

## Starting and Transplanting vegetable crops

### Easily survive transplanting

Beets  
Broccoli  
Cabbage  
Chard  
Collards  
Strawberries  
Lettuce  
Peppers – must be transplanted in CO  
Tomatoes – must be transplanted in CO  
Eggplant – must be transplanted in CO

### Require care in transplanting

Carrots  
Kale  
Kohlrabi  
Watermelon (does better than other melons generally)  
Spinach  
Parsley  
Mustards  
Celery – requires care in transplant, but recommend transplanting in CO due to long season growing needs (very slow growing).

### Difficult to transplant/not recommended

Beans  
Corn  
Cucumbers – especially susceptible to transplant shock  
Cantaloupe and other melons – especially susceptible to transplant shock  
Okra  
Peas  
Squash – especially susceptible to transplant shock  
Trunips

Most of these plants will not perish upon transplant, but will experience transplant shock. Transplant shock occurs when moved plants do not put on any growth for a significant period of time after transplant. Although the plants will eventually come out of transplant shock and resume growth, more vigorous plants are often just started from seed. Starting these plants from seed allows them to produce a larger root system, put on more vegetative growth and eventually produce more fruit. Significant savings in cost and effort also comes with direct seeding these crops (transplants are expensive to buy and it takes more time and resources to grow and move your own starts).

### Transplanting

Advantages	Disadvantages
Can control climate	Costs including infrastructure, containers and soil
Season extension	Increased labor and skill needed
Easy to manage and monitor seedlings intensively	Not practical for all crops
Rapid crop succession in garden	More total days of growth
Developed fibrous roots take up a lot of nutrients and moisture	Concentrated density of a lot of seedlings of the same type may increase risk of crop damage and loss due to pests and pathogens
Seed and resource efficiency	Higher reliance on nonrenewable resources and materials

### Direct Sow

Advantages	Disadvantages
Good for tap root crops	Subject to weather and growing season
More effective at larger scale	Often needs thinning (some seed waste)
Often heightens hardiness	Inconsistent germination
Less time to grow	Crop failure risk associated with temperature and weather events
Decreased labor and materials	Localized climate challenges
Variety of seeding techniques to choose from	Crop variety limitations

A note about peat pots in CO climates: although they can be a good resource in certain places (depending on the renewability of the peat resource – never go for high mountain peat), peat pots used in transplant can cause water retention and capture issues if not removed before placing a transplant in the garden. Due to the dry climate here, peat pots do not decompose quickly and can in fact wick water away from plant roots growing inside. A peat pot also creates a soil texture interface that depending on watering method may cause water to go around the plant itself instead of reaching roots.

### Heirloom vs. Hybrid

Heirloom	Hybrid
Genetic diversity offers possibility of disease resistance	Higher disease resistance
Flavor variance	Uniform produce
Varietal tolerance to environmental challenges	Reliable performance
	Higher sugars – have a slower conversion of sugar to starch.

Hybrids: bred for consistency in size, shape and color. Also have a longer shelf life and are resistant to insect pests and disease. Not necessarily bred for flavor. Created by plant breeders modifying genetics by crossing plants with desirable characteristics.

Heirloom: Open pollinated varieties. Older cultivars often regarded for higher flavor profiles.