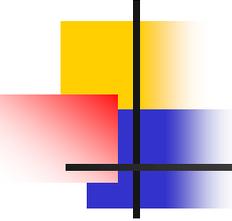




Growing Voluptuous Vegetables!

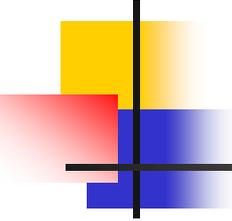
There's More Than One Way

Ron Smith, Ph.D.
NDSU Extension Horticulturist



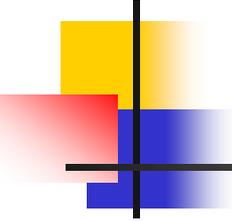
Gardening With A Plan

- n Begin with a list of the vegetables that you like
- n How many in your family will be participating in gardening chores?
- n Decide on the space needed and the “style” of gardening you want to pursue
 - n Conventional/organic
 - n Square-Foot or Raised Bed
 - n Container



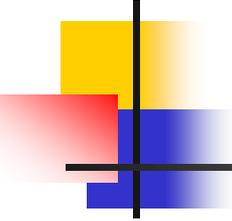
Gardening With A Plan

- n Lay out a plan for vegetable placement
 - n Early Season, Mid Season, Late Season
 - n Resist the temptation of being over zealous in planting too much
 - n Realize the space requirements for each vegetable variety
 - n Determine whether the harvest is for fresh consumption only, canning/freezing, or both



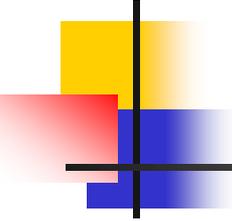
Gardening With A Plan

- n Fruit-bearing vegetables will require the most direct sunshine – 6-8 hours direct
- n Leafy vegetables can be productive in light or partial shade – lettuce, spinach
- n Be aware that some vegetable crops cast shade as they mature; ie – corn
- n If practicing conventional gardening methods, be sure to allow for adequate between-row space for cultivation equipment



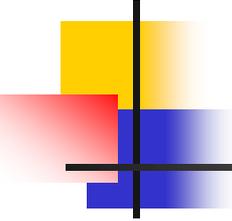
Gardening With A Plan

- n Have the soil tested before planting; pH, soluble salts & organic matter content, minimum; P & K optimal
- n Be sure water source is convenient
- n Consider installing a timed drip irrigation system for better production and fewer disease problems



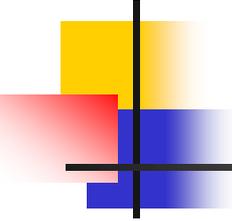
Gardening With A Plan

- n Solarize the soil by covering with black or clear plastic about 10-14 days prior to first planting date
- n If site has never been gardened before, double spade the soil for optimal conditioning and good drainage
- n In working with transplants, harden off about a week before moving to garden site
- n Use only sterile or soil-less media for starting transplants



Gardening With A Plan – Using Transplants

- n The following vegetables are better off being installed as transplants:
 - n Tomatoes, peppers, eggplant
 - n Cabbage, broccoli, cauliflower
 - n Beets, lettuce, onion
 - n Melons, cucumbers, squash – most difficult to transplant due to poor uptake of water from limited root system



