

Growing Vegetable Transplants

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Why Grow Your Own Transplants?

- Grow what you want
- Transplants available when wanted
- Fun to grow



Photo Credit: Mattingly,
Extension Master Gardener

You Will Learn About:

- Basic materials
- When to start planting seed
- How to start seeds
- Growing conditions needed:
 - Light requirements
 - Temperature
- Transplanting
- Hardening off plants



Basic Materials

- Containers
- Soilless media
- Lighting
- Seeds



Photo Credit: Annette Meyer Heisdorffer

Containers: Drainage Hole Needed

- Paper cups
 - Styrofoam cups
 - Plastic jug bottoms
 - Food carryout containers
 - Milk carton bottoms
 - Plastic pots
 - Peat pots
 - Peat pellets
 - Netted coir pellets
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- Plastic trays or container to handle water



Photo credit:
Annette Meyer Heisdorffer

Peat Pots



Trays



Soiless Media

- Seed-starting mix
- Peat pellets
- Coconut fiber—coir netted or compressed
- Potting soil



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Lighting

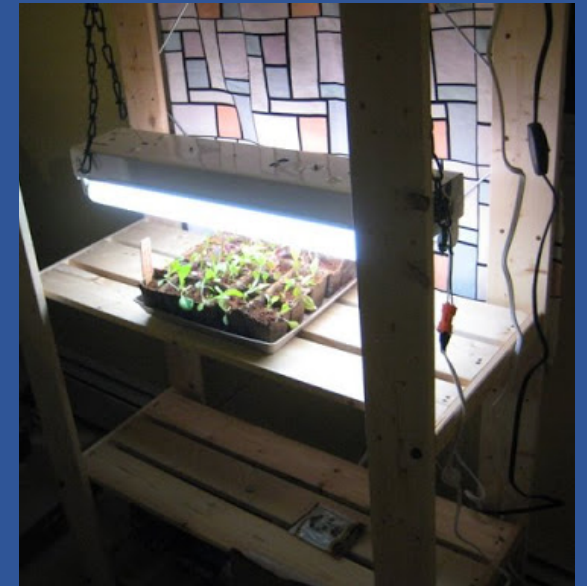
- Windowsill—not enough light



Photo credit:
Annette Meyer Heisdorffer

Lighting

- Cool white fluorescent lamps
- Cool white and warm white fluorescent lamps
- Cool white and plant growth fluorescent lamps
- Plant growth fluorescent lamps
- LED—light emitting diode



Lighting System



Photo Credit: Mattingly,
Extension Master Gardener



Photo credit:
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Seeds

- Start with high quality seed
- Look for date on seed package
- Previous year's seed may have a reduction in germination rate—plant more seed
- Determine when to start seed by counting backward from the date wanted to plant in the garden.
- Determine the estimated number of weeks to produce a good transplant for that crop.



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Estimated Time for Starting Seeds— Western Kentucky

Plant	Time	Latest Date	Earliest Date	Garden
Cabbage	5-7 weeks	February 8	January 25	March 15
Broccoli	5-7 weeks	February 23	February 9	March 30
Eggplant	6-8 weeks	March 20	March 6	May 1
Pepper	6-8 weeks	March 20	March 6	May 1
Tomato	4-6 weeks	March 23	March 9	April 20
Cucumber	2-3 weeks	April 6	March 30	April 20
Squash	2-3 weeks	April 6	March 30	April 20

Reference : University of Kentucky, "ID-128: Home Vegetable Gardening in Kentucky"



Estimated Time for Starting Seeds— Central Kentucky

Plant	Time	Latest Date	Earliest Date	Garden
Cabbage	5-7 weeks	February 18	February 4	March 25
Broccoli	5-7 weeks	March 1	February 15	April 5
Eggplant	6-8 weeks	March 29	March 15	May 10
Pepper	6-8 weeks	March 29	March 15	May 10
Tomato	4-6 weeks	April 7	March 24	May 5
Cucumber	2-3 weeks	April 17	April 10	May 1
Squash	2-3 weeks	April 26	April 19	May 10

Reference : University of Kentucky, "ID-128: Home Vegetable Gardening in Kentucky"



Estimated Time for Starting Seeds— Eastern Kentucky

Plant	Time	Latest Date	Earliest Date	Garden
Cabbage	5-7 weeks	February 25	February 11	April 1
Broccoli	5-7 weeks	March 6	February 20	April 10
Eggplant	6-8 weeks	April 3	March 20	May 15
Pepper	6-8 weeks	April 8	March 25	May 20
Tomato	4-6 weeks	April 17	April 3	May 15
Cucumber	2-3 weeks	April 26	April 19	May 10
Squash	2-3 weeks	May 1	April 24	May 15

Reference : University of Kentucky, "ID-128: Home Vegetable Gardening in Kentucky"



Cool-Season Crops

- Tolerate light frost
- Cabbage, broccoli, lettuce, cauliflower, beets, onion, radish



Warm-Season Crops

- Do not tolerate frosts
- Cucumber, muskmelon, squash, watermelon, tomato, pepper, eggplant, green beans



Starting Seeds

- Moisten soilless medium
- Dry medium will not wet appropriately
- Gently place medium in a container
- If using peat pellets, soak in water until fully expanded



Photo credit:
Annette Meyer Heisdorffer

To Sow Seeds

- Broadcast or make a row
 - Tomatoes
 - Peppers
 - Broccoli
- Cover lightly with moist or dry soil

