



Soil Extract

Soil Extract is an adaptation of E.G. Pringsheim's biphasic soil-water medium and is a component of some of our media. As the chemical composition is not well-defined and may vary from batch to batch, its use in experimental situations is not recommended. However, in our experience certain species will not grow well without it and Soil Extract is added for both culture maintenance and experimental studies. An extensive list of modified Soil Water media developed for a range of microalgae from specific environments can be found on the UTEX website (The Culture Collection of Algae at the University of Texas). <http://www.utex.org/>

ANACC protocol

Soil must be collected from a natural uncultivated environment or a rich garden loam may be suitable. No fungicides, insecticides, garden fertilizers or fresh manure should be present. At CSIRO, topsoil from a local sandy bushland environment has proved to have particularly beneficial growth promoting properties. Soil from clay or other soil types are less suitable in our experience.

Soil should not be stored or processed in the algal culture laboratory, since it is a potent source of unwanted microorganisms. Soil should be aged under moist conditions (preferably for 6 months or more) and then kept dry and away from light.

To prepare Soil Extract

1. Sift dry soil (not recently treated with fertilizer or herbicide) once through a coarse sieve and twice through a fine sieve (1 mm mesh).
2. Mix 1 kg of soil into 2 L of dH₂O water.
3. Autoclave for 60 minutes at 121°C and cool overnight.
4. Filter through absorbant cotton wool packed into the stem of a glass filter funnel.
5. Centrifuge at 5000 rpm for 20 minutes in 250 mL polyethylene centrifuge tubes and collect the deep brown supernatant.
6. Filter again through absorbant cotton wool.
7. Dispense the supernatant (40 mL aliquots) into 100 mL Schott or media bottles.
8. Autoclave for 20 minutes at 121°C.
9. After cooling, wrap caps with parafilm to prevent airborne contamination from fungal spores or bacteria.
10. Store sterile Soil Extract at 4°C (cold room or refrigerator).

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For further information

Australian National Algae Culture Collection
w www.csiro.au/en/Research/Collections/ANACC

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