
- Compost - Green Mountain Compost for large quantities (Trucking available)
- Hose or irrigation line or water lines and extra faucets
- Watering can
- Seed and seedlings High Mowing and Johnny's Hudaks UVM Greenhouse Gardener's Supply
- Labels
- Fencing
- Loam to fill raised beds
- Framing Materials

Flowers in the Vegetable Garden

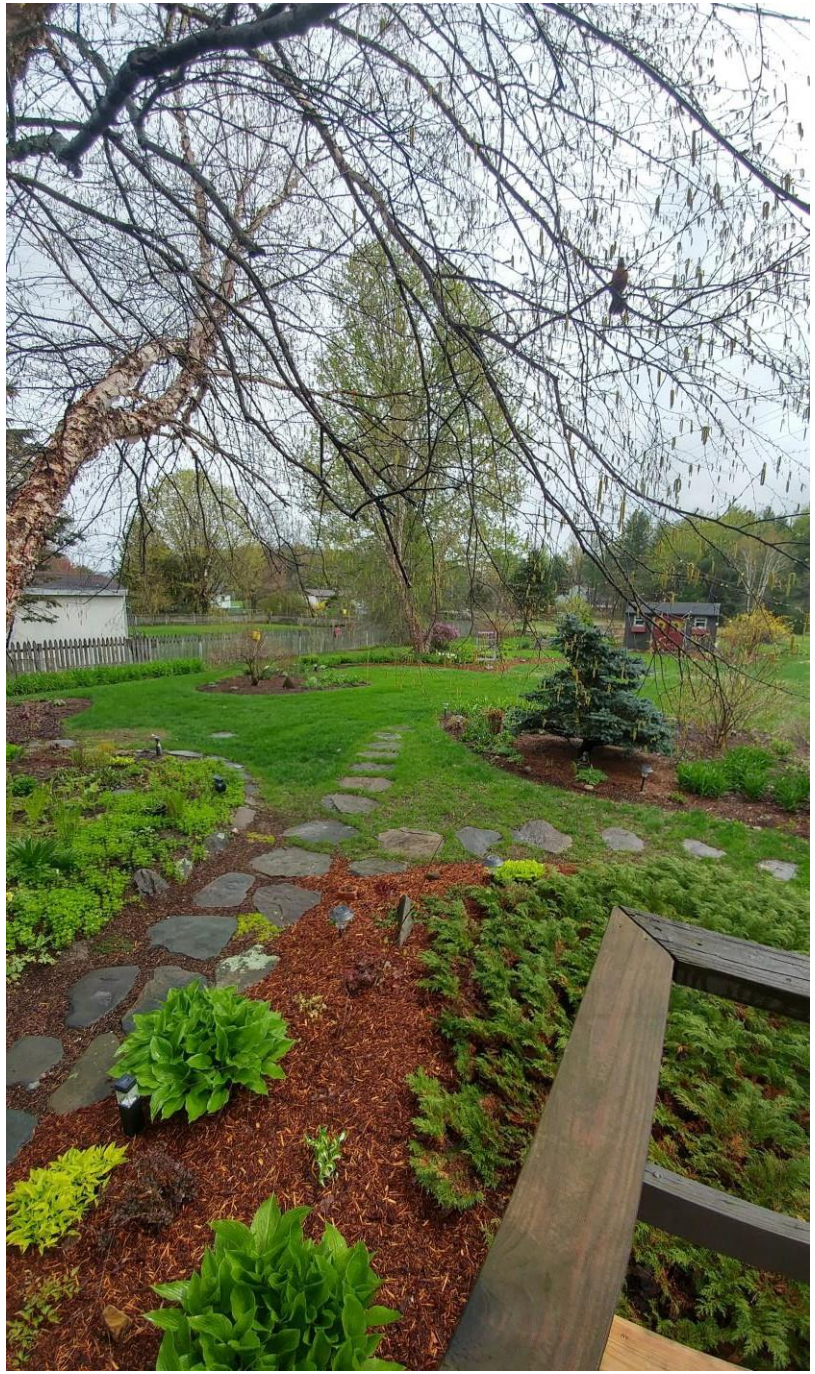
- Attracts pollinators
- Helps with managing weed
- Pest and disease control
- They are beautiful!

