Growing Squash In Kentucky

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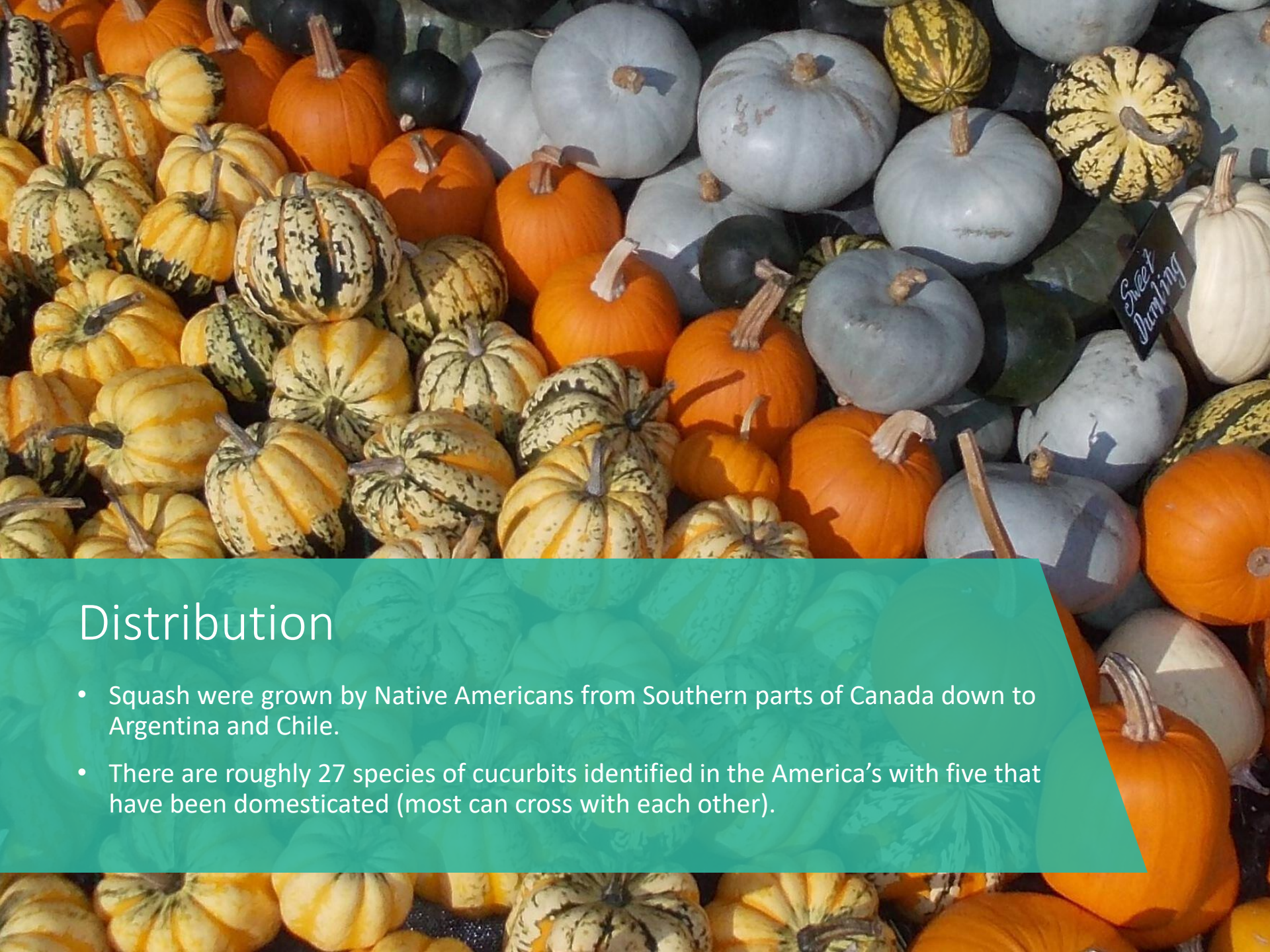
Squash History

- The word “squash” comes from the Narrangansett Native American word “askutasquash” which means eaten raw or uncooked.
- The ancestral species of squash were in the America’s before the arrival of humans…over 30,000 years
- The species of squash we are familiar with as food sources are native to the new world. Most of the ‘gourd’ types are native to Africa such as the bottle gourd.
- Squash likely originated in the South West U.S., Mexico, Meso America, and South America.

