Growing Strategies to Increase Production and Decrease Maintenance

New Model: Communal Farms

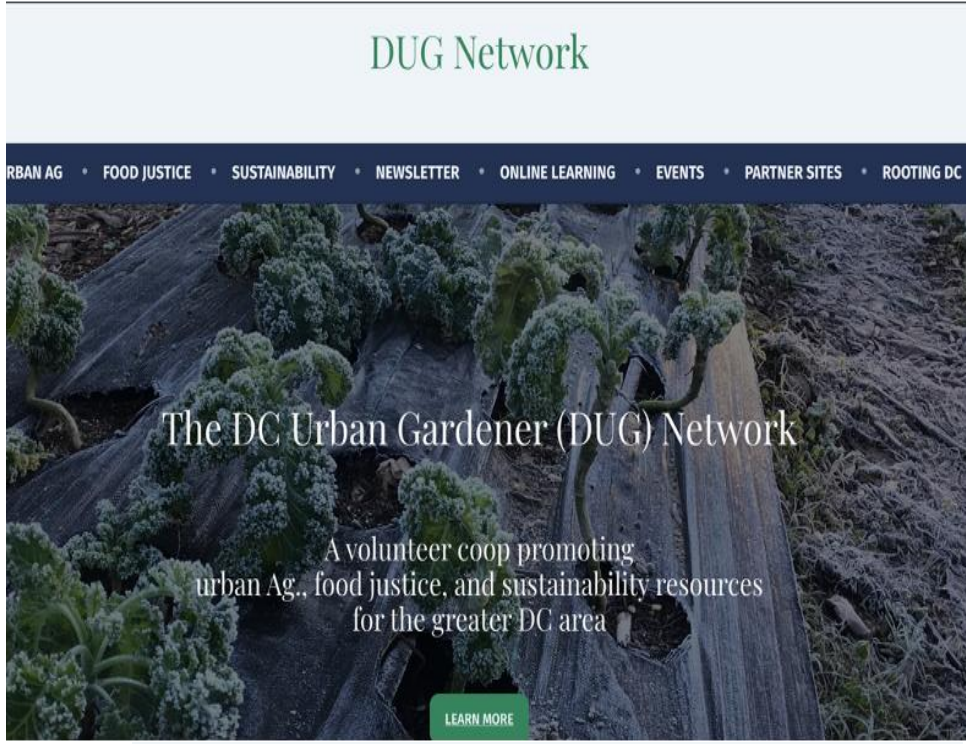
- **DRP Communal Farm Program**
  - Production farms managed communally by DPR staff and voluntee
- **Benefits**
  - 100% inclusive
  - Significantly more productive
  - Benefits reach more people
- **3 communal farms**
  - Lederer Gardens (ward 7)
  - Edgewood Rooftop Farm (ward 5)
  - Powell Communal Farm (ward 1)
- **Allow for variety of programing**
  - Volunteering
  - Hands on education (farm training, food demo, herbalism, etc.)
  - Field trips, events, etc.
  - Weekly produce giveaways
- **In 2025 Communal Farms**
  - Grew and gave away over 13K lbs. of veggies
  - Rescued and gave away over 94K pounds of food donations
  - Gave away over 5K vegetable seedlings and over 3K medicinal and perennials plants
    - Communal Farm Winter Plant Giveaway
    - DPR Communal Farm Seedling and Plant Giveaways
    - DPR DC Mutual Aid Apothecary Herbal Plant Giveaway
  - Hosted 60+ farm workshops, food demonstrations, and events

DUG Communal Farm Map

DC Urban Gardener (DUG) Network

- A volunteer coop promoting urban Ag, food justice, and sustainability resources in the greater DC area
- Local resource hub website
  - 100s of local organizations and resources for growing, building better food systems and saving the environment
- Free bi-weekly resource newsletter
- Online education
  - *Ie. Organic Cannabis Home Cultivation 101*

dugnetwork.org



DC Social Justice (DSJ) Network

DUG Urban Grower Certificate Course

Course 1 – Planning and Building Urban Gardens

- Intro to the DC Urban Ag Movement
- Starting Seeds at Home
- Winter Pruning and Propagating
- Building a Garden
- Building Garden Infrastructure
- Planning Vegetable Gardens
- Container Gardening and Indoor Growing
- What to Do Each Month of the Year

Course 2 – Planting and Growing Urban Gardens

- Planting Vegetable Gardens
- Growing Vegetable Techniques
- Harvesting Vegetable Techniques
- Cooking and Preserving Vegetable Techniques
- Garden Pests
- Garden Diseases
- Garden Weeds
- Critter Proofing

Course 3 – Advanced Growing Techniques

- Season Extension and Four Season Growing
- Garden Carpentry
- Urban Composting: Hot Composting
- Urban Composting: Cold Composting
- Urban Fruit Trees
- Growing Berries and Food Forests
- Growing Mushrooms
- Urban Foraging in DC

Course 4 – Understanding Food Justice

- Food Justice and the History of the US Food System
- Roots of Food Apartheid +Building Local Food Sovereignty
- Ethical Consumerism in National and International Food Systems
- Recreating the Commons through Cooperative Food Systems
- Finding Land and Organizing Inclusive Urban Ag in DC
- Overview of Food Recovery in DC

Tickets and updates: dugnetwork.org

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Pest Covers

Shade Cloth

Silage Tarp

Beginning Gardener Baseline

1. Rent a garden plot or make a raised bed (Google instructions) filled with topsoil in a sunny area
2. Mix a few bags of compost in the soil every year
3. Buy a dozen seedlings per 4’’ x 8’’ raised bed in May (after Mother’s Day) from a local garden store
4. Google planting spacing and growing instructions of each plant you’re planting
5. Water soil whenever its dry (a few times a week)
6. Pull any plants (weeds) you didn’t plant once a week
7. Google any bugs you don’t recognize and squish the bad ones (pests)
8. Google when and how to harvest your plants
9. Wait till plants are all dead in the Fall and cover plot with a bag of mulch

Strategies to Increase Production

Phenology

- **Phenology**
  - Study of how seasonal changes impact the life cycles of plants and animals
  - Practice of using nature's signs to determine when to plant crops
- **Examples**
  - Dandelion blooming (also Forsythia)
    - Safe to seed peas, spinach, lettuce, and potatoes
  - Dogwoods blooming
    - Safe to plant tomatoes and most other warm weather crops
- **Can also use a soil thermometer**
  - However temperatures can be abnormally high on any given day

Dandelion Planting Chart
By The Maritime Gardening Newsletter

Vegetable	Minimum F	Minimum C	Maximum F	Maximum C	Dandelion Stage
Lettuce	35	2	75	24	
Onion / Leek	35	2	75	24	
Parsnip	35	2	65	18	
Spinach	35	2	70	21	
Asparagus	50	10	75	24	
Beet	40	4	85	29	
Cabbage	40	4	85	29	
Carrot	40	4	80	27	
Cauliflower	40	4	80	27	
Chard (Swiss)	40	4	85	29	
Kale	40	4	85	29	
Parsley	40	4	75	24	
Pea	40	4	75	24	
Potato*	45	7	64	18	
Radish	40	4	85	29	
Turnip	40	4	85	35	
Bean	60	16	80	27	
Corn	50	10	95	35	
Cucumber	60	16	95	35	
Eggplant	60	16	85	29	
Melon	60	16	90	35	
Pepper	60	16	85	29	
Squash (S/W)	60	16	95	35	
Tomato	50	10	85	29	

Sources:
https://extension.oregonstate.edu/gardening/techniques/soil-temperature-conditions-vegetable-seed-germination
*Potato data from separate source: https://www.gov.mb.ca/inr/pdf/pubs/mafri-potatoe.pdf

Spring/Fall - Cool Weather Crops

Greens

Arugula
Collards
Endive
Kale
Leaf Lettuce
Mustard
Pak Choy
Sorrel
Spinach
Swiss Chard

