

Phyto Plus⁺

Instruction sheet for home culture live phytoplankton

A culture can be defined as an artificial environment in which the algae grow. In theory, culture conditions should resemble the alga's natural environment as far as possible.

Physical parameters

- Temperature

An intermediate value of 15-20°C is most often employed cycling. In temperate regions ambient room temperature is generally acceptable for culturing purposes.

- Light

Natural light is usually sufficient to maintain cultures in the laboratory. Cultures should never be exposed to direct sunlight (which may cause photo pigment damage), Fluorescent tubes bulb types marine white work well. Lighting hours should range from 14--16 hrs light a day

- Mixing

Mixing of micro algae cultures may be necessary under certain circumstances: when cells must be kept in suspension in order to grow mixing should be gentle. The following methods may be used: bubbling with air, but when possible gentle manual swirling (once each day) is recommended.

Types of culture vessel

Culture vessels should have the following properties: non toxic & reasonably transparent coca cola bottle with rounded bottom is an ideal vessel making sure very clean and sterilized.

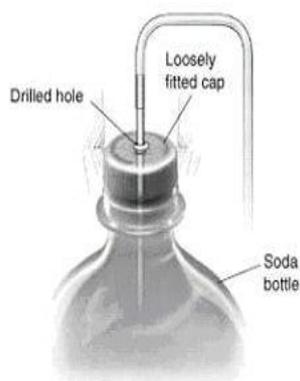
Cleaning/sterilization of culture materials

Cleanliness is foremost!!!!!!!!!!!!

Scrub (abrasive brushes not appropriate for most plastics) and soak with warm detergent (not domestic detergents, which leave a residual film on culture ware – use laboratory detergent

If using a coca cola bottle or similar vessel with screw Tops drill a small hole in the top for airline (rigid) tubing.

Image A



1. Use clean sterile container/bucket of sterile r/o water (for best results.) Then adding salt water (mixed well) It should be saltwater that is 1.015sg - using a refractometer. (fresh water can be used with our dish cultures)
- If you wish to make 1 litre culture water use 0.5ml of fertilizer per 1000ml

Sterile water-can be obtained by microwaving 1 liter of water for 7 minutes on high power, then allowing to cool to room temperature.

2. (0.5ml)- (1ml) for 1 litre, (1000ml) using syringe supplied. Of half Strength Sea water @ (1.015sg) if using other brand fertilizers see manufactures recommendations.
3. Using a coca cola bottle or other types of vessel pour 1 litre of ready made mixture into the bottle. Do not screw top tight two turns just so it locks and air can escape
4. Connect airline up so it's gently bubbling leave for 10-12 hours so proper mixing Of air and carbon dioxide and a stabilized ph (usually around 7.5- 8 is good).
 - Air stones are not required in micro algae cultures because algae cells get trapped in the bubbles acting like a protein skimmer collecting at the top of culture vessels killing the algae.
 - . If using fluorescent tubes as a light source leave at least 6"-7" gap between vessel and light source as fluorescent tubes can quickly over heat your phytoplankton culture.

5. Now you're ready to add your live algae pour the whole 100ml bottle into your mixture.
 6. if using our culture dish flood the dish with sterile water
Leave for 10-12 hrs (room temp) gently rub off the cell with cotton swab and pour into mixture.
Twist top so it locks (couple turns) but not tight.
7. Here comes the hard part be **patient!!** The micro algae will require a few days to adjust to their new environment, this is typically known as lag phase or introductory phase
 - DON'T FORGET EACH DAY GIVE THE BOTTLE A QUICK SWIRL!
8. After 3-4 days you should now notice slight colour change, this is known as exponential growth phase.

Splitting your culture for further use

9. On the 8th day of culturing split 1/3 of your culture to restart a new 2 litre bottle. Repeating steps above.
 - The objective of splitting culture is to maintain a growth phase so you have continuous use and supply of phytoplankton.
 - Culture vessels can be used 2-3 times of re-blooming before cleaning or renewing vessel.
 - IMPORTANT PLEASE READ
 - F/2 NUTRIENTS Be Warned adding more fertilizer will not produce a darker culture and may slow culture growth. Dosage of 0.5ml /1ltr-1ml/1ltr a fairly dense culture will grow and survive 10-12 days.

Equipment check list

- Air pump
- Culture vessel
- Fluorescent lights (white & actinic work well)
- Starter culture (Coming Soon!!!!)
- Fertilizer f/2

Optional

- Air manifold
- Timer
- Rigid airline tubing
- Inline air filter for cultures

Occasionally cultures will crash or are difficult to start.
Most failures are due to contaminants which consume or
inhibit growth.

All statements, Technical information and recommendations are based on tests that have been carried out by our technicians at Phyto plus Any advice or statements given by employee of Phyto Plus are based on their experience and are their opinions.