Squash History

- The earliest proven evidence of domestication of squash dates back at least 8000 years. Archeological digs from Ecuadorian caves suggests it could be as far back as 12,000 years.
- Squash was the first of the three sisters to be domesticated predating maize and beans by 4000 years.
- Native Americans used squash as a food staple with different types being grown to eat at different times of the year including their seeds.



Distribution

- Squash were grown by Native Americans from Southern parts of Canada down to Argentina and Chile.
- There are roughly 27 species of cucurbits identified in the America's with five that have been domesticated (most can cross with each other).

Domesticated Squash Species

- *Cucurbita maxima* (round, thick stems) are winter squash (buttercup, Hubbard, turban, winter pumpkins). Usually larger fruit with hard seeds, they ripen in the fall. We have to peel them. They can be stored for several months.

Domesticated Squash Species

- *C. moschata* (round stems) are also winter squash such as butternuts and musky winter squash.

Domesticated Squash Species

- *C. pepo* (pentagonal, prickly stem) are summer squash: zucchini (Italian for sweetest), marrow, courgette (French), yellow squash, ornamental gourds, crookneck, spaghetti squash, and summer pumpkins. Usually soft edible shell and seeds, they ripen in summer and need to be eaten soon after harvest.
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Domesticated Squash Species

- C. argyrosperma, winter squash such as silver seeded gourd or green striped cushaw

Domesticated Squash Species

- C. ficifolia, fig leafed gourd or black seeded squash.

Europe

- Squash is listed as one of the seven new world foods that changed Europe forever along with potato, sunflower, corn, cacao, tomato, and bananas.
- The first images of squash in the old world were in Touraine, France dated between 1503 and 1508.
- The first definite record of squash being a food source in the old world was 1591.

Squash Culture

- Light
  - ≥6 hours
- Soil
- Access
- Air Drainage
- Proximity to Trees & Shrubs

Soil

- Well-drained. Solutions for clay soils:
  - Add organic matter
  - Raised beds?
- Work soils down to 6-7 inches.
- Remove large stones, clods, or plant debris. Particularly important with root crops.

Soil

- Soil test
  - Best done the fall before planting and every 3 years thereafter.
  - Sample 6-7 inches deep in 5 areas of the garden randomly.
    - pH – 6.0-6.8
    - Phosphorus
    - Potassium
    - Nitrogen
    - Organic matter
    - If you did not do a soil test apply 10-10-10 at 25lbs per 1000 square feet.

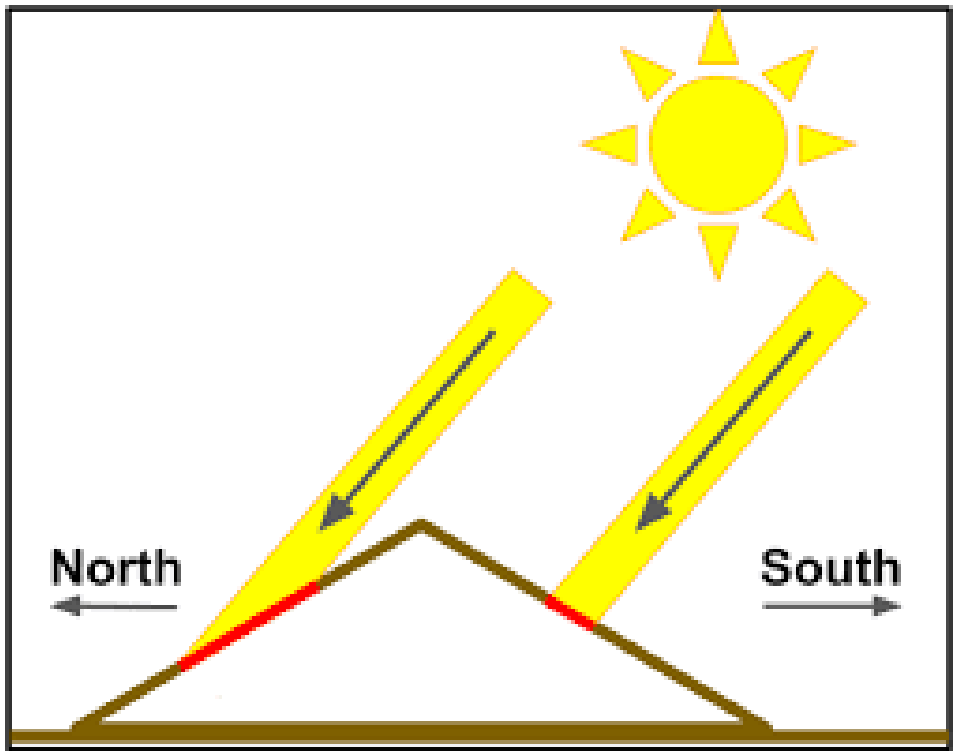
Add Compost!

