



Growing Orchids from Seed on Agar



Orchid seeds are tiny and need nutrients to grow. On agar, a gel that holds water and minerals, seeds can germinate and form plantlets in sterile conditions.



Date Started: _____



Culture ID: _____



Orchid Type: _____



OBJECTIVE

To germinate orchid seeds on agar and observe their growth into plantlets.



MATERIALS

- Orchid seeds (obtained from a pod or source)
- Orchid seed germination medium (agar medium)
- Clear culture jars or containers with lids
- Measuring tools (scale, measuring cup, spoon)
- Pressure cooker or large pot (for sterilizing)
- Alcohol (70%) and/or bleach solution (10%)
- Spray bottle with sterile/distilled water
- Tweezers or forceps (sterilized)
- Labels and marker
- Gloves (optional but recommended)
- Notebook or lab journal



SAFETY & STERILITY

- Work as cleanly as possible to keep cultures sterile.
- Wash hands and clean your workspace.
- Sterilize tools and containers before use.
- Do not open culture jars once seeds are planted.
- If you see mold or contamination, do not open the jar. Dispose of it safely.



PROCEDURE

- 1. Prepare the Area:** Clean your workspace. Wipe surfaces with 70% alcohol or a 10% bleach solution. Let air dry.
- 2. Prepare the Agar Medium:** Mix and heat the agar medium as instructed on the recipe. Pour into culture jars (about 1–2 cm deep). Cap loosely. Sterilize in a pressure cooker at 15 psi for 15–20 minutes. Let cool and solidify.
- 3. Sterilize Tools:** Soak tweezers, spoons, or other tools in 70% alcohol and flame (if heat-safe) or let air dry in a clean area.
- 4. Obtain Orchid Seeds:** If using a fresh seed pod, sterilize the outside by wiping with 70% alcohol or a 10% bleach solution. Rinse with sterile water. Open the pod over a clean surface and collect the tiny seeds.
- 5. Sow the Seeds:** Carefully sprinkle or place the seeds onto the surface of the agar medium. Do not press them in.
- 6. Seal the Culture:** Close the lid tightly. Label the jar with culture ID, orchid type, and date.
- 7. Incubate:** Place the jar in a location with bright, indirect light and a steady temperature (20–28 °C / 68–82 °F).
- 8. Observe (Without Opening):** Check the culture through the jar at regular intervals. Record observations in your table.
- 9. Plantlet Development:** Seeds will swell, germinate, and form tiny plantlets over weeks to months. Each species grows at its own rate.
- 10. Next Steps (When Ready):** When plantlets are large enough (typically 1–2 cm tall with leaves and some roots), they can be transferred to a potting medium in a sterile process.



OBSERVATIONS

Date	Days Elapsed	What I See (seed condition, color, size, changes)	Sketch (optional)	Notes / Questions



ANALYSIS & QUESTIONS

1. When did you first see changes in the seeds? _____
2. Describe the stages of growth you observed. _____
3. What do you think the seeds need in order to grow? _____
4. What challenges did you face, and how could you improve next time? _____