

Microbiology Learning Objectives C6 Microbial Growth

1. Why are hyperthermophiles that grow at temperatures above 100 C seemingly limited to oceanic depths?
2. Why is the pH of culture media controlled? How?
3. Name a use for each of the four elements: carbon, nitrogen, sulfur, and phosphorus.
4. How are microbes classified on the basis of oxygen requirements?
5. How do aerobes avoid damage by toxic forms of oxygen?
6. How do biofilms form and explain why they have a potential for causing infection?
7. Explain why you would use the following: a) anaerobic techniques, b) living host cells, c) candle jars, d) selective and differential media, and e) enrichment medium.
8. What is a colony? Why might a colony not grow to an infinite size?
9. Explain how you can isolate a pure culture using the streak plate method.
10. How are microbes preserved by deep-freezing and lyophilization (freeze drying)?
11. What is binary fission? What organisms use binary fission?
12. How can we directly measure cell growth?
13. What is the difference between direct and indirect methods of measuring cell growth?