Root Crops

Beets
Carrots
Garlic
Leeks
Potatoes
Onions
Parsnips
Radishes
rutabaga
Turnips

One and Done

Broccoli
Brussels Sprouts
Cabbage
Cauliflower
Celery
Kohlrabi
Head Lettuce

Nitrogen Fixer

Peas *(bush & pole)*

Flowers

Borage
Snapdragons

Annual Herbs

Dill
Cilantro
Parsley

Perennial Herbs

Fennel
Lavender
Mint
Oregano
Rosemary
Sage
Thyme

**Most cool crops will grow in summer, especially with shade protection*

Summer – Warm Weather Crops

Bushy

Eggplant
Peppers
Summer Squash
Tomatillos
Tomatoes
Zucchini

Sprawling

Cantaloupes
Cucumber
Gourds
Melons
Pumpkin
Winter Squash

Root Crops

Sweet Potatoes

Stalks

Corn
Okra

Greens

Malabar Spinach

Nitrogen Fixers

Peanuts
Beans *(bush & pole)*

Herbs

Basil
Summer Savory

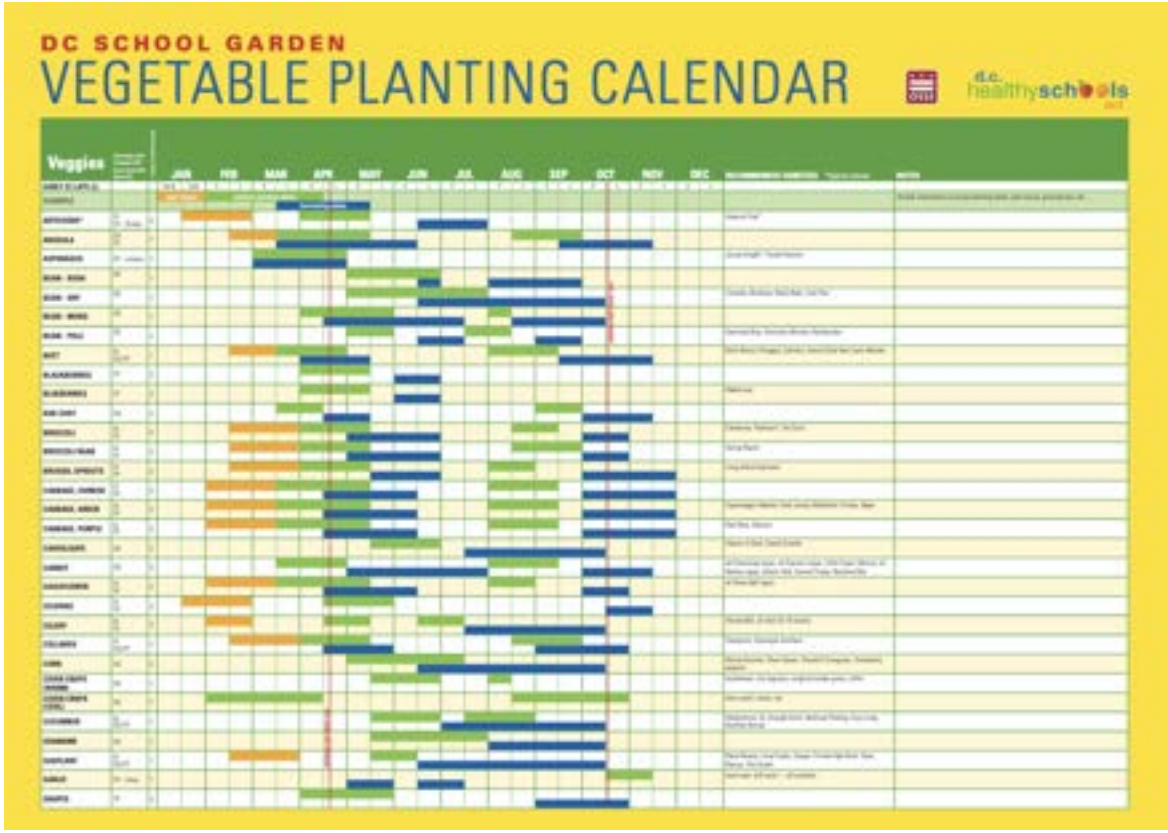
Flowers

Celosia
Dalhia
Marigold
Nasturtiums
Strawflower
Sunflowers
Zinnia

**Most warm crops will die if touched by frost*

General Seedling and Planting Dates for DC

- **Spring planting (cool weather crops)**
  - February – March
    - Start Spring seedlings inside
  - March – April
    - Plant Spring seedlings and direct seed outside
- **Summer plantings (warm weather crops)**
  - March – May
    - Start Summer seedlings inside
  - May – June
    - Plant Summer seedlings and direct seed outside
- **Fall planting (cool weather crops)**
  - July – August
    - Start Fall seedlings inside
  - August – September
    - Plant Fall seedlings and direct seed outside



Intercropping

Mix fast growing with slow growing vegetables

- Increases production
- Decreases exposed soil
- Can direct seed or transplant
- Ground covers can limit intercropping

Fast growing vegetables

- Radishes
- lettuce
- Arugula
- Spring onions

Slow Growing Vegetables

- Kale
- Cabbage
- Tomato
- Corn

Lettuce intercropped between tomatoes

Radishes intercropped between cabbage

Intercropping Tips

- **Plan to fertilize extra**
  - Top dressing with compost works great
- **May need to prune leaves**
  - To ensure all plants get sunlight
- **May need to remove a few crops**
  - If over planted
  - Try to prioritize crops for removal
    - Which ones are more important
      - vs less important
- **Combine intercropping with succession planting**
  - For growing a lot of food on small spaces

Leeks are a great intercropping veggie to maintain straight row

Intercropping to Change Seasons

- **2 options to change growing season (cool/warm weather)**
  - Remove all plants
    - Start over with next season crops
    - Till in new compost
    - Often a gap in between harvesting
  - Slowly replace current crops harvesting as needed
    - With crops for next season
    - Top dress with new compost
    - Can increase overall harvest times

- **When removing plants either**
  - Pull entire plant out and shake off soil
  - Cut plant from the base and leave roots to decompose

- **Careful leaving weak plants/plants done producing**
  - Could attract pests
  - Sometimes worth while to let certain plants flower
    - Brassicas, like Kale, often have delicious flowers after they’re done

Intercropping Fall Plantings

Kale Planted under Trellis and Pruned Tomatoes

Kale Planted in between last of Summer Squash

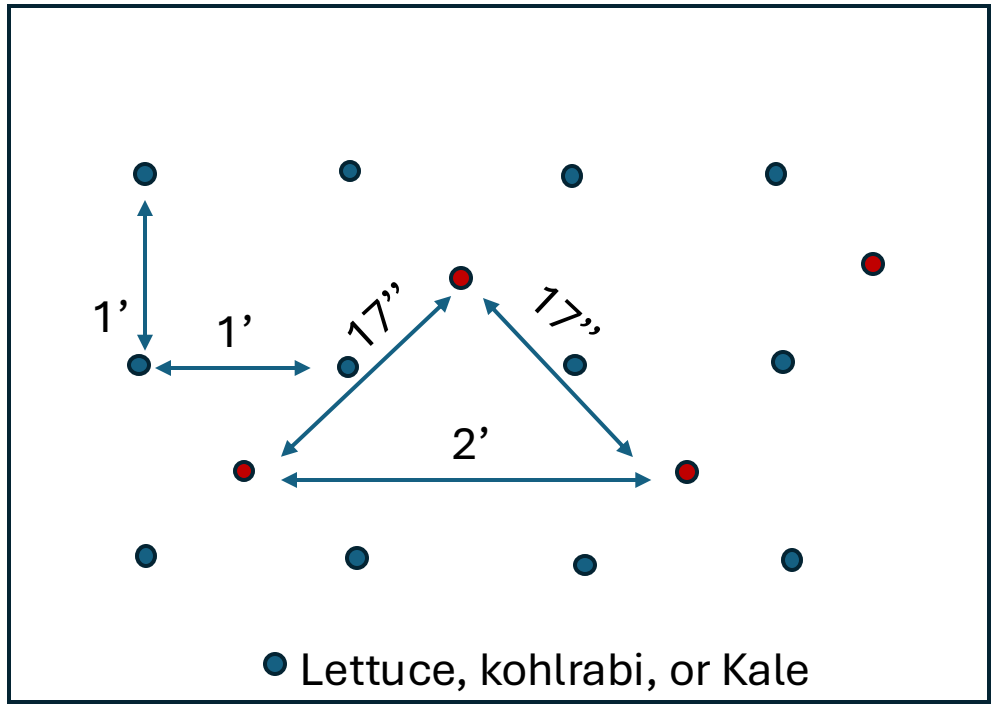
Stagger Rows vs Straight Rows

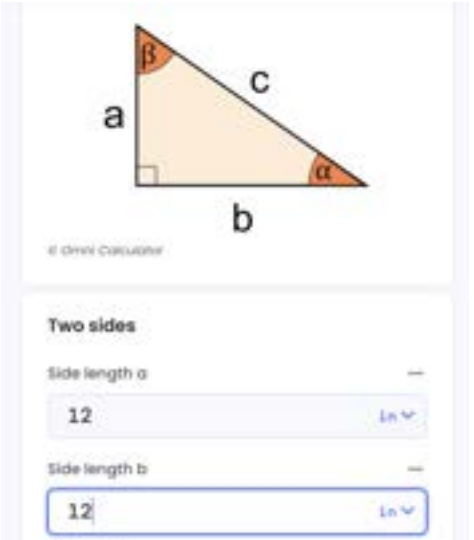
Increased production vs Increased Intercropping

Intercropping Straight with Staggered Rows

- Straight rows of lettuce or kohlrabi (1’ spacing)
  - intercropped with staggered rows of Eggplant or pepper (18’’ of spacing)

- Straight rows of Curly or Dino Kale (1’ of spacing)
  - intercropped with staggered rows of indeterminate tomatoes (18’’ of spacing)



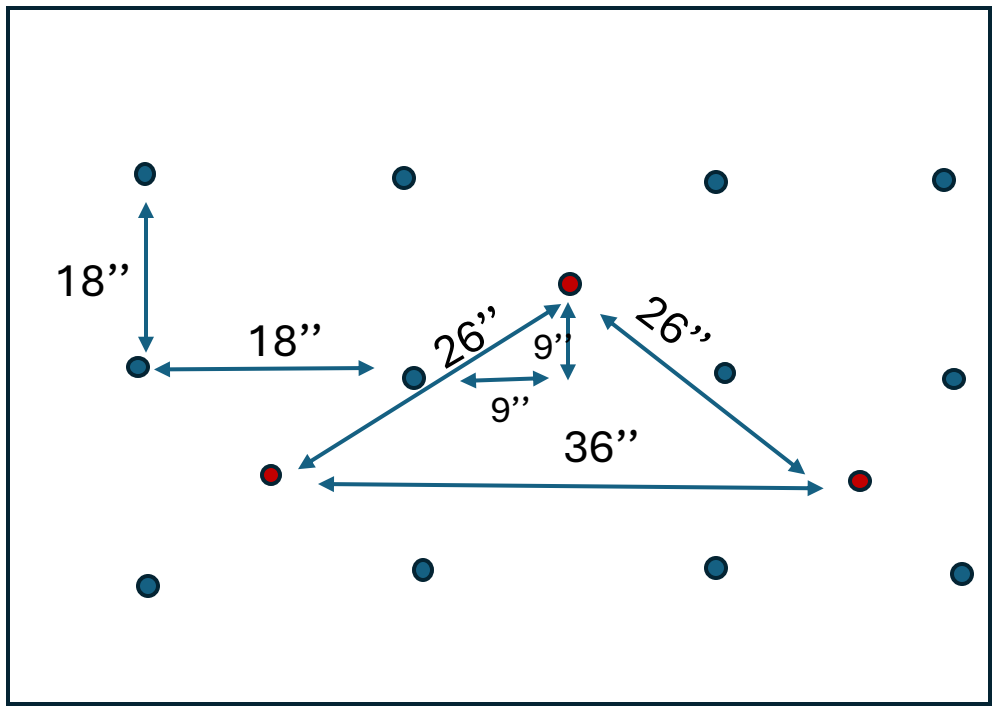


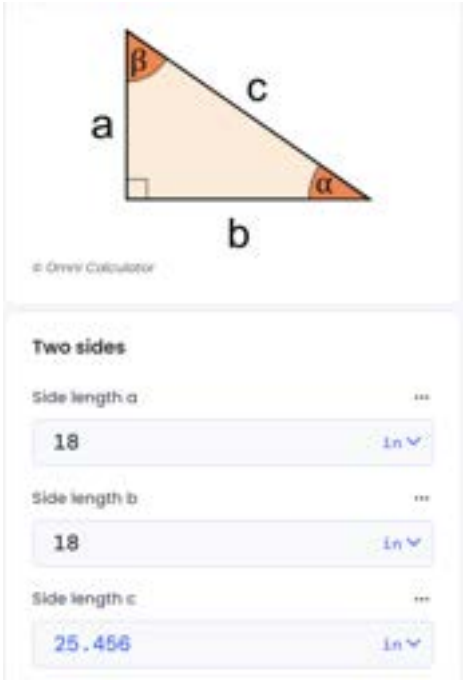
String Trellised Tomato (staggered row)
intercropped into
curly kale (straight row)