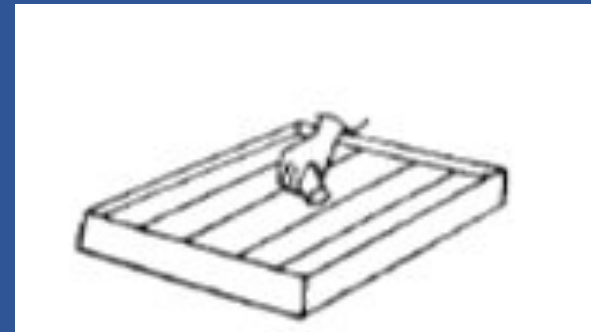
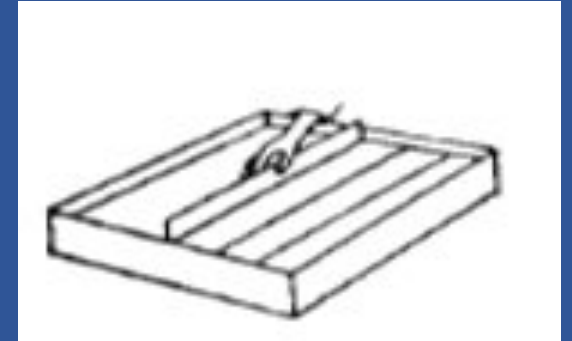


Photo credit: University of Kentucky, "ID-128: Home Vegetable Gardening in Kentucky," p. 8



To Sow Seeds

- Plant in individual pots:
 - Tomatoes
 - Squash
 - Cucumbers
- Cover lightly with moist soil

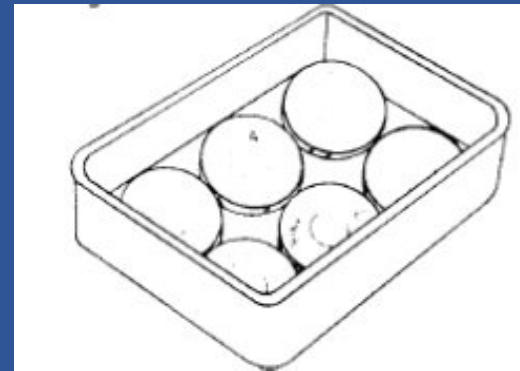


Photo credit: University of Kentucky, "ID-128: Home Vegetable Gardening in Kentucky," p. 8



The Next Steps

- Place container in clear, plastic bag
- Can use clear lids instead of plastic bags
- Keeps seeds moist for germination



Photo credit:
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Temperature

- Can use heat mat for germination
- Growing at warm temperatures makes them spindly and weak so remove after germination

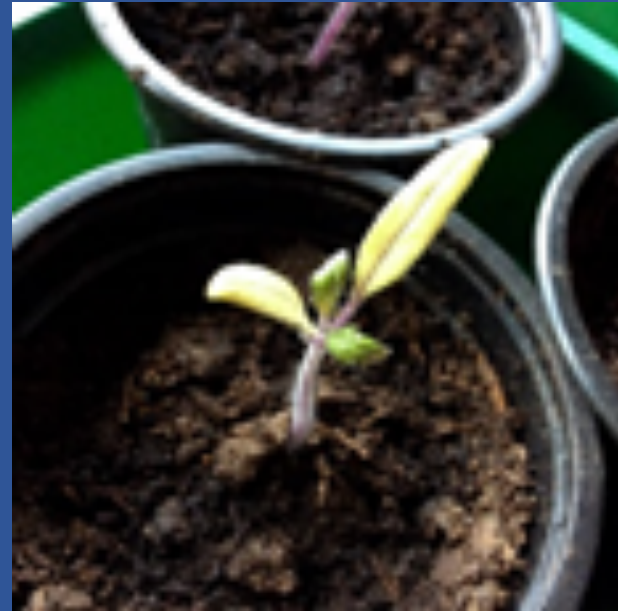


Cotyledons of Emerging Plants

- After seedlings emerge, move to growing area



Photo credit (left picture):
Annette Meyer Heisdorffer



After Germination

- Place in location with enough light
- Windowsill usually not enough light
- Usually need artificial lighting



Photo credit:
Annette Meyer Heisdorffer

Lighting

- Lights need to move up
- Locate lighting 3 to 10 inches above foliage
- Keep them on 12 to 18 hours per day
 - Timer useful
- High intensity results in better quality



Photo Credit:

Top photo: Stogsdill, Extension Master Gardener

Bottom photo: Mattingly, Extension Master Gardener



Spindly Seedlings Due to Lack of Light



Photo credit:
Annette Meyer Heisdorffer

Starting Seeds Indoors

- Temperature:
 - Nights 60 to 68 F and 75 F
 - Good rule-of-thumb: day temperatures 10 degrees warmer than night
 - Cool-season crops: Cooler day/night temps
 - 55 F night and 65 F days
 - Warm-season crops: Higher day/night temps
 - 65 F night and 75 F day



Photo Credit: Stogsdill, Extension Master Gardener



Transplanting

- Move to larger container when first set of true leaves form
- Lift seedlings from containers with small flat tool
- Tease apart tangled plants/roots
- Handle by leaves



Fertilizing

- Fertilize seedlings after second true leaf appears
- Use half rate to avoid injuring seedling according to fertilizer label
- Examples: 20-20-20 fertilizer or liquid fish emulsion according to label
- Repeat fertilizer application in two weeks



Harden Off Plants

- Toughen plants to withstand outside environment
- Harden off plants 2 weeks before planting in the garden
- Reduce watering and fertilizer
- Take plants outside during the day in a shaded area and bring in at night for several days if too cold outside at night
- Don't let plants dry out and wilt



Storing Unused Seeds

- Storing:
 - Keep dry and cool
 - Place in airtight container
 - Label and date
 - Storing at 40 degrees F, low humidity is ideal
 - Do not freeze



Questions?

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