

Fall and Winter Vegetable Gardening

In the Central Highlands



Our Outline for Today

- Introduction
- Why Plant in the “Off-Season”
- How Fall-Winter Gardening Differs
- Location, Location, Location!
- Let’s Talk Protection
- Vegetables that Like it Cold
- Plant Choice Considerations
- Prepping the Soil
- A Gardening Alternative to Vegetable
- Fresh Vegetables All Winter – a little secret
- A Look Toward Spring



Why Plant in the “Off-Season”

- Year round garden fresh veggies
- Different selection of veggies
- Extend edible production of seasonal crops
- Improve the soil for the next season
- Avoid seasonal binge gardening



How Fall-Winter Gardening Differs

- Most plants are started from seed
- The varieties aren't the same as summer
- Plants grow much slower
- Less water is required
- Less weeding is needed
- Cold protection is required
- Plants are exclusively grown for food – not beauty



Things to Consider

- Where am I going to plant?
- What am I going to plant?
- Where am I going to get my seeds?
- What cold protection am I going to use?



Location, Location, Location!

- What's currently planted in your garden space?
- Where can you provide adequate protection?
- Where does the Fall/Winter sun shine the most?
- Full sun – 8 hours isn't absolutely necessary
- Midday sun – 10 a.m. to 3 p.m. is critical
- Veggies that tolerate shade:
 - Greens, Broccoli, Cauliflower, Root crops
- Growing in pots is challenging
- Rotation is critical!



The Key to Healthy Plants is Rotation!

ROOT

FRUIT

GREEN

BEAN



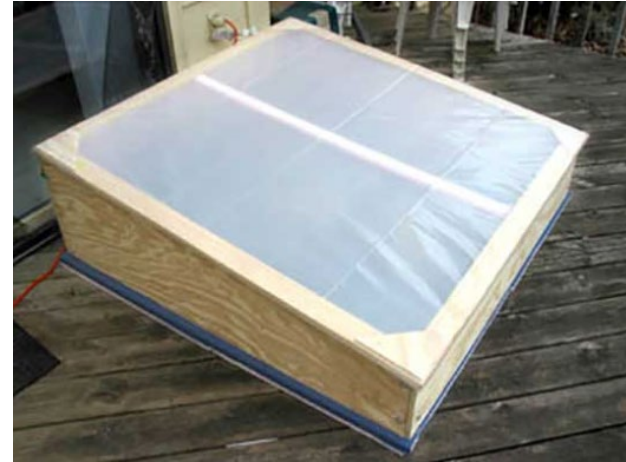
Lets Talk Protection

Alternatives include:

- Cold Frames
- Low Tunnels
- Floating Row Cover
- Walls of Water
- Cloches & Hotcaps



Cold Frames



<https://www.epicgardening.com/cold-frame-plans/>

Low Tunnels



Per each three to six feet of tunnel:

2 18" pieces of 1/2" rebar

1 7-8 ft. length of 3/4" PVC

2 3/4" PCV clamps

1 piece of 3/4" PVC length of the bed

Cover :

83" wide Agribon floating row cover –
the length of tunnel plus 8ft or
similar product

Always remove if the temps rise about 55 or it's raining
Vent if temps are above 40

Youtube Video: [How to Protect Plants from Frost -- Low Tunnels](#)

Row Cover

- **Row cover** is any transparent or semi-transparent, flexible material, like fabric or plastic sheeting, used as a protective covering to shield plants, usually vegetables, primarily from the undesirable effects of cold and wind, and also from insect damage.
 - **Rated by**
 - **Light Transmission**
 - **Cold Protection**
- **Floating row cover** is extremely lightweight row cover fabric that can be placed directly over plants, without need for a supporting framework, instead being simply anchored to the ground against wind.



Walls of Water



Hotcaps and Cloches



1. Can be made from almost anything
2. Should be anchored or staked
3. More difficult to water



Vegetables that Like it Cold

Brassica Family

1. Brussel Sprouts
2. Cabbage
3. Broccoli

Root Vegetables

1. Carrots
2. Turnips
3. Radishes
4. Beets
5. Parsnips
6. Rutabagas
7. Potatoes

Other Vegetables

1. Peas
2. Sugar Snap Peas

Onion Family

1. Leeks
2. Garlic
3. Onions

Leafy Greens

1. Kale
2. Lettuce
3. Mustard
4. Swiss Chard
5. Spinach
6. Collards
7. Mache
8. Claytonia



Cold Hardy Vegetable Varieties

Leeks – darker, blue-green varieties – Bleu de Solaise, Bandit

Carrots - Scarlet Nantes, Autumn King

Spinach – savoy types – crinkled leaves – Winter Bloomsdale, Tye

Collards – Blue Max

Parsnips – Hollow Crown

Cabbage – savoy types – dark crinkled leaves – Marabel, January King

Swiss Chard – green or white varieties – Fordhook Giant, Verde de Taglio

How to find seeds:

Search your favorite site for key words: cold tolerant

Always check recommended planting time – should include “Fall”

Check soil temperatures for planting

www.sustainablemarketfarming.com – search cold hardy vegetables



Plant Choice Considerations

- Time to germinate
- Time to maturity
- Height of plant
- Seed versus plant



Maturing Patterns

Quick Maturing (30-60 days)

Beets, 1.5'

Mustard, 1.5'

Spinach, 1'

Leaf Lettuce, 1'

Radishes, 1.5'

Turnips w/greens, 1.5'

Moderate Maturing (60-80 days)

Broccoli, 3'

Carrots, 1'

Kohlrabi, 1.5'

Chinese Cabbage, 1.5'

Green onions, 1.5'

Parsley, 1.5'

Slow Maturing (80 days +)

Brussels sprouts, 2'

Cabbage, 1.5'

Garlic, 1'

Bulb onions, 1.5'

Cauliflower, 3'

Parsnips, 3'



Temperature is a Factor

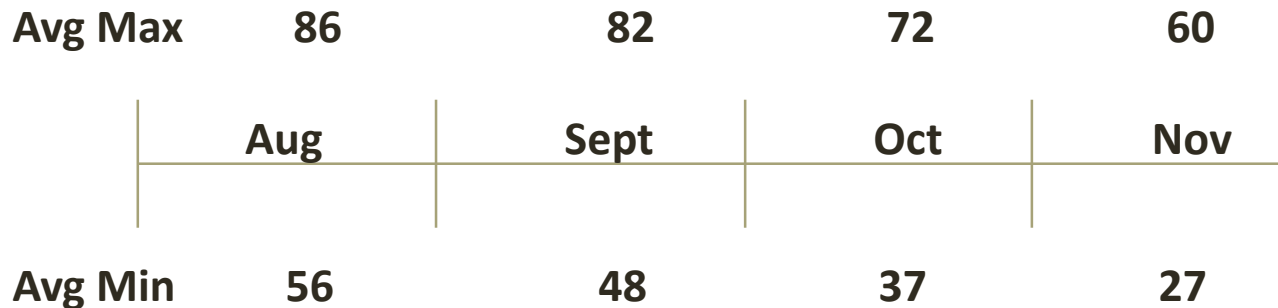
Prescott Spring Freeze Dates and Probabilities* (32.5 degrees F)

Earliest	90%	80%	70%	60%	50%	40%	30%	20%	10%	Latest
4/14	4/26	5/3	5/8	5/13	5/18	5/21	5/26	5/31	6/2	6/17

Prescott Fall Freeze Dates and Probabilities* (32.5 degrees F)

Earliest	10%	20%	30%	40%	50%	60%	70%	80%	90%	Latest
8/23	9/20	9/25	10/1	10/5	10/11	10/14	10/16	10/21	10/27	11/15

Average Fall Minimum and Maximum Prescott Temps by Month



Putting it All Together

- Plant Slow Maturing Vegetables in August (by middle)
- Plant Moderate Maturing Vegetables in September (anytime)
- Plant Quick Maturing Vegetables in October (early)
- Seeds typically germinate at soil temperature of 40° or warmer



Prepping the Soil

- Fall and Winter garden soils need to be enriched
- Best to use 2-3 pounds of a slow release fertilizer per 100 square feet of garden area
 - Both chemical and organic varieties are available
- You want a higher potassium count (the K in NPK) because potassium helps to protect from winter cold



An Alternative to Vegetables

Cool Season Cover Crop and Green Manure

- Plant combination of hairy vetch (a legume) and cereal rye in the fall (October)
- Inoculate vetch seeds with appropriate inoculum (seed catalogs have it)
- Mow and turn into soil 3-4 weeks before planting



Hairy Vetch



Cereal Rye



Cover Crop in April



Cereal rye and hairy vetch cover crop



Nodules
formed by
Rhizobium

Working the Cover Crop



Working the Cover Crop



Fresh Vegetables All Winter
“a well kept secret”

GROW INDOORS!



Indoor Growing Systems

- Soil based systems
- Hydroponic – Plants cultivated in a nutrient solution rather than soil
 - Floating – plants suspended in water
 - NFT (Nutrient Film Technique) – shallow stream of nutrients continually flowing over root system
- Aeroponic – Growing plants in the air with the use of a nutrient solution misting system



Table Top Hydroponic Systems



www.aerogarden.com



Aeroponic System



<https://www.towergarden.com/>



Microgreens



- Easy to grow inside
- Grows quickly
- Lot of flavor, lots of variety

A Look Toward Spring

- Use your “winter growing knowledge” to get ready for your spring-summer garden
- Remember to plant long lead time vegies early
- Green manures add extra layer of protection
- Use season extenders for spring plants
- Get your starts growing inside and harden off
- Plant earlier than “Mother’s Day



Questions?

Thank You!