Intercropping Straight with Staggered Rows

- Straight rows of kohlrabi or Lettuce (18’’ spacing)
  - intercropped with staggered rows of summer squash or zucchini (26’’ of spacing)

- Straight rows of Collards (18’ of spacing)
  - intercropped with staggered rows of indeterminate tomatoes (26’’ of spacing)





Summer Squash (Staggered Row) Intercropped into Kohlrabi (Straight Row)

- Lettuce, kohlrabi, or Collards
- Summer Squash, Zucchini or Tomatoes

Intercropping Summer Crops in Spring Kohlrabi/Lettuce Beds

Kohlrabi intercropped with tomatoes, peppers, eggplants in May

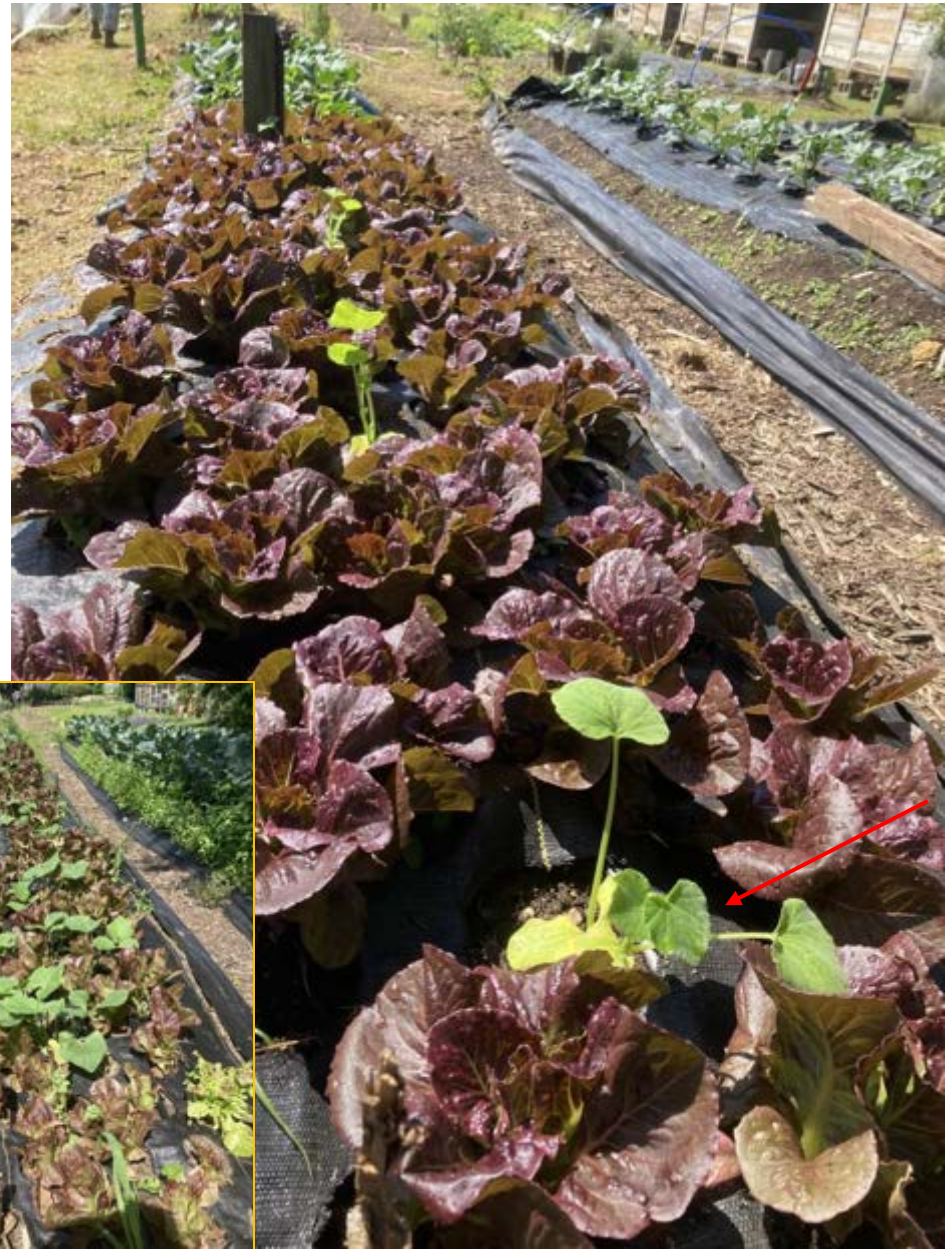
Romine lettuce intercropped with summer squash in May

*May need to remove some crops and trim some leaves for better spacing/sunlight

Direct Seeding String Trellised Cucumbers Intercropped into a Kohlrabi and Lettuce bed

cucumbers

Lettuce/Winter Squash



Winter squash

Peas Shoots/Watermelon

watermelon

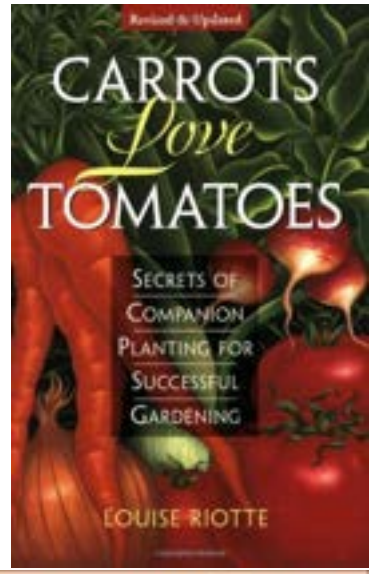
Intercropping Winter Cover Crop

- **September/October**
  - Weed soil under a trellised bed
    - Prune lower branches
    - Tomatoes, eggplants, peppers, etc
  - Use a hard rake to rake soil
    - Seed winter cover
    - Lightly rake again to cover seeds
    - Mulch and water
  - Cover crop should establish as tomatoes end
    - Remove tomatoes before winter
      - Cut at base leaving roots in ground

- **Incorporate into a crop rotation**
  - Move trellised tomato beds in a new spot each year
  - Intercrop winter cover crop ever year to replenish soil

Companion Border Intercropping

- **Border Intercropping**
  - Onions, garlic
    - Repels pests
  - Nasturtiums, Marigolds, etc.
    - Attracts beneficial insects



Marigold border

Garlic border

Beneficial garden companions

Grow companion plants as a border around other plants, mixed within rows or interspersed throughout a bed.

PLANT	PLANT WITH	COMMENTS
Basil	lettuce, peppers, tomatoes	enhances growth, repels flying insects
Beans	cabbage family, corn, eggplant, lettuce, marigolds, petunias, potatoes	deters potato beetles, fixes nitrogen
Calendula	cabbage family, corn, lettuce	attracts minute pirate bugs and lacewings
Carrots	lettuce, marigolds, onions, parsley, tomatoes	keep away from dill
Cabbage family	aromatic herbs, chamomile, marigolds, onions, nasturtiums, potatoes	keep away from strawberries, tomatoes
Catnip	eggplant, lettuce, oriental greens, potatoes	repels flea beetles; use as a mulch
Cucumbers	lettuce, nasturtiums, onions, peas, petunias, radish	keep away from sunflowers, potatoes
Geraniums	cabbage family, grapes	repels cabbage worms, Japanese beetles
Lettuce	beans, cabbage family, calendula, carrots onions, peas, pansies, radish	compatible with most garden plants
Marigolds	all garden plants	repels aphids, potato, squash bugs; mass plantings kill nematodes
Nasturtiums	all garden plants	deters many pests; masks plant odors
Onions	most garden plants, except peas, beans	deters many pests; masks plant odors
Petunias	eggplant, grapes, greens, squash	also plant with any vegetable bothered by leaf hoppers
Peas	carrots, corn, cucumbers, potatoes	fixes nitrogen; keep away from onions
Peppers	basil, carrots, onions, parsley	keep away from fennel
Radish	especially carrots, cucumbers, squash	repels cucumber beetles
Squash	nasturtiums, onions, petunias, radish	keep away from cucumbers, melons
Tomatoes	basil, carrots, chamomile, marigolds	keep away from fennel, potatoes

COMPANION PLANTING THE OLD FASHIONED WAY WITH A 3 SISTERS GARDEN

corn, pole beans & squash

THE CORN SUPPORTS THE BEANS, THE BEANS ADD NITROGEN AND THE SQUASH SHADES OUT THE WEEDS

1) Plant the corn after danger of frost has passed.

2) Plant the pole beans when the corn is 5 inches high.

3) Plant squash seeds one week later.