Gardening With A Plan - Transplants

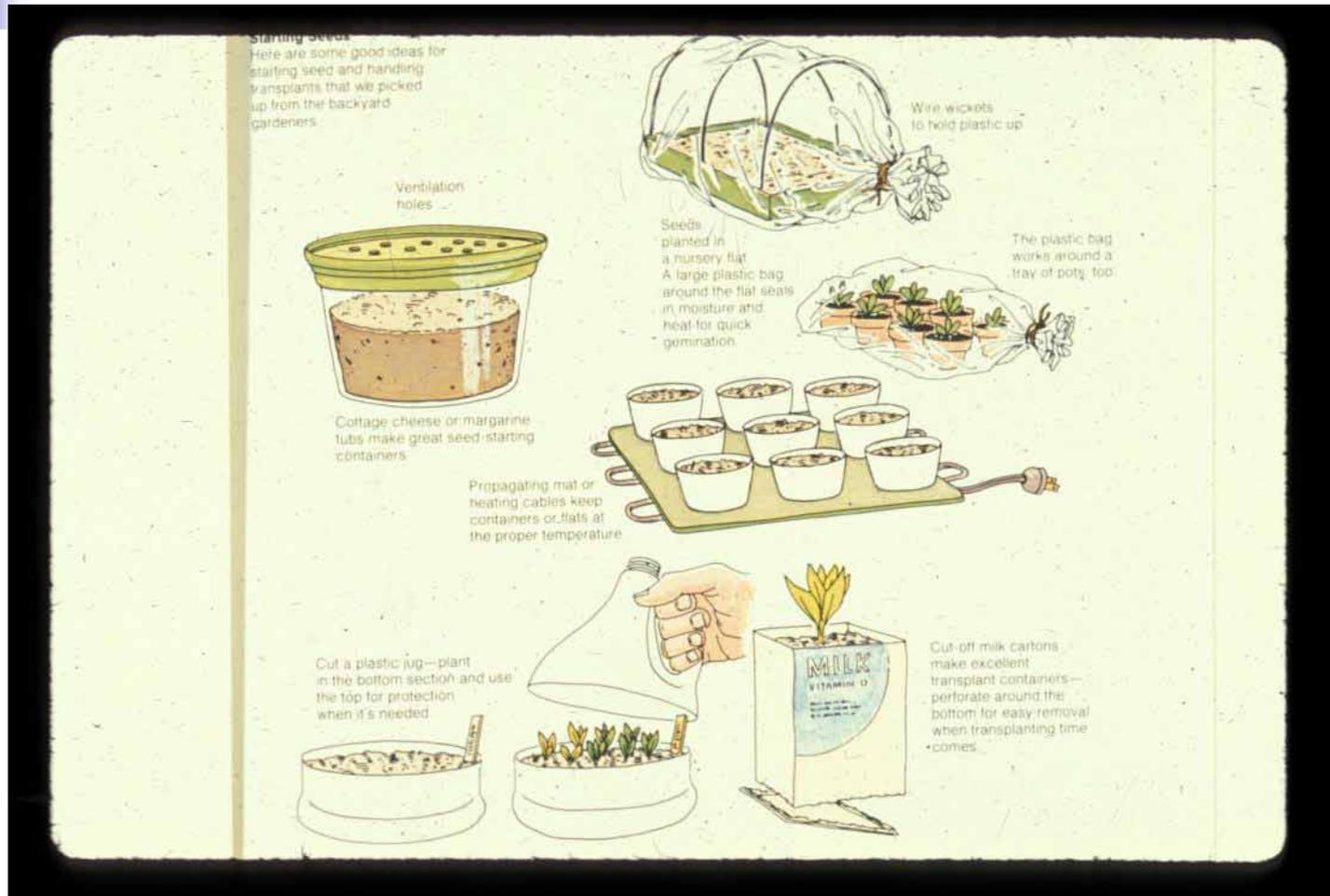
- n Tomatoes – plant deeper than existing root system
- n Peppers – fussy about weather shifts, plant about a week or two later than tomatoes
- n Cabbage, broccoli, lettuce – can be set out earlier due to tolerance of cool weather periods
- n Have a starter solution available – about 1 cup full per transplant – ie – Miracle-Gro, or a blend like 15-30-30

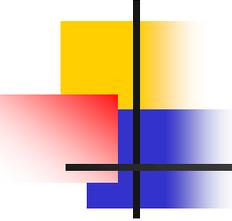
Gardening With A Plan – Seed Selection



Purchase quality seed, don't try to Save seed from the previous year's Crop. If there is seed left over from Current year's sowing, seal and store At room temperature or lower. Expect loss of viability 5-15 or more Percent

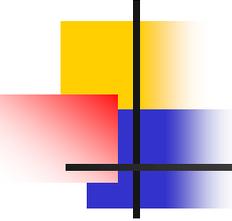
Gardening With A Plan – Methods of Starting Seed