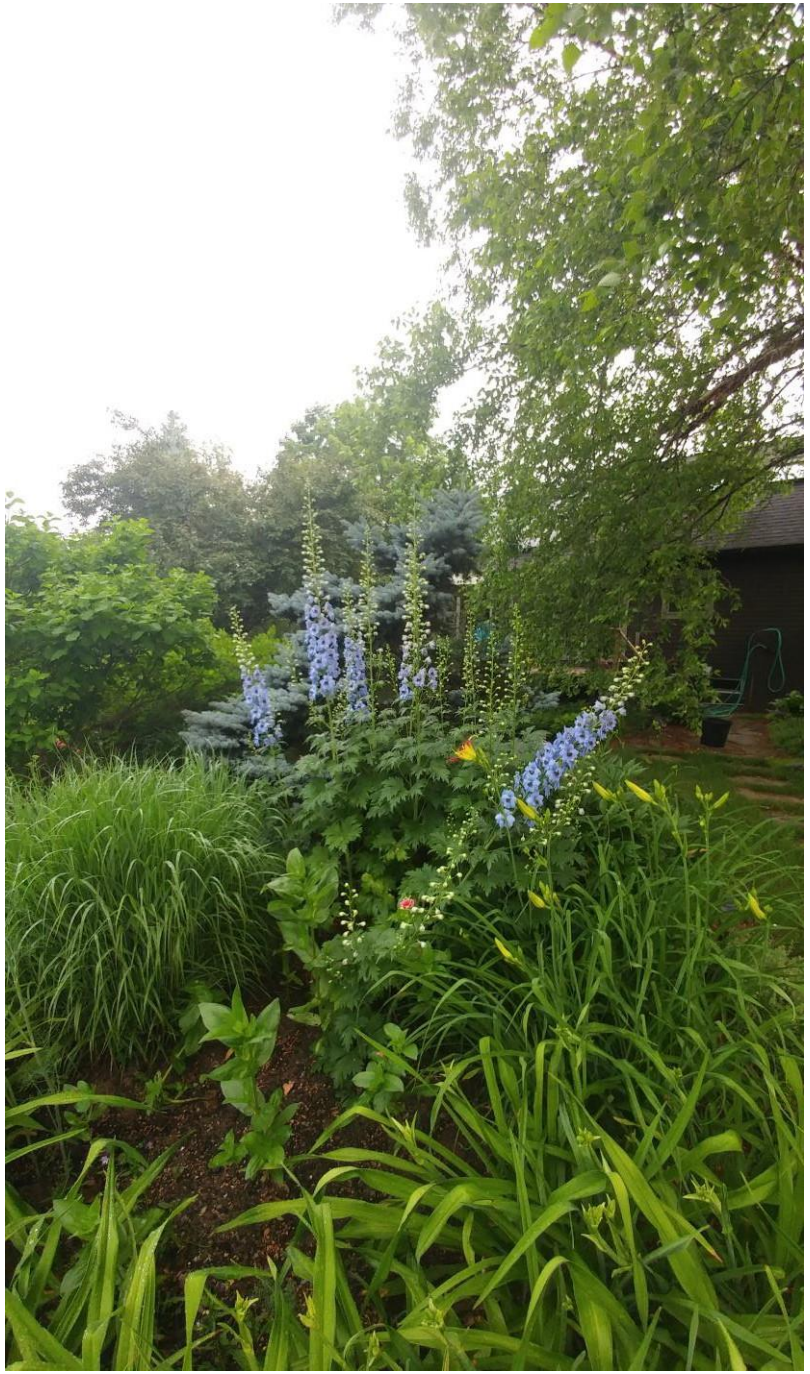
Recap

- Pick a site that gets enough sun
- Check your soil texture and drainage
- Submit a soil test
- Start killing grass and prep your site as early as possible
- Other options includes raised beds and container gardening
- Initial investment
- Most important – Have Fun!!