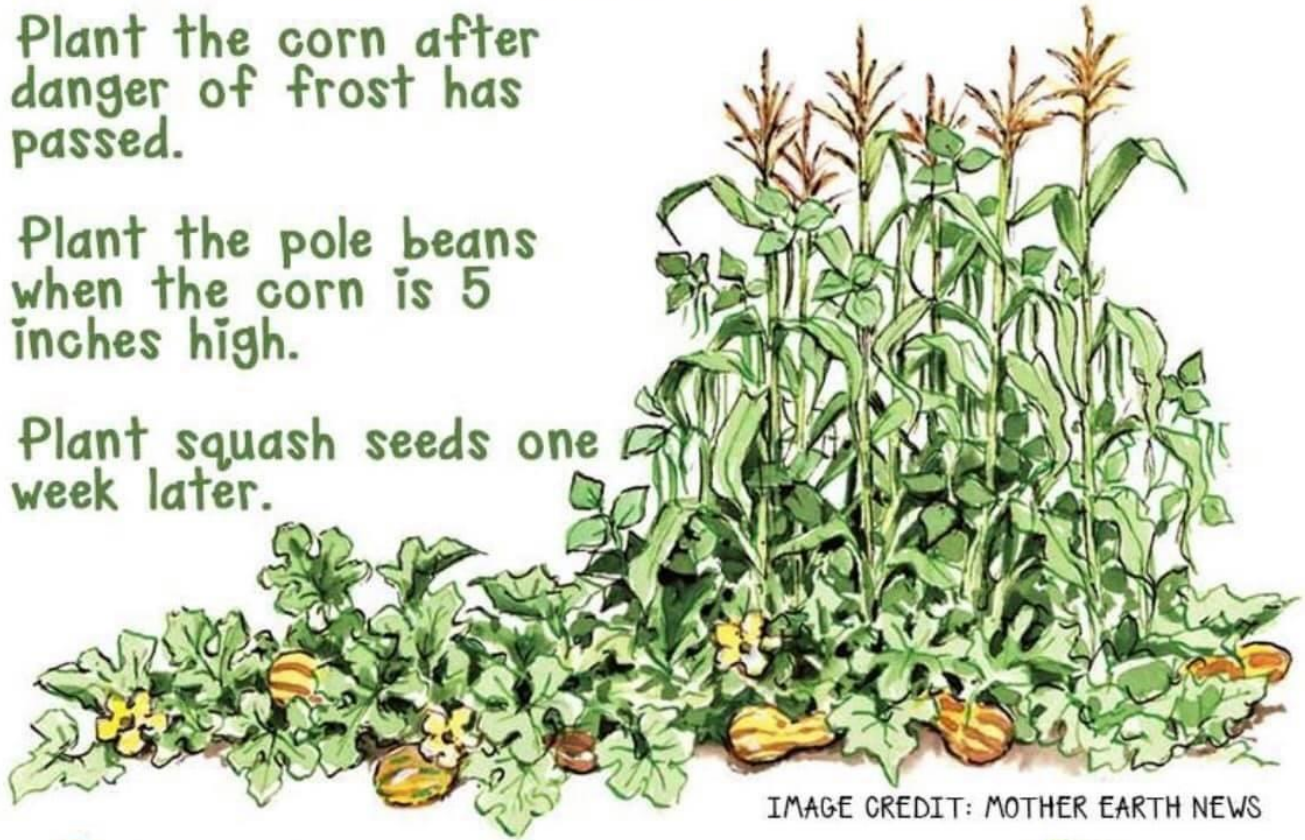


IMAGE CREDIT: MOTHER EARTH NEWS

GMO FREE USA

www.gmofreeusa.org
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GMO FREE CANADA

VEGETABLES THAT CLIMB & SUPPORT EACH OTHER

Corn & Pole Beans

Sunflowers & Cucumbers

Sorghum & Runner Beans

Jerusalem Artichoke & Peas

Okra & Malabar Spinach

Amaranth & Pole Beans

Sunflowers & Small Gourds

Corn & Scarlet Runners

Broom Corn & Hyacinth Beans

Succession Planting

- **Scheduling the plantings to have a continuous harvest throughout growing season by:**
  1. Staggering the plantings of same crops
     - Plant new row every 1-4 weeks
       - Allows for new plants to harvest every 1-4 weeks
       - Summer squash, cucumbers, lettuce, turnips, radishes, etc.
  2. Plant varieties with different days to maturity
     - Plant all varieties same time
       - Different varieties mature at different times extending harvesting times
       - Potatoes, tomatoes, melons, lettuce, beets, carrots, etc.
- **Good strategy when planting a lot of one crop**
  - While not harvesting all at once
- **Climate change adaptation**
  - Summer succession vs Fall crops
- **Good succession crops**
  - Lettuce
  - Summer Squash
  - Beans/peas
  - Tomatoes

Radish rows planted every 2 weeks

Succession Planting with Lots of Space

- **When planting multiple succession rounds of a crop**
  - Create a new bed for each planting
  - Intercropping plantings (Spring, Summer, Fall)
    - to add more veggies and more growing time
  - Pick quick maturing varieties

- **If possible, plant seedlings**
  - If direct seeding
    - seed 2-3 weeks before planting date
  - Intercrop to increase growing time

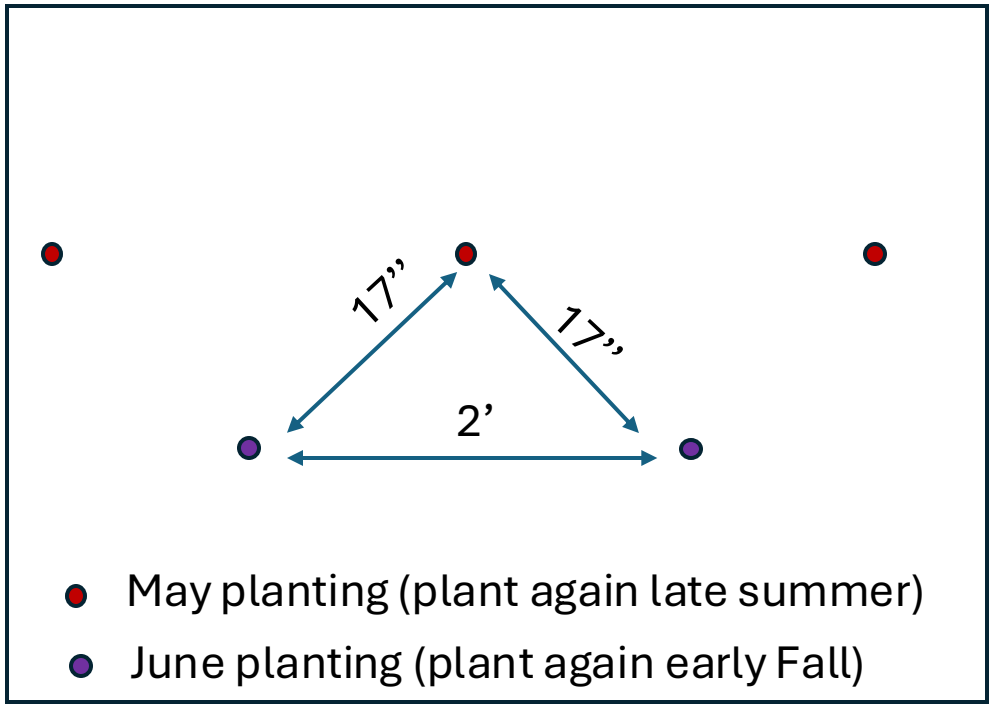
Succession Summer Squash Planting Schedule

	Bed 1	Bed 2	Bed 3
April 1st	Radishes direct seed 30 days till harvest	Kohlrabi Seedlings 60 days till harvest	Broccoli Seedling 90 days till harvest
May 1st	1st Squash Direct seed 60 days till harvest		
June 1st		2nd Squash Direct seed 60 days till harvest	
July 1st			3rd Squash Direct seed 60 days till harvest
Aug 1st	Fall Broccoli Seedling 90 days till harvest		
Sept 1st		Fall Kohlrabi Seedlings 60 days till harvest	
Oct 1st			Fall Radishes direct seed 30 days till harvest

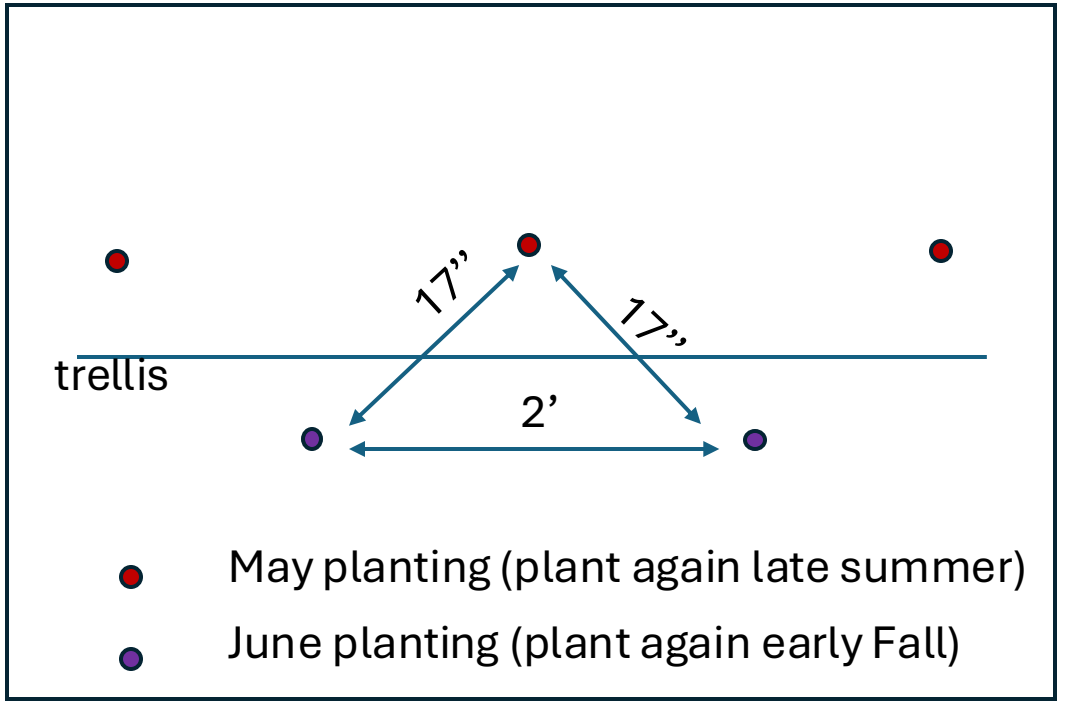
Succession Planting with NOT a Lot of Space

- Combine Succession Planting with Intercropping
  - To plant all succession plantings in same bed