Gardening With A Plan – Direct Seeding

- n Most other crops will be productive in short growing season of northern plains via direct seeding; beans, corn, peas
- n Thinning is a requirement of most direct seeding operations – ie –carrots – otherwise poor development of crop will result



Gardening With A Plan – Seed Starting

- n Cole crops can be started early for early transplanting
- n Peppers should be started about 14-21 days ahead of tomatoes for transplanting
- n Direct seeded crops should have staggered planting dates, to keep everything from maturing at the same time

Gardening With A Plan – Pest Control

– Weeds, Insects, Diseases



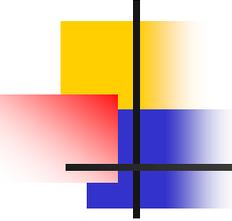
Control pests early; cultivate Weed seedlings before they Become competitive; use least Toxic insecticide – either Organic or conventional, to get Effective control; rouge out Any diseased plants – don't Bother with a fungicide!

Gardening With A Plan – Commercial Production Ideas



This commercial planting of leaf Lettuce varieties shows the French Method of Intensive Gardening. Row Space is minimized to maximize yield; Weed pressure is reduced via Mulching and close spacing of Crops.

This method inspired the Square Foot Gardening technique.



Gardening With A Plan - Aids

- n Consider using hybrids for better productivity and disease resistance; especially All-American Selections
- n Geotextile tunnels for moderating temperature extremes; or frost-caps
- n Blossom-set spray (GA) for superior fruit set and yield
- n Drip irrigation on a timer for more uniform soil moisture

Gardening With A Plan



Container gardening has many Advantages:

- Customized soil mix
- Fewer disease/insect problems
- Virtually no weed problems
- Able to move planters to optimal Positions
- Usually an earlier harvest

Gardening With A Plan

Raised bed gardening
Advantages:
Faster warming of soil
Designer soil mix
Excellent drainage
Easier planting/harvest
Fewer pest problems
Easy construction



Gardening With A Plan - SFG

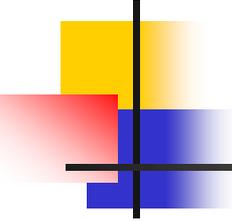


Square Foot Gardening
Allows maximum
Production from limited
Space
Can modify soil or use
Designer soil
Can be in part raised bed
Excellent drainage
Few pest problems
Ease of maintenance
No wasted space

Gardening With A Plan – Succession Cropping

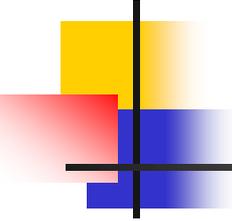
- n Head lettuce grown early spring—harvested in early June
- n Followed by MN midget melons





Gardening With A Plan – Companion Plantings

- n **Beans**--they like celery and cucumbers
- n **Cabbage**--Celery, dill, onions and potatoes are good companion plants
- n **Corn**--Pumpkins, peas, beans, cucumbers and potatoes are nice companion plants
- n **Tomatoes**--Carrots, onions and parsley are good companion plants



Gardening With A Plan – Organic Practices

- n A long term investment in soil conditioning and different management practices
- n Incorporate composted plant and animal residues annually to build up OM content
- n Use organic “teas” as a source of fertilizer
- n Have “Zero-Tolerance” for weeds, diseased plants, or insect pests. Encourage predatory insects

Organic Practices - continued



Photo from Winter Green Farm

- n **Use a legume for green manure incorporation to increase N levels; examples would be soybean, vetch, crimson clover**
- n **Harvest at peak of quality**
- n **Be patient, keep a log of success and any failures**

Organic Gardening – Garlic



Garlic photo – Winter Green Farm, Oregon

Garlic needs to be planted in the Fall around Columbus Day, for Maximum clove development, at A 4" depth. Keep the best for Replanting.

Gardening With A Plan – Drip Irrigation



Point – source or non-point Source systems are easily installed & maintained; provide a more uniform soil water profile with greater root development, and reduced disease problems

Gardening With A Plan – Drip Irrigation Automatic Control



Automatic controllers will “remember” To shut off, and with a few modifications Turn on when the water tension gets too High in the soil. With a more consistent Water level being maintained in the soil A more voluptuous vegetable crop wil Result!

