



Orchid Seed Germination

Orchid seeds are very small and contain very little or no food reserves. A single seed capsule may contain 1,500 to 3,000,000 seeds. Sowing the seed in vitro makes it possible to germinate immature seed (green pods). It is much easier to sterilize the green capsule than individual seed after the capsule has split open. Lucke (1971) indicated that orchid seed could be sterilized when the capsule is about two-thirds ripe. Listed below in the estimated normal ripening times of capsules for various orchid species (Lucke, 1971).

ORCHID GERNERA	TIME TO MATURITY (MONTHS)	ORCHID GENERA	TIME TO MATURITY (MONTHS)
Bulbophyllum	3	Laelia	9
Calanthe	4	Masdevallia	3.5
Cattleya	11	Miltonia	9
Coelogyne	13	Odontoglossum	7
Cymbidium	10	Paphiopedilum	10
Cppripedium	3.5	Phalaenopsis	6
Dendrobium	12	Stanhopea	7
Epidendrum	3.5	Vanda	20

Green Capsule Sterilization

1. Soak the green seed capsule in 100% bleach solution for 30 minutes.
2. Dip the capsule in isopropyl alcohol or ethanol for 5-10 seconds. Remove the capsule from the alcohol and carefully flame off the excess alcohol.
3. Under aseptic conditions, using a sterile knife or scalpel, open the capsule and scrape out the seed.
4. Carefully layer the seed over the surface of the culture medium. Seal the culture vessels.

Dry Seed Sterilization

1. Collect seed and place in either a small flask , bottle or a shortened pipet, which has one end sealed with cotton. Seal the other end of the pipet with cotton once the seed have been inserted.
2. Prepare a solution containing 5-10% commercial bleach containing a few drops of Tween 20 (Product Number P720)
3. Add the bleach solution to the flask or draw up the solution into the pipet. Swirl the flask containing the seed and bleach or repeatedly draw and aspirate the bleach solution in and out of the pipet.

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4. Sterilize the seed in the manner described in Step 3 for 5-10 minutes.
5. Remove the bleach solution and rinse the seed with sterile tissue culture grade water.
6. Transfer the seed to sterile culture medium.

Replating Seedlings

1. It may take anywhere from 1 month up to 9 months for the seed to begin to germinate. Approximately 30 to 60 days after germination begin, it will be necessary to transfer the seedlings to fresh media for continued growth.
2. Prepare an orchid maintenance/replate medium such as P748 for epiphytic orchids or T849 for terrestrial orchids.
3. Under aseptic conditions, transfer the seedling from the mother flask to the flask containing the fresh medium. You should place the seedling about ¼" apart on the medium.
4. Allow the seedlings to continue to grow and develop. Root formation generally begins when the plant has 2-3 leaves. Continue to transfer the seedlings to fresh media every 30-60 days, increasing the spacing between the plants with each transfer. When the flask is ready for transfer to a community pot in the greenhouse, most flasks will have 15 to 25 plants depending upon the species.
5. Transfer the plants into a community pot using a finely ground orchid mix.

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