Summer Squash/Zucchini



Trellised Cucumbers



Succession Planting at DPR

- **Each planting gets a new bed**
  - *Green beans (Bush and Pole)*
    - Plant first bed of green beans in early May
    - Plant second bed after we harvest garlic in late June/early July
      - Careful of Mexican Bean Beetle that emerges late summer
  - *Tomatoes*
    - Plant first bed of tomatoes in early May
    - Plant second bed of tomatoes after we harvest broccoli/cabbage
      - late June/early July
    - Start succession seedlings in late May/early June
      - Or propagate suckers in early to early-to mid June

- **Intercropping all succession plantings in same bed**
  - *Summer Squash/Zucchini*
    - Plant first round in May
      - Second Round mid-summer (June-July)
        - Third round in Late summer (August/September)
    - Intercrop succession plantings in same bed
      - Remove old summer squash as soon as production decreases to make room
  - *Lettuce (romaine, bok choy, etc.)*
    - Plant first round in March/April
      - while seeding another round of seedlings in the greenhouse
    - As lettuce heads get harvest replant with seedlings
    - Or cut and come
      - To regrow 1-2 succession
    - Provide shade when it warms up in summer

Mexican bean beetle

Tomato suckers

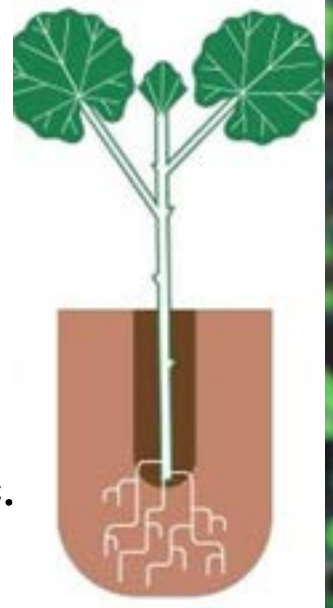
Intercrop into dying summer squash

Cut and come again lettuce

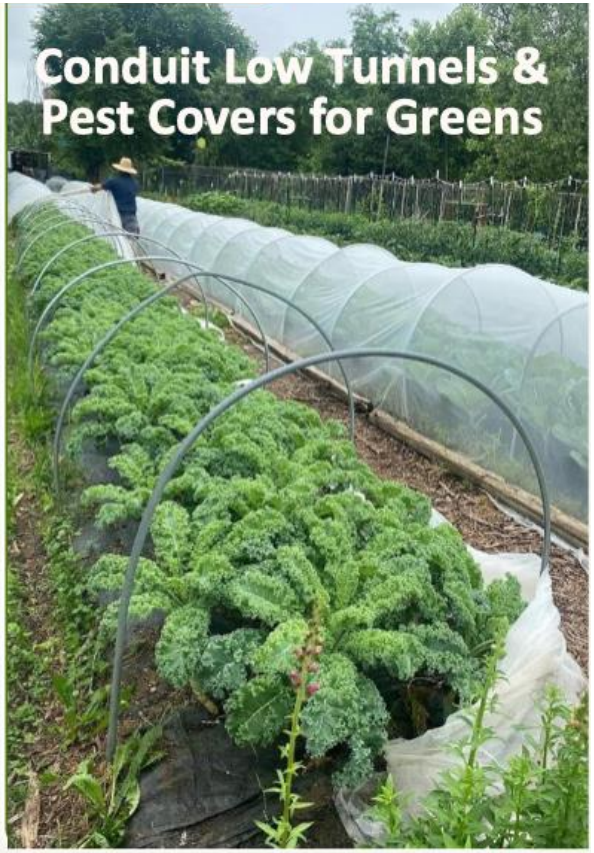
Shade cloth

Tomato Succession Using Suckers

- **Timeline**
  - May-June
    - Start pruning tomatoes shortly after planting
  - Early to mid-June
    - Pot up suckers 4-6 inches long and as thick as a pencil
      - Only need 2-3 weeks to form good root ball
  - Late June/Early July
    - Plant as soon as root ball is solid
    - Plant after harvesting broccoli, cabbage
- **Potting Up Instructions**
  - Pull off sucker
    - Cut if sucker is large
  - Reduce sucker to 4-6'' with one pair of leaves on top
    - Pull off any additional leaves and flowers on the bottom
    - Insert stem in **potting soil**
      - Can poke hole in soil with pencil first
      - Lightly compact
      - Water like a seedling
    - **Ready to plant outside in 2-3 weeks**
  - No humidity domes, rooting in water, root hormone, etc.



Strategies to Decrease Maintenance



Market Gardening: Why 30-Inch Beds Are the Key to Thriving Crops!

Aerating and Amending Soil Before Planting

Till

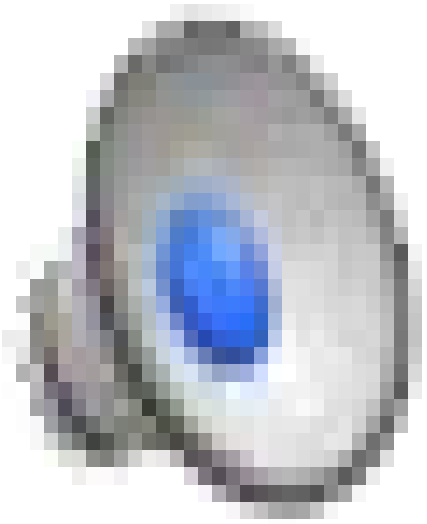
- Use a motorized tiller or hand tools to aerate soil and mix amendments into garden
  - Tools that can help
    - tiller, hoe, cultivator, shovel, etc.
- Pros
  - Mixes soil amendments well
- Cons
  - Can compact soil below the tiller tines (deadpan)
  - Disrupts soil biology
  - Spreads weeds
    - Spread rhizomes
    - Bring seeds to surface

Non-till

- Use a broadfork or garden fork to aerate soil and mix amendments into garden
  - Techniques that can help
    - silage tarp, sheet mulching, tillage radish, building beneficial soil biology, etc.
- Pros
  - Preserves soil biology better
  - Less drainage and weed problems
- Cons
  - Doesn't mix soil amendment as well

Cover entire bed with 1-2'' of compost before tilling or non-tilling

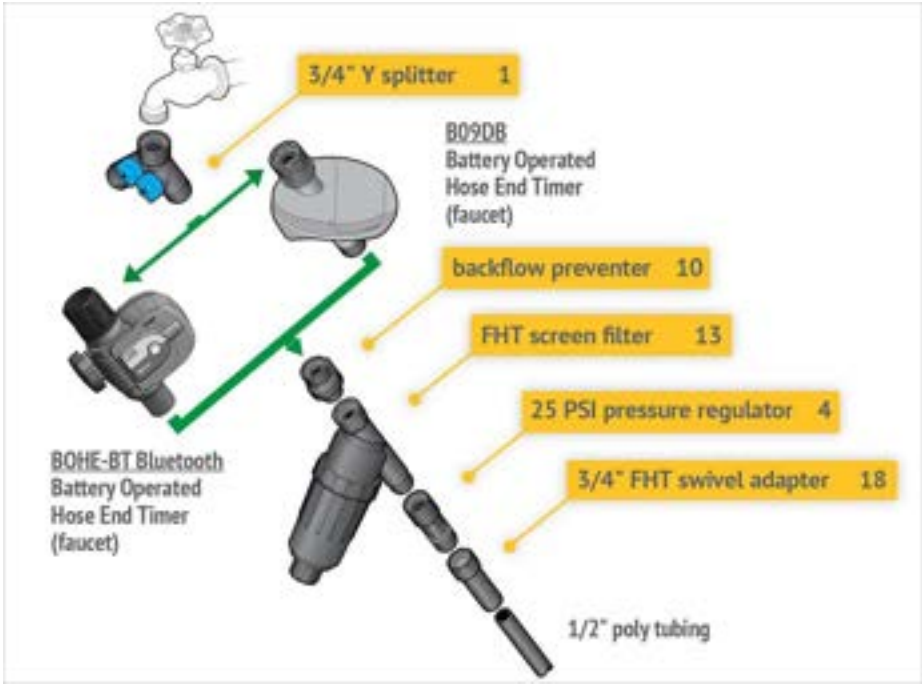
Growing Wisdom: Using A Broadfork To Prepare And Aerate Garden For Planting

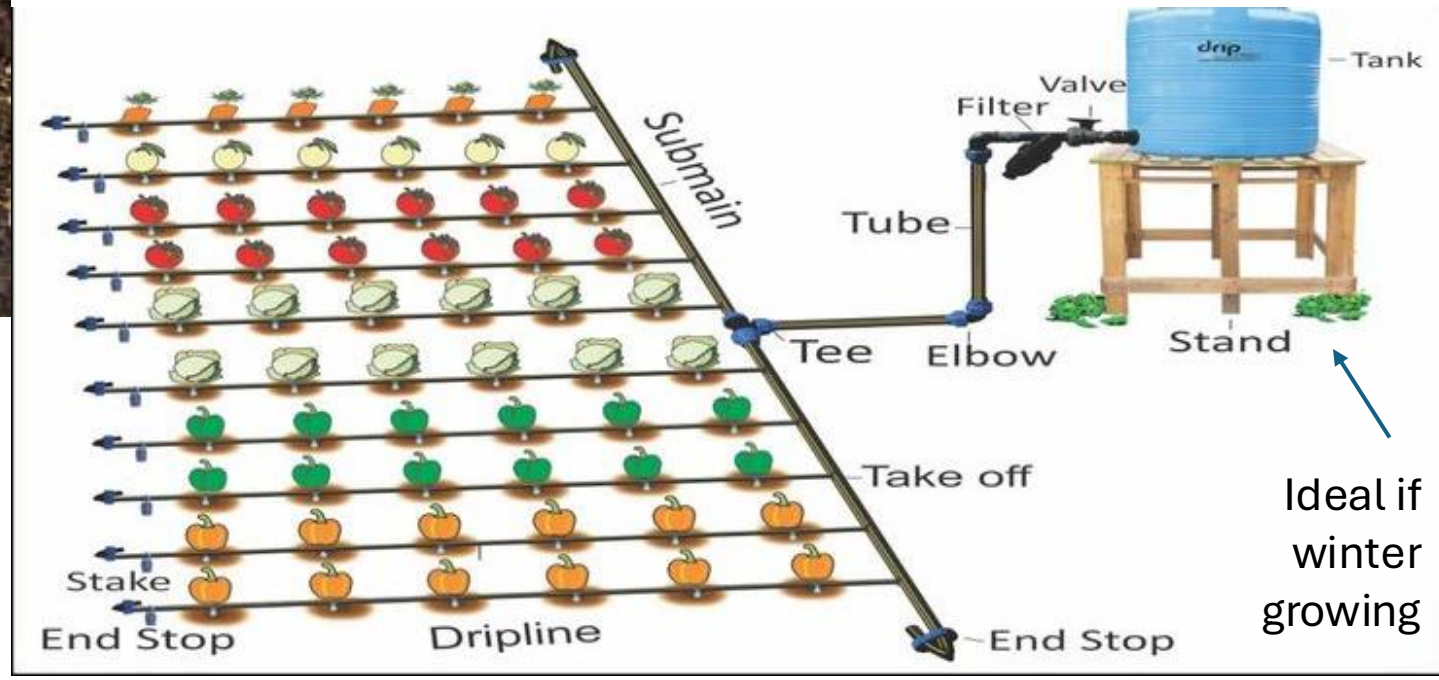


Off-Grid with Curtis Stone : Why I Ditched the Broadfork and Opted for a Game-Changing Alternative
(Garden Fork)