- Benefits:
  - Improves water retention
  - Promotes soil structure
  - Increases fertility
  - Increases cation exchange (nutrient availability)
  - Reduces fertilizer requirements up to 50%
  - Enhanced microbial activity
    - Suppresses pathogens
    - Accelerates the breakdown of pesticides & other synthetic compounds

Access

- Near the house.
  - Easy to get to when harvesting.
  - Accessible for weeding, cultivating, & HARVESTING.
- Close to water.
- May deter vermin.

Air Drainage



- Low-lying areas are subject to unseasonable frosts & water-logged soils.
- South-facing slopes warm more quickly.
- Protected sites with reasonably good air flow is best
- Shield from damaging thunderstorm winds
- Air flow dries foliage to help control diseases

Proximity To Trees & Shrubs

- Unwanted shade.
- Competition for water and nutrients.
- Juglone toxicity.
- Site the garden at least 10 feet from any tree or shrub.

Weed Control

- Compete with plants for sunlight, water, nutrients, & space.
- Reduce perennial weeds before planting.
  - Solarization with clear plastic
  - Herbicides (Roundup, Preen)
  - Tillage
- Hoe regularly to keep annual weeds under control.
- Once actively growing vining crops compete well against weeds

Water

- For optimum growth vegetables need at least 1” of water per week….However?

Temperature

- Squash is a warm season crop
  - Develops best at temps >50°F.
  - Killed by frost.

Warm Season

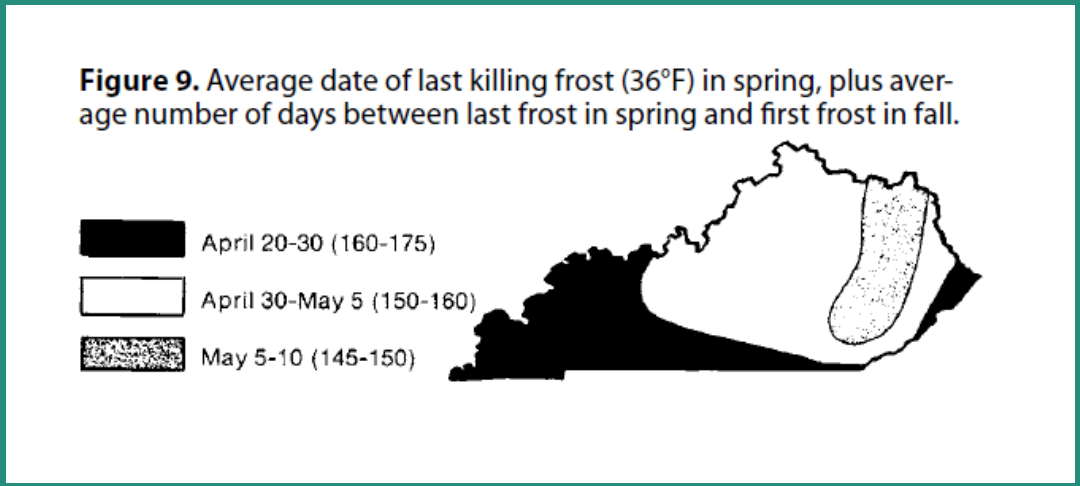


Figure 9. Average date of last killing frost (36°F) in spring, plus average number of days between last frost in spring and first frost in fall.
April 20-30 (160-175)
April 30-May 5 (150-160)
May 5-10 (145-150)

