

A banner image showing a cross-section of soil with green grass growing on top. The text "BioComplete™ Liquid Amendments" is overlaid in white serif font.

BioComplete™ Liquid Amendments

Lecture 5 - General Concepts (Part 3)



Topics

Definitions

**BioComplete™ Compost / Extracts / Teas,
Leachates, Ferments, Manure Tea, Put-to-Sleep
Teas**

General Concepts

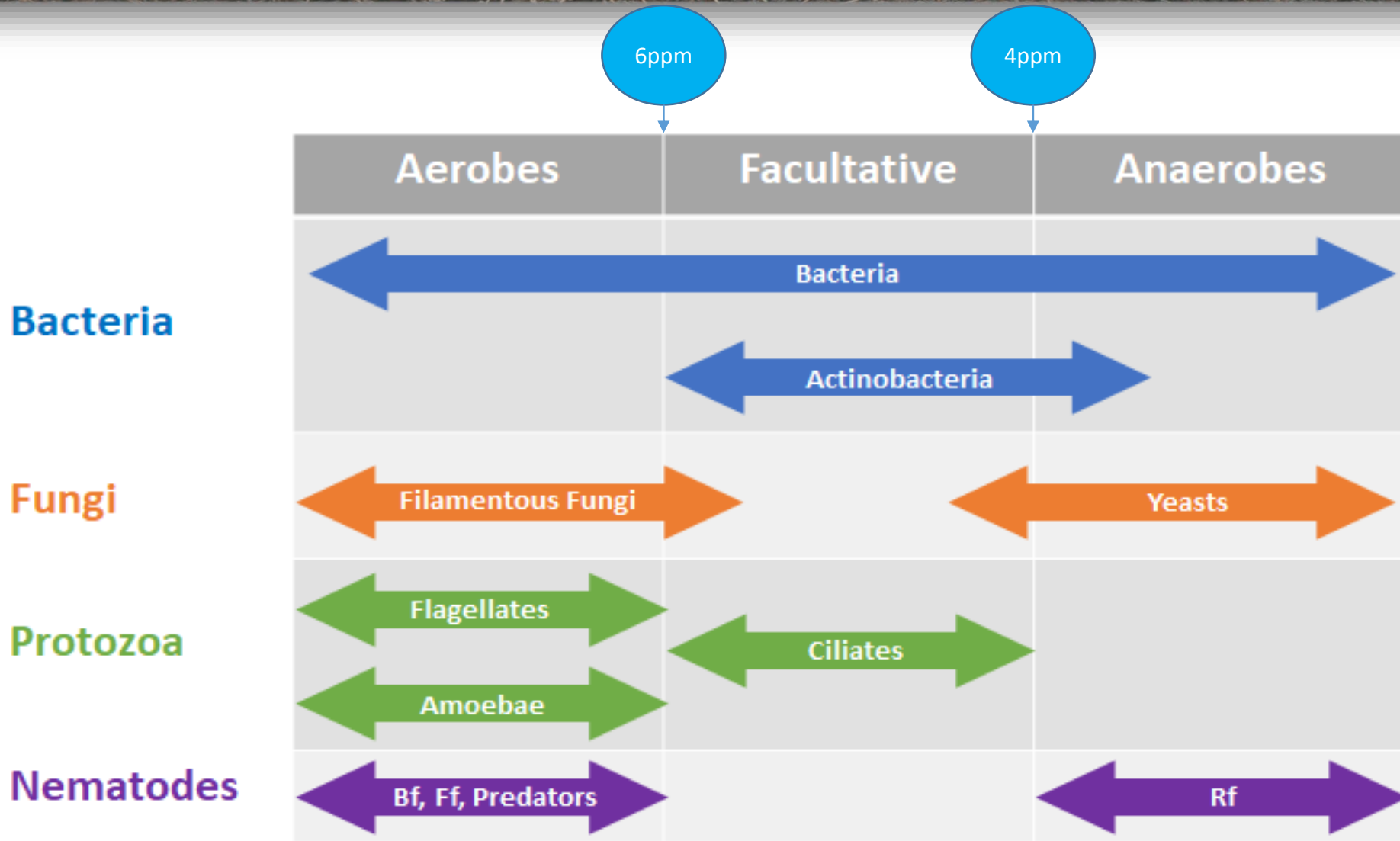
**Assurance of Success, Foods, Biomass levels,
Diversity, Water Quality, Temperature, **Aeration****

Extracts - Massaging, Duration, Storage

Teas - Foods, Extraction, Aeration, Duration

Application – Pumps, Timing, Cleaning

Aeration





Aeration

- Oxygen needs to remain above 6 ppm, or 6 milligrams oxygen per liter of water in order to select aerobic organisms.
- Aerobic organisms make only aerobic enzymes.
- Facultative organisms have to make both sets of enzymes because oxygen fluctuates from aerobic to anaerobic and back again constantly.
- In conditions that are fully low oxygen, true anaerobes win because only their enzymes can function.
- Enzymes explain these categories.



Aeration

- In fully aerobic conditions, aerobes will win over facultative anaerobes and true anaerobes.
- In conditions of low oxygen, true anaerobes will win.
- Most human and animal pathogens are facultative anaerobes, and they win in fluctuating aerobic / anaerobic conditions.
- If we maintain aerobic conditions, AND have beneficial aerobic organisms present, serious pathogens cannot win.



BioControl Organisms That Can be Added to Extracts and Teas

Fungi:

- Beauveria – attacks soft-bodied insects
- Trichoderma, Gliocladium – parasitizes fungi
- Mycorrhizal fungi – benefits most plants

Bacteria:

- Pseudomonads – decompose toxic chemicals
- Bacillus – many compounds toxic or anti-insect
- Azotobacter, Rhizobium – N₂ gas-fixation

Nematodes: Steinernema, Heterorhabditis