Drip Irrigation with Water Timer

- **Drip irrigation**
  - Applies water slowly at the plant root zone where it is needed most
- **Benefits**
  - Efficient
  - Reduces run off
  - Low maintenance when adding a water timer
    - For large areas get a water timer with multiple zones
- **Challenges**
  - Setting up
  - Figuring out right water timing
  - Adjusting for rain
    - Find one with a rain delay button
  - holes and leaks
  - Lines blowing out



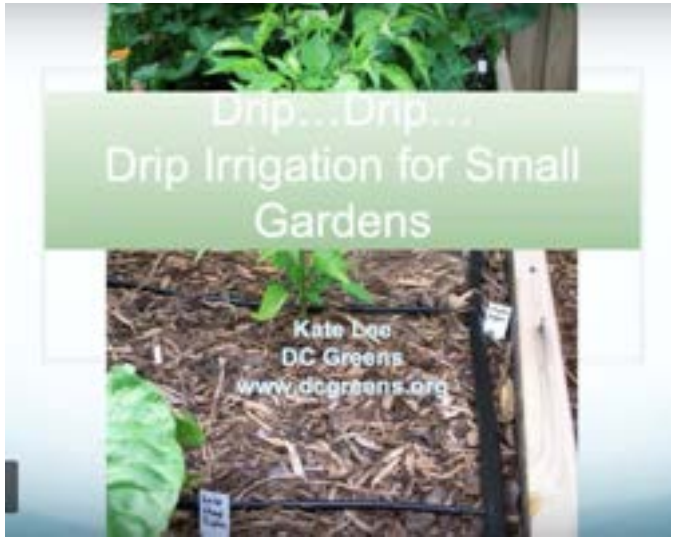


Equipment List

- **Possible parts**
  - Pressure Regulator
  - Filter
  - Adapters
  - Timers
  - Y-valve/ Hose splitter
  - Timers
  - Tubing and Fittings
  - Emitters
  - Pocket punch
  - Timer?
  - Soaker hose?
  - Sprinkler heads?

- **Look for kits**
  - Drip Depot
  - Drip Works

- **Intro to Drip Irrigation Recorded Workshop on**
  - Dugnetwork.org

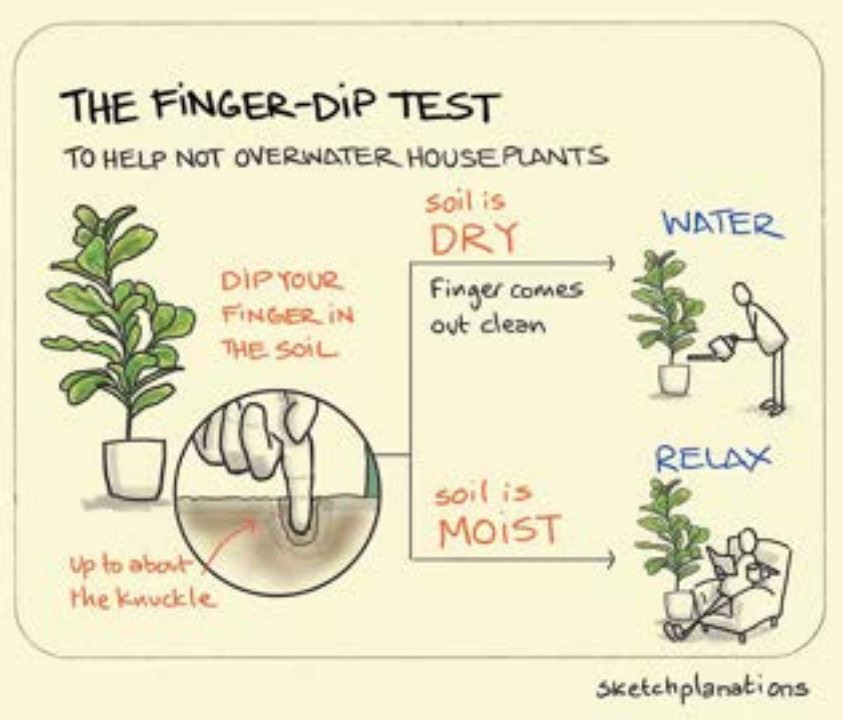


Fine Gardening: Drip Irrigation Basics for the Garden

Figuring Out Watering Schedule

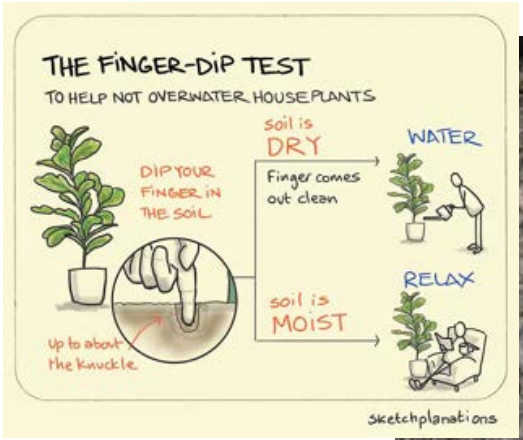
- A garden needs 1-2 inches of water a week
  - Many factors effect this: weather, drainage, evaporation, mulch, etc.
- AVERAGE water needs
  - *Spring/Fall* – Below 75 degrees – water 1 to 2 times a week on average (water timer setting: every 3-4 days)
  - *Summer* – Above 75 degrees – water 3-4 times a week on average (water timer setting: every other day)
  - *Extreme heat* – above 90 degrees – every day as needed (Careful not to overwater!)
    - Consider shade clothes to prevent overwatering for Spring crops
  - *Winter* – 1-4 times a month
- Adjust watering based on
  - Amount of rain, amount of sunlight, temperature, etc.
  - Any rain amount greater than .25 inches is considered (1) watering
    - Set up the water delay button on water timer
    - Can connect a soil moisture meter to a water timer
- Measuring rainwater
  - Rain gauge
  - Weather Underground App.
  - Soil moisture meter
- Water extra when
  - Direct seeding (need to keep soil consistently moist for germination)
  - First week of planting seedlings
- Finger test!!!

soil moisture meter



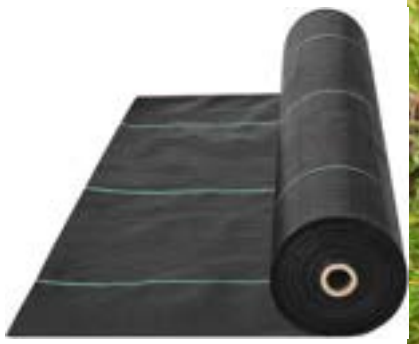
Avoiding Overwatering

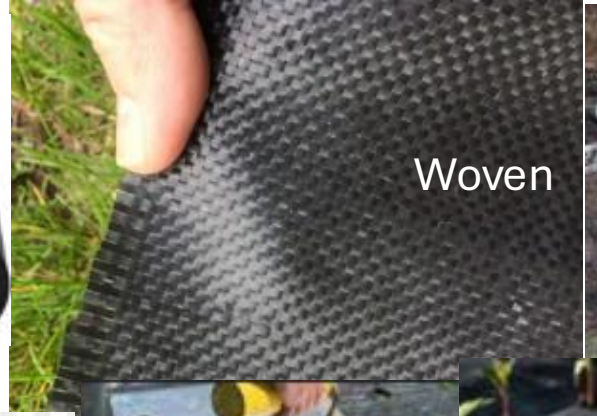
- **Plants need a drying out period between watering**
  - Allows oxygen to get to roots
  - Decreases fungal rot
  - **Don't wait too long to water again!**
- **Overwatering vs underwatering**
  - Often plants look similar
    - Check soil moisture
  - Do plants get better or worse after a deep watering?
- **Symptoms of overwatering**
  - Yellow or wilting leaves
  - Mushy Stem
  - Root rot
  - Green algae on top of soil
  - Soil feels soggy or mud-like
    - Soil should be moist, but not wet
  - Anaerobic smell
- **Monitoring soil moisture**
  - Finger check
  - Soil Moisture meter
    - Can set up with a water timer
  - Set up rain delay on water timers
    - Use after any rain storm greater than .25 inch of
- **For areas that are prone to overwatering**
  - Raise beds as high as possible
    - While digging out walkways
  - Use root shield



Garden Covers

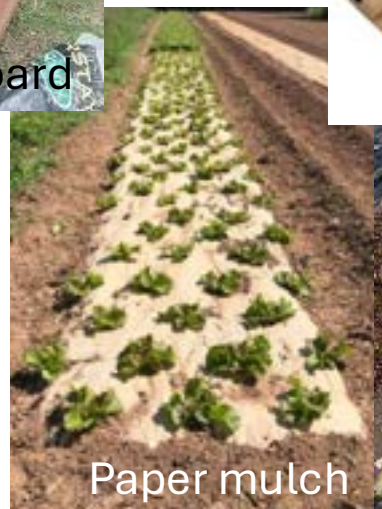
- **Garden covers**
  - Significantly decreases weeding
  - Works great with drip irrigation
  - Can burn or cut holes for plants