Squash

- Vining squash should only be grown if adequate space is available (they will vine up to 20 feet)
- Vining squash can also be grown under corn as they are one of a few vegetables that will grow in partial shade (three sisters)
- Use crop rotation!

Planting

- Plant after danger of frost has past, if you want pumpkins for Halloween, count based on maturity days otherwise they could rot before being used for decoration
- If planting vining squash space hills spaced 8-12 feet apart in all directions to allow for vining and air flow
- You may also plant in rows 12 feet apart with 6-8 feet within rows

Planting

Bush types of squash should be planted 3 feet apart in rows and rows 4 feet apart.

Care

- Squash need a lot of water especially once they have set fruit, drought will reduce fruit size drastically, generally 1-2 inches per week is required (summer squash only require 1 inch per week)

- Side dress when plants begin to vine with 1 lb urea per 1000 square feet to help fruit size up well (vining types only)

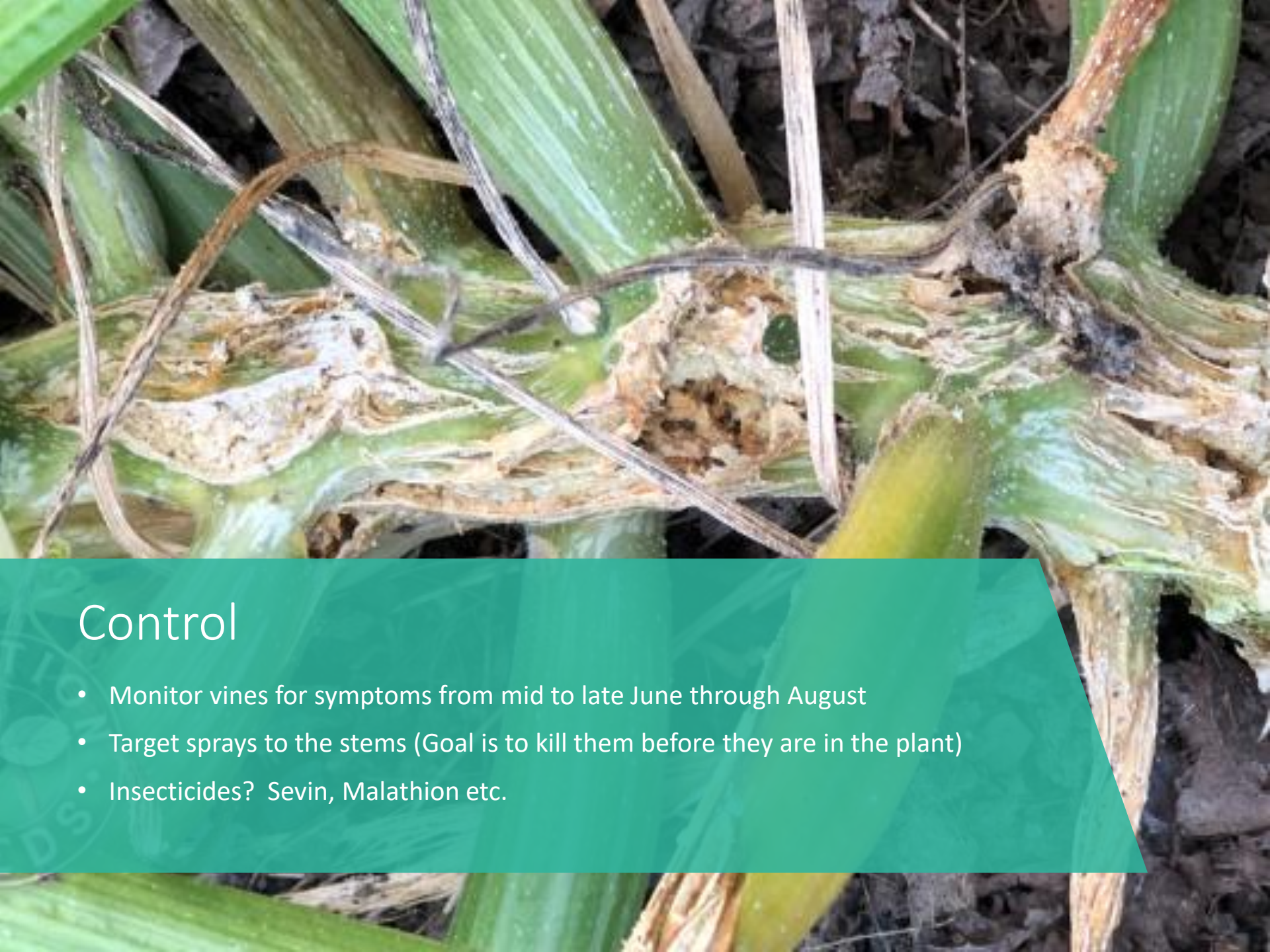
Weed Control

- Weeds can be an issue if not kept relatively under control
- Herbicides such as preen can be used however after plants have germinated… mulch either organic or plastic is a much better option.

Problems

Squash vine borer

- Vines/plants wilt and entire plant dies, by the time it is noticed it is too late
- Sawdust like frass from the base of the plant
- Grub like borer eats interferer of the vine



Control

- Monitor vines for symptoms from mid to late June through August
- Target sprays to the stems (Goal is to kill them before they are in the plant)
- Insecticides? Sevin, Malathion etc.

Squash Bug

- Shows up generally late July early August
- Hard to control once populations are allowed to grow
- Sucks sap from the plant causing leaves and plants to wilt and collapse

Control

- Crop Rotation
- Clean beds!
- Manually destroying egg masses early on
- Insecticides? Time them according to when you see nymphs, insecticides do not work well on adults