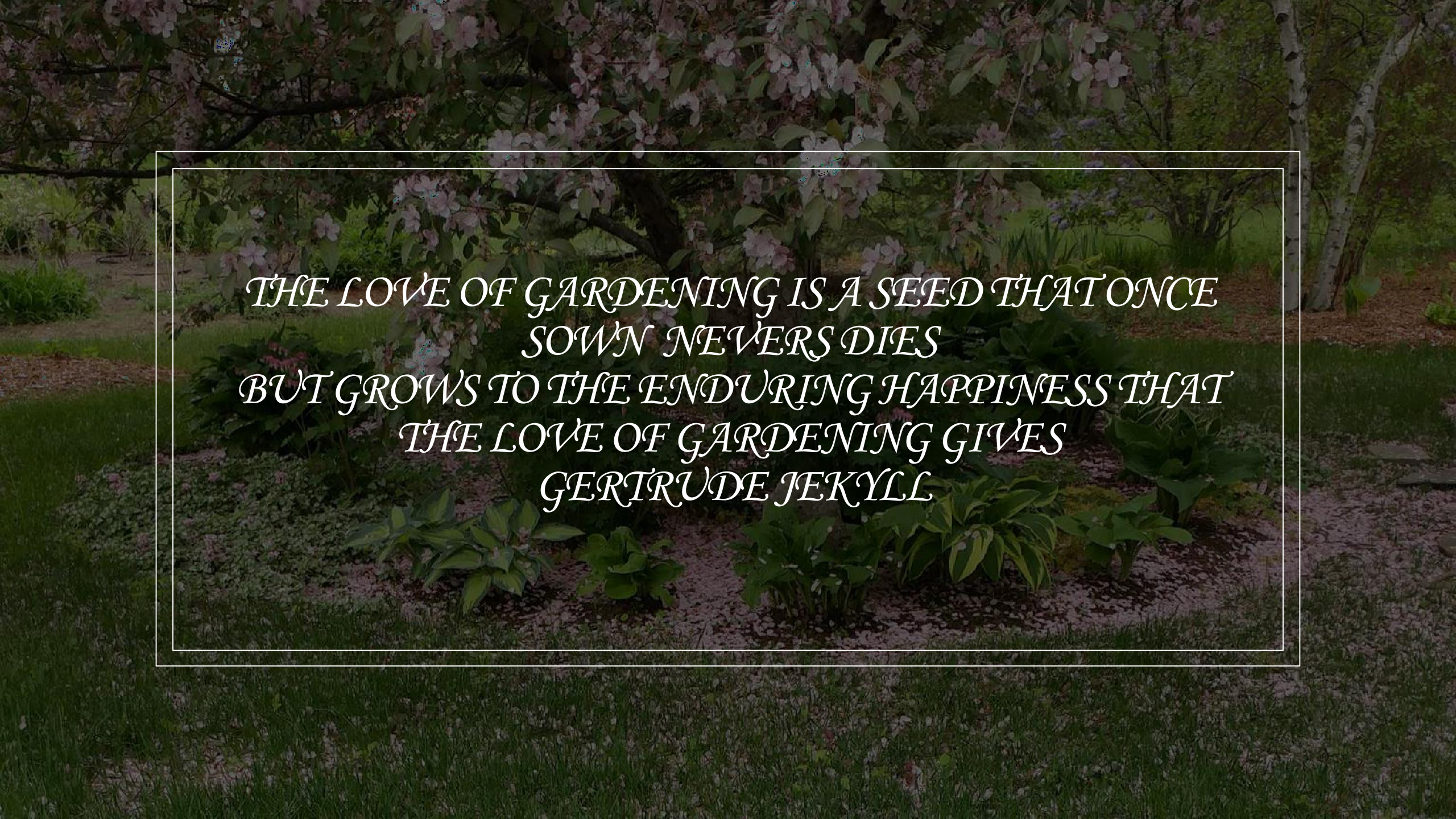
Questions and Resources

- UVM HELPLINE https://www.uvm.edu/extension/mastergardener/helpline
- https://www.uvm.edu/extension/mastergardener/gardening-resources
- https://extension.umaine.edu/gardening/manual/vegetables/
- National Gardening Association magpie@nationalgardening.org
- https://www.gardeningwithcharlie.com/how-to-grow-no-dig-gardening/
- University of Iowa and Cornell University are excellent online resources
- love2gardenvt@gmail.com That's me!








THE LOVE OF GARDENING IS A SEED THAT ONCE
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