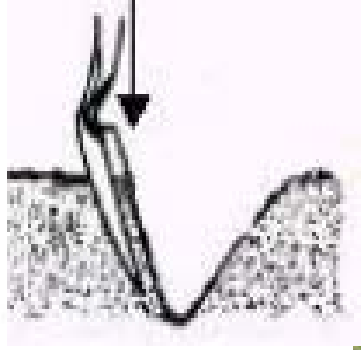
- **Landscape fabric**
  - Also called weed block/fabric/barrier, etc.
  - Woven
    - Allows both water and nutrients to seep through
    - Best choice for veggie garden
  - Non-woven
    - Less permeable than woven
    - Can be hard to remove
      - Weeds attach to it
    - More used for erosion control

- **Biodegradable Options**
  - Cardboard, burlap, paper mulch, etc.
    - Lasts one season before breaking down
  - plastic mulches (BDMs)
    - Till in plastic in Fall
      - Should break down by next Spring



Walkway Cover Options

- **Woodchips are great for walkways**
  - Decrease flooding, decrease mud, temporarily decrease weeds
- **Landscape fabric under woodchips**
  - Effective at controlling weeds for few years
    - Woodchips will eventually turn into soil
      - allowing weeds to reestablish on top
    - Very hard to remove fabric after few years
      - Topdressing beds at end of each year
        - With all woodchips & soil in walkways
- **Organic options**
  - Cardboard, burlap, paper mulch, etc.
  - Effective at controlling weeds for 1 season
  - Don't have to pull up to replace
    - Let break down in soil
      - Speed break down by tilling and watering
  - Must replace every year



Woodchip walkways

Woven Landscape fabric

Putting up woven landsape fabric
Landscape fabric

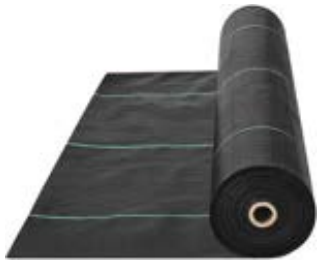
Cardboard walkways

Burning Holes in Woven Landscape Fabric

***Use woven landscape fabric**

- **Make a plywood jig**
  - Length of bed width
  - Measure hole spacing for crop
    - Stagger vs straight rows
  - Hole diameter
    - 1’ spacing for greens
    - 1.5’ spacing for tomatoes
    - Cut hole with holesaw bit for a drill
- **Use the jig as a guide**
  - Burn holes in landscape fabric
    - plumbers torch, flame weeder, etc.
  - Use lines on fabric as a guide for jig
- **Torch safety**
  - Safety zone for person using torch
    - 6’ clearance from other people
  - Never leave torch unattended
  - Let coal down for 30 mins when done
  - Always use in well-ventilated area

holesaw bit



plumbers torch,

Campito do Moreno

www.instagram.com/campitodomoreno/

Lederer Gardens Low Maintenance Rows

Low Tunnels

"Low tunnels are enclosed structures made of plastic, polyethylene, polycarbonate, or fabric that is used to protect crops from sun, wind, excessive rainfall, pest pressure, or cold, and to extend the growing season. Low tunnels are small, portable structures no more than 4 feet in height." USDA NRCS

Winter covers

Pest covers

Shade cloth

Critter covers

Plastic covers

Low Tunnel Specs

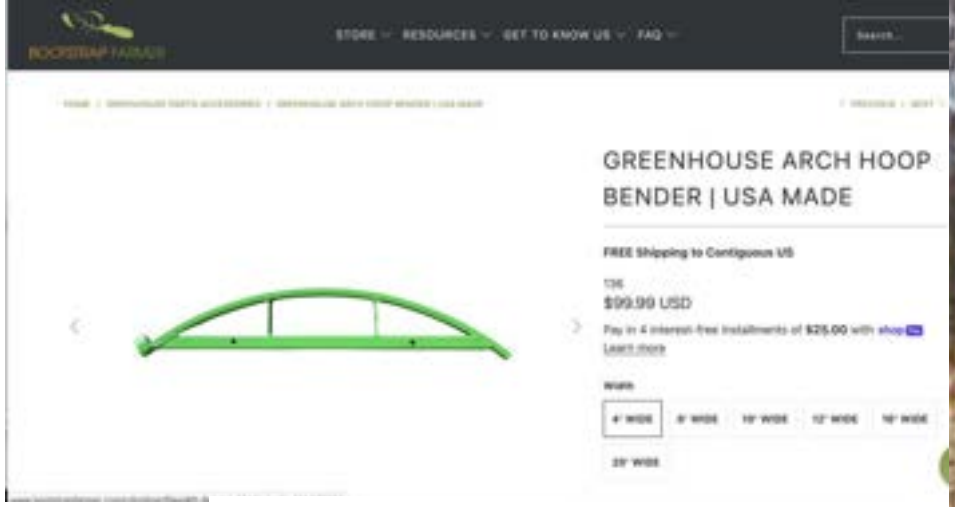
- **Height**
  - Install hoop above tallest mature height of plant
  - Cover should not touch any plant ever
  - At Least 24 inches

- **Hoop Spacing**
  - 2-4 feet wide
    - Depends on
      - How strong the hoops are
      - How wide the bed is

- **Hoop materials**
  - PVC
  - galvanized metal tension wire
  - polyethylene tubing
  - concrete wire mesh
  - super hoops
  - Conduit
  - etc.

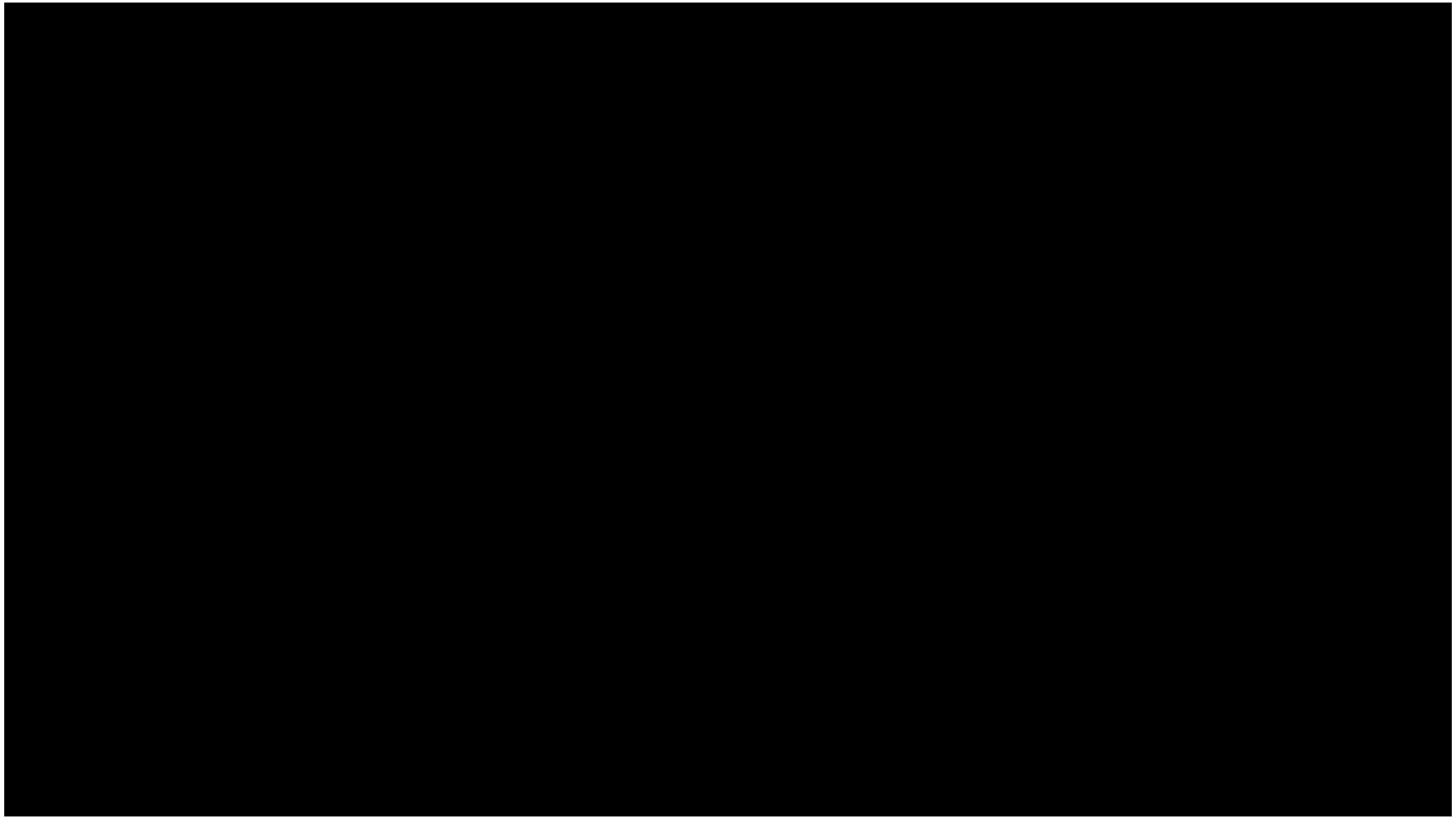
Conduit (EMT)

- Strongest, lasts for many years
- Materials needed
  - ½ inch galvanized steel or Aluminum
    - Often comes in 10’ sections
  - Use hacksaw to shorten
  - Marker
  - specialized hoop bender to bend it
    - Store bought or DIY
    - Different sizes for different widths of the beds
      - 4, 6, 10, etc.
  - Hardware to attached to bed (optional)