- Target sprays at base of plant
- Sevin, Malathion, Pyrethrins

Cucumber Beetles

- Feed on pollen, flowers, and late season feeding damages fruit appearance and they vector bacterial wilt!
- Monitor for beetles, they will have a large hatch for two to three weeks and then dwindle

Control

- Treat with sevin, pyrethrins, malathion etc.
- Generally early season is the time to control cucumber beetles but…..

Powdery Mildew

- Leaves are covered with powdery looking mold on the leaf surface and will eventually kill the leaves and plant
- Doesn’t have to have free moving water (rain) to develop
- Likes humid conditions
- Look for resistant varieties

Give plants adequate room to grow and plenty of air movement

Once symptoms are first notice start a biweekly spray program of mancozeb or daconil etc.

Gummy Stem Blight

- Stems develop a dry rot in moist or wet conditions
- Disease overwinters on plant residue and saved seeds
- Control by using a 3 to 4 year rotation
- Spray with daconil, mancozeb etc on a 7 day rotation while conditions persist for development
- Plant disease resistant varieties

Downy Mildew

- Produces circular yellow spots on the surface of leaves with mold developing on the bottoms of leaves
- Disease generally develops at the crown and works its way outward and is encouraged by wet humid weather
- Can quickly kill entire plantings!
- Control with targeted sprays of daconil, mancozeb, etc.

Harvesting

- Harvest the first summer squash 7-8 weeks after seeding when fruit are 2-3 inches in diameter and 7 inches long.
- Handle summer squash gently as it bruises easily.
- Refrigerate for up to 1 week.
- Winter squash and pumpkins are harvested 3-4 months after planting.
- Harvest winter squash and pumpkins before a hard frost.
- Outer skin of winter squash and pumpkins should resist fingernail pressure.
- Cure winter squash and pumpkins by exposing them to 80°F temps for 7-10 days.
- Store at 40-45°F for up to 2-3 months.

Variety!!!!
Summer Types

Variety!!!!
Winter Types

Variety!!!!
Summer Types

Questions?