

Site Assessment & Light:

Food Crops need sunlight!

Gardens need 10 hours (on 6/21)

April – September 8 hours of the 12 available needed for most food crops to grow

5-6 hours is not enough for all crops!

Crops for Shady Spots:

Salad Greens (especially in July & August)	Broccoli	Kale
Spinach	Peas	Herbs
Arugula	Beets	Scallions
Mustard Greens, Asian Greens	Radishes	Cucumbers
	Chard	Squash

What to Grow?

Grow what you like

Grow varieties that are hard to find

Grow crops that are high value

Grow crops that are easy, especially if you're a new gardener

Starting plants Transplants vs. Direct seeding**Direct Seeding**Pros

Less expensive

Seed available from multiple sources

Great varietal selection

Cons

Final # of healthy plants unknown

May not provide uniform stand

TransplantsPros

Earlier, faster growth than seed

Improved final stand of plants

Cons

Costs more, Less varietal selection

May have to be grown by you

May have to be protected from early season frost

Companion Planting: Two plants have can provide benefits to each other. Polycultures in Space.

Roots of Companion Planting

- Historical Observation
- Horticultural Science
- Sensitive Crystallization Tests

Three sisters ~ Ancient Companions

Reasons for Companion Planting:

- Flavor enhancement
- Security through Diversity
- Hedged investment
- Physical Spatial Interactions
- Utilizing multiple layers
- Nurse Cropping
- Trap cropping
- Nitrogen fixation & Fertility
- Pest Repelling
- Pest Suppression
- Beneficial Habitats
- Pollinator and predator recruitment
- Positive Hosting
- Pattern disruption

Companion Planting Options

Row intercropping: Growing two or more crops at the same time with at least one crop planted in rows

Strip intercropping: Growing two or more crops together in strips wide enough to permit separate crop production but close enough for the crops to interact

Mixed intercropping: Growing two or more crops together in no distinct row arrangement

Relay intercropping: Planting a second crop into a standing crop at a time when the standing crop is at its reproductive stage but before harvesting

Spatial Interactions: Trellising & Teepees

Crop Rotations

Ideally the 2 sequential crops are:

- Different botanically
- Do not make the same demands on the soil for nutrients
- Do not share the same diseases or insect pests

Cornercopia's Current Crop Rotation Plan:

We will not plant the crops from the same family back to back in the same season or from year to year.

Crop Families

- Brassicas
- Cucurbits
- Allium
- Umbel
- Chenopods
- Legume
- Solanum
- Poaceae (Grass)
- Aster

Brassicas / Mustard

- Broccoli
- Cabbage
- Kale

- Collards
- Mustard
- Cauliflower
- Brussel Sprouts
- Pak Choi

Cucurbits

- Cucumber
- Summer Squash
- Winter Squash

- Pumpkins
- Zucchini
- Melons
- Gourds

Allium

- Onions
- Shallots

- Garlic
- Lilies
- Leeks

Chenopods / Goosefoots

- Chard

- Spinach
- Beets

Solanums / Nightshades

- Tomatoes

- Potatoes
- Eggplant
- Peppers

Legume Family

- Legumes

- Beans
- Soy Beans

Garden Planning

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- Peas
- Peanuts

- Clovers
- Vetch

Grass Family

- Corn
- Popcorn

- Wheat
- Rice
- Oats
- Rye

Umbel

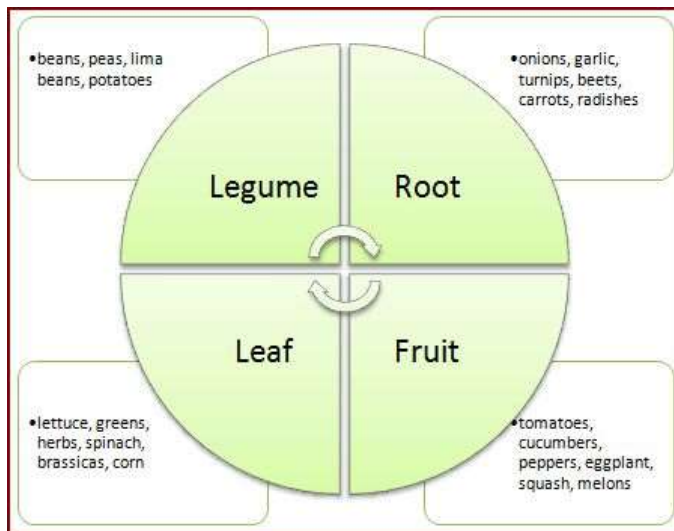
- Carrots
- Parsnips

- Parsely
- Dill
- Cilantro
- Celery

Simple Crop Rotation:

