

Planting and Care of Seeds

I. Preparation for planting seeds

- A. Wash hands (especially if you are a smoker to prevent the spread of tobacco virus).
- B. Clean seed trays and containers.
- C. Have sterile planting mix to allow root formation
 1. Seeds contain enough food for emergence and leafing
 2. No nutrients required
 3. Use warm water to moisten
- D. Be able to provide light 12-18 hours per day, with 16 hours being the ideal.
 1. Put under grow lights or cool white florescent lights
 2. Hang lights no greater than 3 inches above plants. Raise lights as plants grow to maintain this distance. (A distance greater than 3" will cause plants to become leggy as they stretch for the light.)
 3. Use timers
- E. Be able to provide bottom heat source if needed.

II. Seed Planting

- A. Use a seed planting mix that balances aeration capacity and water holding capacity. Premoisten to the stage where it will hold a ball but crumble easily. Fill containers to top and tamp mix down slightly. Water thoroughly with warm water and allow to drain.
- B. Read seed packet or use the internet for directions on planting depth. If no directions are available, plant seeds to a depth of 2-3 times their thickness by covering with dry seed starting mix. Then spray with water to wet well.
- C. For seeds that need light to germinate: gently pat seeds into soil so seed and soil have good contact, but do not cover with soil.
- D. Space seeds out (1/4-1/2 sq. in. per seed)
- E. Make sure pots have good drainage and are not left sitting in water too long.

III. Heat

- A. Read seed packet or use the internet for directions regarding heat requirements.
- B. For most seeds, heat is important for germination. A heat mat can be used if needed. Use a soil thermometer to determine soil temperature.
- C. Germinating seeds require more warmth (80°) than young plants (60°-70°).
- D. Nighttime temperatures can be about 10° lower without problems. Slightly lower temperatures make stocky, slower growing plants.

IV. Light

- A. For seeds that need light to germinate: place light 3" over seeds until sprouting occurs.
- B. For seeds that need darkness to germinate: cover with dark plastic or paper.
- C. Seedlings need more light than larger plants.
 1. Too little light or weak light will produce spindly or leggy plants.
 2. Plants require 12-18 hours, with 16 hours being the ideal.
 3. Most plants won't thrive in continuous light. They need a period of 6-8 hours of darkness to complete the photosynthesis process.
 4. Keep lights no greater than 3" above the plants for the first few weeks. Raise lights as plants grow to maintain this distance. (A distance greater than 3" will cause plants to become leggy as they stretch for the light.) Grow lights provide the red end of the spectrum (needed for plant production) and the blue end (needed for foliage and stem growth). Only the blue light is needed for germination, so cool white fluorescent lights, which provide the blue end of the spectrum, are sufficient.

- V. Watering
 - A. Germinating seeds and seedlings need a steady supply of moisture. Once dry, seeds will not germinate.
 - B. Until plants are ready for transplanting, top water with a very fine gentle spray. Drain well.
 - C. Warm water (65°-70°) should be used as cold water shocks seedlings and can slow or stop growth.
- VI. Ventilation
 - A. Remove dome or any plastic or other covering as soon as seeds sprout.
 - B. Lack of air circulation can lead to damping-off.
- VII. Transplanting
 - A. Transplanting allows seedlings room to grow faster and develop better, making them less prone to disease.
 - B. Seedlings should be transplanted when the first set of true leaves have opened. A larger container filled with a good transplant mix should be used. Use a transplant mix with added nutrients.
 - C. Premoisten the mix, fill the container to the top, tamp down, water again.
 - D. The best seedlings should be selected for transplanting. Hold the seedlings by their leaves, not their stems. (Plants can grow new leaves, but not new stems.) Don't remove remaining seed pods.
 - E. Cover stem with transplant mix to the bottom of the seed leaves (cotyledon leaves).
 - F. Water again. (See section on watering.) Make sure pots have good drainage and are not left sitting in water.
- VIII. Fertilizing
 - A. Seedlings need no added nutrients until they get their first set of true leaves
 - B. Once a seedling has the first set of true leaves, it can be transplanted, using a transplant mix with added nutrients.
 - C. Start fertilizing after transplanting with a liquid fertilizer.
 - D. Use quarter-strength fertilizer and apply it four times as often as directions say.
 - E. Depending on fertilizer and conditions, leaves may need to be rinsed after fertilizing to wash off any fertilizer that may have gotten on them to prevent burning; some fertilizers are labeled as foliar feeder appropriate and need not be rinsed off under most conditions.

Seeds Needing Light for Germination

African Violet	Feverfew	Primula	Begonia	Gloxinia	Snapdragon
Browallia	Impatiens	Sparmannia	Calceolaria	Jacobinea	Streptocarpus
Coleus	Kalanchoe	Sultana	Exacum	Petunia	

Seeds Needing Darkness for Germination

Calendula	Myosotis	Schizanthus	Centaurea	Nasturtium	Sweet Pea
Cyclamen	Nemesia	Trachymene	Pansy	Verbena	Forget-me-not
Gazania	Penstemon	Viola	Salpiglossis	Mesembryanthemum	