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Course: microbial ecology

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Report 2

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Title: isolation of soil microbes

Materials; soil samples ( clay,,sandy and loamy)beakers water ,plates

Isolation of soil microorganisms

Procedure

1. Collection of soul samples into beakers of different depth and soil surface
2. 15cm deep
3. Use auger to dig soil from
4. Dig to 30cm get the soil
5. Get from soil botanical gardens
6. Exposed ground
7. Colored soil
8. Aggregated /sandy/clay/loamy
9. Temperature at the surface
10. Record the difference and explain why
11. pH of the recorded samples for the two sides of different depth
12. Estimate the moisture content
13. Using soil dilution technique and soil plate method determine the microorganisms placed at the the soil at different depth(microbial count and dug present)

* Disadvantages of your method of study
* What is the possible roles of microorganisms in the isolated soil
* Discuss your result

Cultural characteristics observed

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Soil surface | | 15cm | | 30cm |
| Color of soil | | Slightly dark | | Dark | | Very dark |
| Nature of soil particles | | Sandy | | Sandy | | Aggregated |
| Temperature | | 32•c | | 24•c | | 30•c |
| pH | | Acidic | | Acidic | | Acidic |
| Dilution |  | |  | |  | |
|  | Soil surface | | 15cm | | 30cm | |
| 10^-3 | 24cm | | 16cm | | 16cm | |
| 10^-5 | 7cm | | 6cm | | 3cm | |

Disadvantage is soil dilution method

Dilution and plating is an inexpensive and relatively simple technology for the enumeration of soil bacteria. However, there are several drawbacks to the technique. Some common errors and assumptions associated with dilution and plating assays are as follows: it is assumed that every single soil bacterium gives rise to a colony, but in reality a colony may arise from a clump of cells, resulting in an underestimation of true culturable count. During serial dilution of the soil, soil particles can settle out (fall to the bottom), so the true aliquot of soil is not passed on into the next dilution. Many soil microbes are viable but non-culturable. Slow growing bacteria may not result in visible colonies within a reasonable time frame (1-2 weeks).

Roles of microorganisms in the isolated soil

* For nutrient
* For decomposition of bio life