

Sexual Propagation

ADVANTAGES

- Breeders can produce new cultivars
- Inexpensive - many plants produce mass quantities of seeds to insure perpetuation of the species, however all seeds are not necessarily viable.
- Reduction or elimination of disease problems - seed production can prevent the entry of disease pathogens such as *bacteria, *viruses, and *fungi into the developing seed

Disadvantages

- May be overkill, especially if the plant has very fine seed which is not easily counted.
- Can be more challenging and time consuming for many species than alternative methods of plant propagation at home.
- Some species just do not produce seed in the home environment, despite all efforts.

Germination Medium

- Should ideally hold both water and air; examples: *peat moss, *vermiculite, *sphagnum moss, etc. - finer grades of these materials. Mixes of media components are commonly preferred:

1 part peat moss + 1 part fine perlite (by rough volume).

3 parts peat moss + 1 part fine perlite + 1 part fine vermiculite.

- Fertility should be low.

Sphagnum peat moss has anti-fungal properties and can be sprinkled over the surface of the germination medium following seed sowing, if it is not a component of the mix.

SOWING SEED

- Check seed package for a germination percentage rating
- Moisten the medium.

METHODS OF SEED SOWING:

- Broadcasting - indiscriminant tossing of seeds across the germination medium; can lead to *early crowding, *poor air circulation and disease problems, and allows* roots to tangle.

• In Rows - furrows in the medium surface; allows better air circulation and facilitates easy transplanting.

• Direct Seeding - placing individual seeds in individual cells or pots.

PLANTING DEPTH AND SUBSEQUENT CARE:

• As a general rule, very fine seed should not be covered, e.g. Wax begonia or African Violet.

• Water the newly planted seeds in; insures good seed-to-medium contact, essential to optimal germination.

• Maintain high relative humidity; can place germination pack into a plastic bag until germination has occurred.

• Optimal germination at MEDIUM TEMPERATURE is 70 - 75°F.

• Avoid placing seedlings in direct sunlight during germination; can burn seedlings. Two good alternatives:

◆ Place in an east or west window which has a sheer curtain filtering incoming radiation

◆ Place the pack 3 - 6" from a fluorescent fixture containing 2 tubes and illuminating 12-16 hours/day.

• Etiolation will often occur if seedlings receive inadequate light. Etiolated seedlings tend to have *elongated stems, *poor leaf development and in extreme cases, an *absence of chlorophyll.

• For small seeds, thin out the seedlings, whether sown in rows or by broadcast when first TRUE leaves appear.

• Transplant into individual pots or cell packs when several true leaves are present; keep out of direct sunlight for about a week and begin appropriate fertilization thereafter

PROBLEMS - To minimize poor germination and poor seedling growth:

• Read the seed package and follow instructions

• Some seeds may need to be soaked in water prior to sowing, while others may need their surfaces scratched.

• Damping-Off - caused by a variety of fungal organisms and typified by a common symptom: stem shows a blackened "pinched" area at the medium surface, causing toppling.

• TO PREVENT OR REDUCE DAMPING-OFF:

- ◆ Use clean, sterile media and containers
- ◆ Provide good air circulation - stagnant air encourages fungal spore growth.
- ◆ Maintain proper watering and temperature regimes
- ◆ Sprinkle sphagnum peat moss over newly planted seeds, if it is not component of mix
- ◆ Consider buying treated seed or treating seed yourself; fungicide (Thiram) stops the problem very early; surface sterilize seeds by soaking 5-10 minutes in a weak bleach solution (10%) then rinse.
- ◆ Use a commercially available fungicide such as Captan