1. Brassicas
2. Roots
3. Legumes
4. Others
5. Cucurbits

Another Simple Crop Rotation



Simple Crop Rotation:

Year	Group	Members	Uses
1	Legumes	Peas, Beans, Cover crops: Clovers, Vetch, Alfalfa	Fixes (adds) Nitrogen

2	Leaves	Lettuce, Spinach, Kale, Brassicas, Chard, Corn, Herbs	Nitrogen
3	Fruits	Tomatoes, Peppers, Eggplants, Squash, Cucumbers, Melons	Phosphorus
4	Roots	Onions, Garlic, Turnips, Beets, Carrots, Radishes	Potassium

Rotation based on Nitrogen Use

Heavy Feeders:

- Cucurbits
- Nightshades
- Pumpkins & Corn

Medium Feeders

- Greens
- Brassicas

Light Feeders

- Alliums
- Roots
- Heavy Givers
- Legumes

2 Crop Rotations

Year	Block
1	Brassicas
2	Corn & Pumpkins
3	Legumes & Roots
4	Alliums

Year	Block
1	Greens
2	Cucurbits
3	Fallow / Covercrop
4	Nightshades

Most important: Crop Rotations

- Keep records of what you plant where each year so that you can rotate families
- Can be as elaborate and complex or as simple as you want.
- Helps prevent pests, diseases, even nutrient uses
- Adding compost to you soil can help alleviate problems if you can't rotate crops.

Successions: The sequential growing of different crops in a single space. Polycultures in Time.

Creating Successions or Relays

Continuous harvest & growing of crops throughout the season

Utilizing the same space for multiple crops

Timing the planting of crops so that continuous harvest of that crop is possible

Succession Plantings

the sequential growing of crops in a single bed during a single season (2-4 crops)

Ex: Spinach –Lettuce – Radishes

Ex. Peas – Parsnips

Ex. Cilantro – Radishes – Lettuce

Easiest to do with short season crops

Two-way Successions

- Early Peas followed by Carrots
- Spinach followed by Eggplants
- Bunching Onions followed by Chard
- Lettuce followed by Turnips

Three-way Successions:

- Peas- Broccoli- Spinach
- Bok Choy- Bush Beans – Lettuce
- Spinach- Cucumbers- Radishes
- Onions- Radishes- Lettuce
- Radishes- Carrots- Spinach

Four-way Succession plantings

- Peas- Bok Choy- Spinach- Garlic (for next year)
- Spinach- Radish- Pea Shoots – Arugula
- Scallions- Lettuce- Spinach- Radish
- Lettuce- Cilantro- Turnips- Spinach

Successions

Approximately 175 days between April 20th and October 15th in MN

- Beets 55 days
- Lettuce 45 days
- Scallions 65 days
- Spinach 40 days
- Radish 30 days
- Peas 60 days
- Broccoli Raab 42 days

High Yielding Crops (More than 100 lbs/ per 100 sqft)

<ul style="list-style-type: none"> • Leeks 260# • Chard 200# • Zucchini 160# • Parsnips 119# • Radishes 100# • Carrots 100# • Turnips 100# 	<ul style="list-style-type: none"> • Cucumbers 99# • Lettuce 95# • Potatoes 92# • Tomatoes 83# • Cabbage 83# • Strawberries 71# • Rhubarb 70#
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Top Ten Crops for Caloric Yield per 100 sqft

Vegetable Crop	Calories per 100 sq ft
Rutabaga	35,400
Parsnips	34,867
Leeks	29,520
Potatoes	27,900
Swiss Chard	20,800
Lima Beans	17,998
Collards	17,200
Onions	15,700
Beets	15,070
Brussels Sprouts	13,348

Low Yielding lbs/100ft²

- Raspberries 12#
- Peas 17#
- Corn 22#
- Beans 23#
- Basil 35#
- Grapes 38#
- Spinach 42#
- Parsley 45#
- Kale 46#
- Winter Squash 50#
- Garlic 50#
- Melons 50#
- Beets 55#
- Eggplant 55#

High calorie content per pound & High yield per
area crops:

Potatoes
Garlic

Leeks
Jerusalem Artichokes
Parsnips
Sweet Potatoes
Salsify

How I plan:

Make a list of the crops I want to grow

Allocate Space / Crop

Determine frequency of plantings, first planting dates for each crop, and subsequent planting dates for
succession crops, map out space

Follow the plan week by week

Keep records so you know what worked and what didn't.

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