Gardening With A Plan - Yields



? – what do these
3 crops have in
common?



Gardening With A Plan - Crops



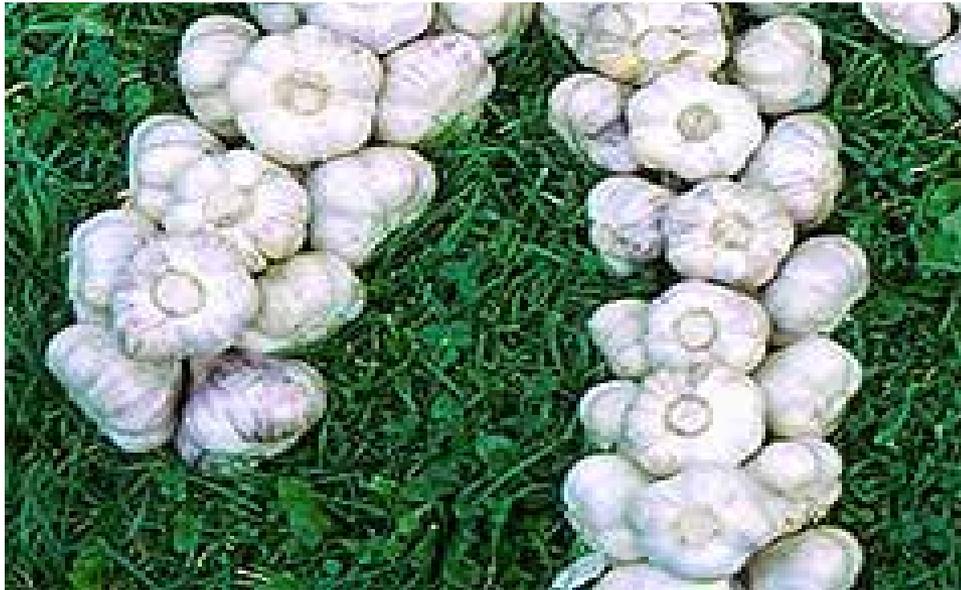
Veggies like cucumbers should be direct Seeded when soil temperatures warm to 60 degrees or better. Can be trellised, or not; often benefit from hormone sprays to increase fruit set. Do not allow fruit to become over-mature or production will shut down and quality sacrificed

Gardening With A Plan - Crops

Eggplant is particularly sensitive to cold and should be planted later than other members of the Solanaceae Family. This is one of the most sensitive crops to Verticillium wilt, so should be carefully rotated with vegetables not in the same family



Gardening With A Plan - Crops



Garlic is a fall planted crop – around Columbus Day. Harvest when the foliage begins to flag, cure for a day or two, then store in a cool location. Save the largest cloves for replanting. A crop vulnerable to weed problems which can affect crop quality and size.

Gardening With A Plan - Crops



Crops like winter squash and summer squash may need hand pollination in order to set decent fruit; to attract pollinating insects grow herbs like Hyssop or borage as a companion crop

Gardening With A Plan - Crops

Suitable varieties
are
Sweet Million,
Juliet,
Sugary



**Small fruited tomato varieties
make excellent hanging baskets.**

Garden With A Plan – Be Creative!



"Cages" can be used with containers to support such crops as tomatoes, cucumbers and pole beans.



A potato bag—a unique way to grow potatoes.

Gardening With A Plan – Perennial Crops



**Perennial crops like rhubarb
And asparagus, should be
Located in an area of the garden
That will not interfere with the
Annual plantings**



Gardening With A Plan - Crops



Rutabagas get no respect, yet make an excellent crop
For fall harvesting, stores well, and tastes better than
It sounds!

Gardening With A Plan – Don't Forget flowers and Herbs!



Flowers like sweet peas and herbs like basil, Are easily grown, and add diversity to your Vegetable garden; they also attract pollinators!

AAS Winner...
Thai Basil 'Siam Queen'



If this doesn't motivate you to grow voluptuous veggies.....



Enjoy Your Voluptuous Vegetables!



Questions?