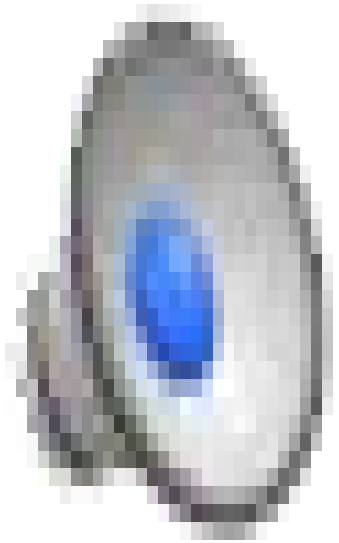


- Directions
  1. Assemble or fasten your hoop bender to a table
  2. Measure halfway on 10’ conduit and mark fully around
  3. Measure 16’’ at each end and mark fully around
  4. Insert one end of the conduit into the loop on the bender to the halfway mark
  5. Bend towards you
  6. Move the conduit a few inches through the hoop and bend again
  7. Repeat until you hit the 16’’ mark (half of the hoop should be bent by now)
  8. Pull conduit out and flip around
  9. Repeat instructions until you have a full hoop

Friends of Wangari Gardens: Making Hoops for our Winter Hoop Houses



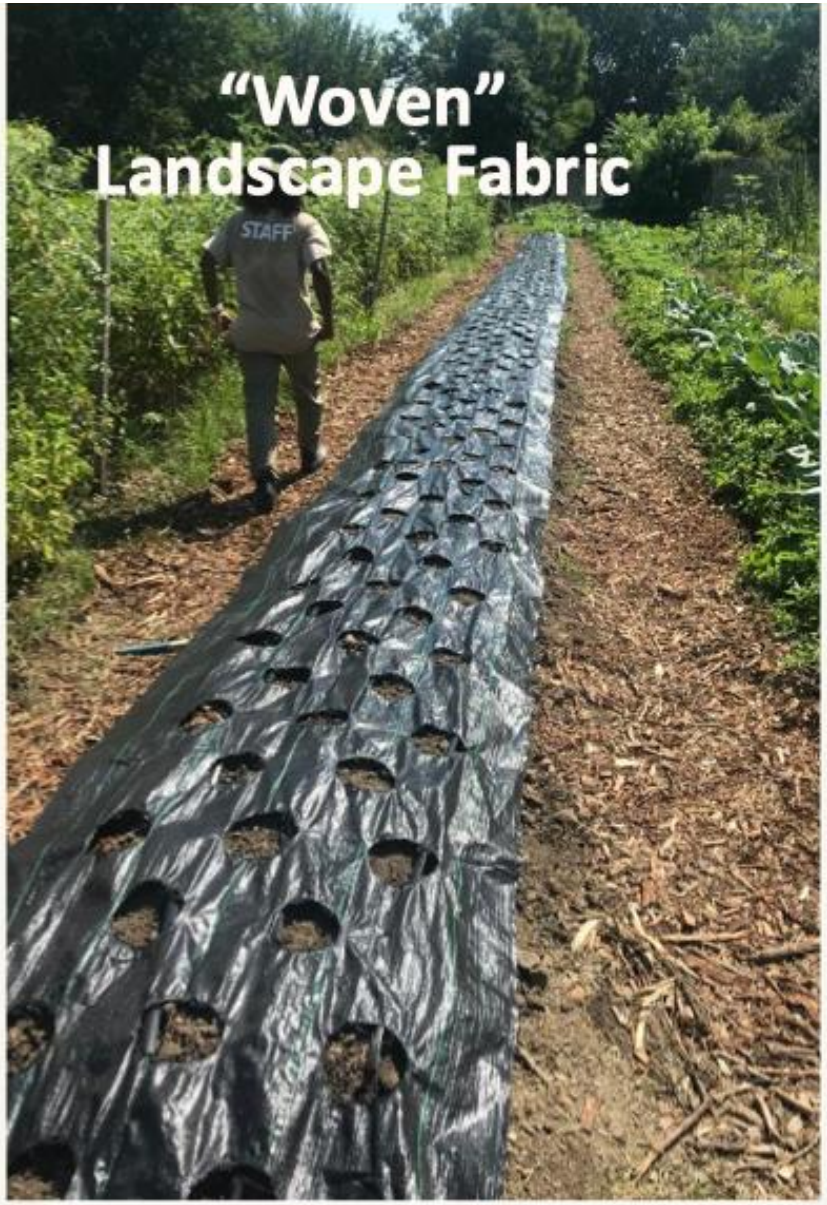
B. Hammill: FREE Conduit Tubing Bender for your Garden Hoop Houses and Low Tunnels

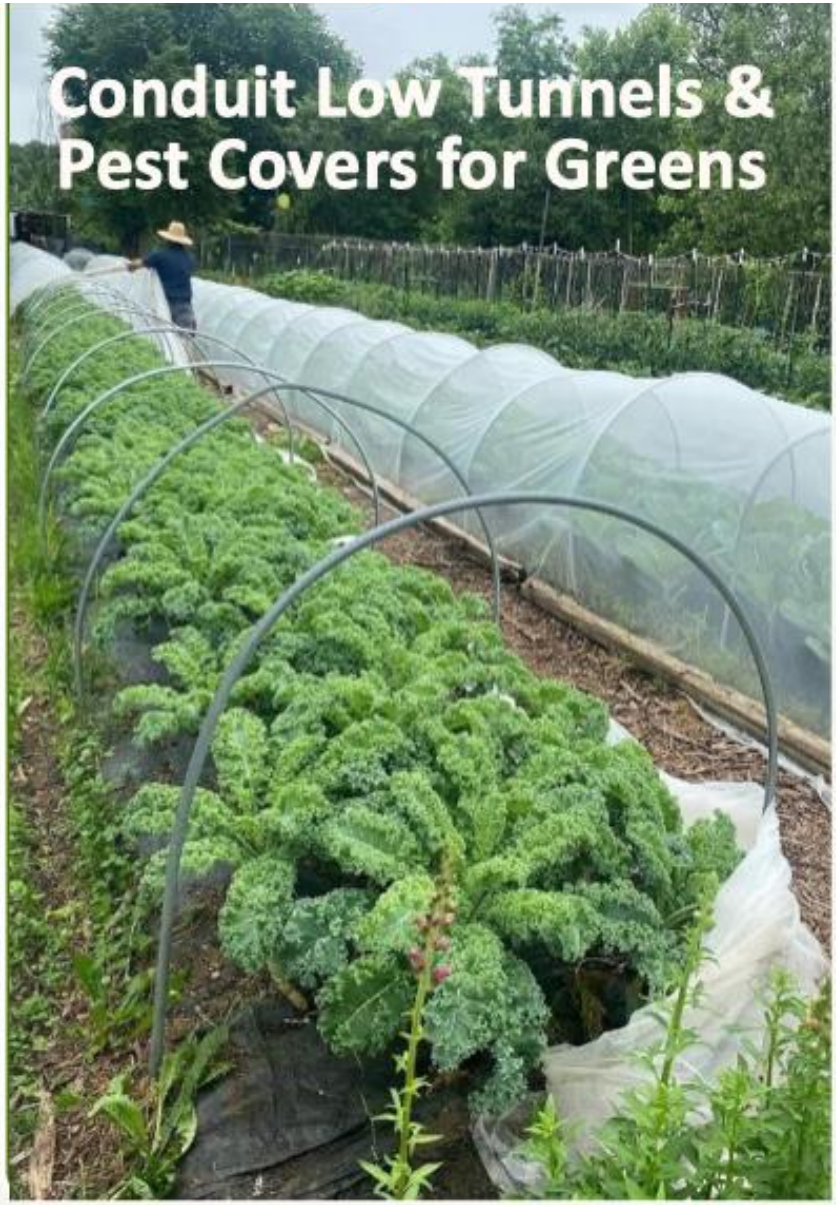


Row Covers for Pest Protection

- **Use a very light fabric**
  - Called pest covers or insect barriers
    - Ie. ProtekNet
  - Or low grade Remay/Agribon
- **Cover immediately after planting**
  - Limit amount of time with covers off
  - If covered plants need help with pollination
    - Take off covers when flowers emerge
    - Unless growing self-pollinating varieties
      - or hand-pollinating
- **If you get holes/tears**
  - Fix with waterproof tape
    - Apply to both sides of hole when fabric is dry

Lederer Gardens Low Maintenance Rows





Keeping Cool Weather Crops Shaded in Summer

- **Cover cool weather crops with a shade cloth**
  - To continue growing in summer heat
  - Use 30-50% level shade cloth
  - Can carry over immature spring crops for fall harvest
    - Ie. Brussels Sprouts
  - Can help reduce transplant shock on seedlings that weren't harden off

- **Protect summer crops against sunscrotch during high heat times**
    - Eggplants, peppers, etc.

- **Hang shade cloth from**
  - Garden posts
    - t-posts, rebar, stakes, etc.
  - Low tunnel hoops
    - conduit, galvanize wire, PVC, tubing, wire mesh, super hoops etc.
    - If possible don't cover the entire hoop to prevent capturing heat
      - Will need clamps to cover partially

- **Knitted fabric vs woven shade cloth**
  - Knitted has better ventilation, more water permeability and can be cut without unraveling

Winter Protections

- **Agribon and Reemay**
  - Breathable row covers that can be used to create low tunnels
    - Windbreak
    - Mild insulation
    - Frost protection
- **Higher insulation numbers**
  - More insulation
  - Less sunlight
    - Agribon 15 allow 90% light
    - Agribon 50 allows 50% light
- **Best aspect: Breathable**
  - Don’t have to remove for circulation
  - Don’t have to remove to water
  - Low maintenance
- **Quick fix for small holes**
  - If there’s a small hole
  - Tie a note between the two sides of the hole to seal
  - Can also sew patches or tape

Silage Tarp

- **Starting a new garden**
  - Cover area with the tarp at least 6 weeks before planting
  - All vegetation is killed by lack of moisture and light
  - Creates heat which sprouts weed seeds near surface which will eventually die

- **Existing beds**
  - Weed management and healthy soil building in between plantings
  - Prevent muddy fields before spring plantings
    - Prepare beds ahead of time and cover them with silage tarps to protect until ready to plant

Stale Bedding

Stale bedding

- Allowing the weed seeds in the top 2-3’’ layer of your soil to germinate to kill them before planting
- Very effective with no till gardens
  - Tilling pulls up weed seeds buried deep

How it works

- Prepare the soil for planting as normal
- Water lightly
- Before planting wait 1-2 weeks for weeds to grow
- Kill all the weeds
- Plant bed

*Make sure there’s no weeds going to seed nearby

Contact

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Questions about DUG Network or DSJ Network

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