



BioComplete™ Liquid Amendments

Lecture 8 – Making BioComplete™ Extracts and Teas (Part 3)



Cleaning BioComplete™ Tea Brewers

- Pay careful attention to any place that will be hard to remove biofilm with high pressure water.
- Do NOT use air stones. The outer portions of the stones can look pristine, but the middle of the stone is usually a slimy, smelly morass, highly anaerobic, the perfect place to grow pathogens, and produces toxic chemicals.
- Be careful to not scratch the tank's inner surface with brushes because those gouges are the perfect place to growth anaerobic pathogens.
- Always look inside the brewer before you buy it!



Aeration Considerations

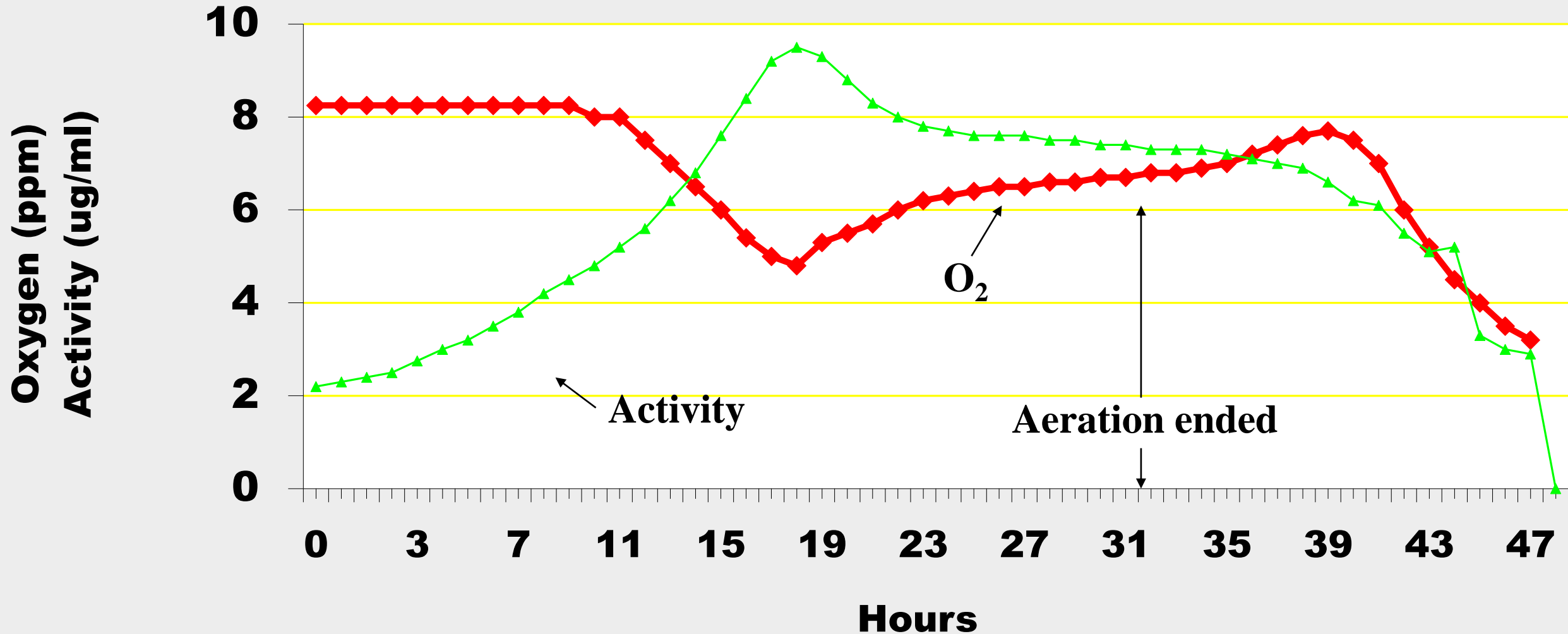
- Microbes grow slower when temperatures are colder, and faster when temperatures are warmer. Major concerns with anaerobic teas is then during the hotter months.
- There is less and less oxygen in air or water as temperature increases.
- Microbes grow faster when there is more food.
- What is the most critical time to pay attention when making tea?



Aeration Considerations

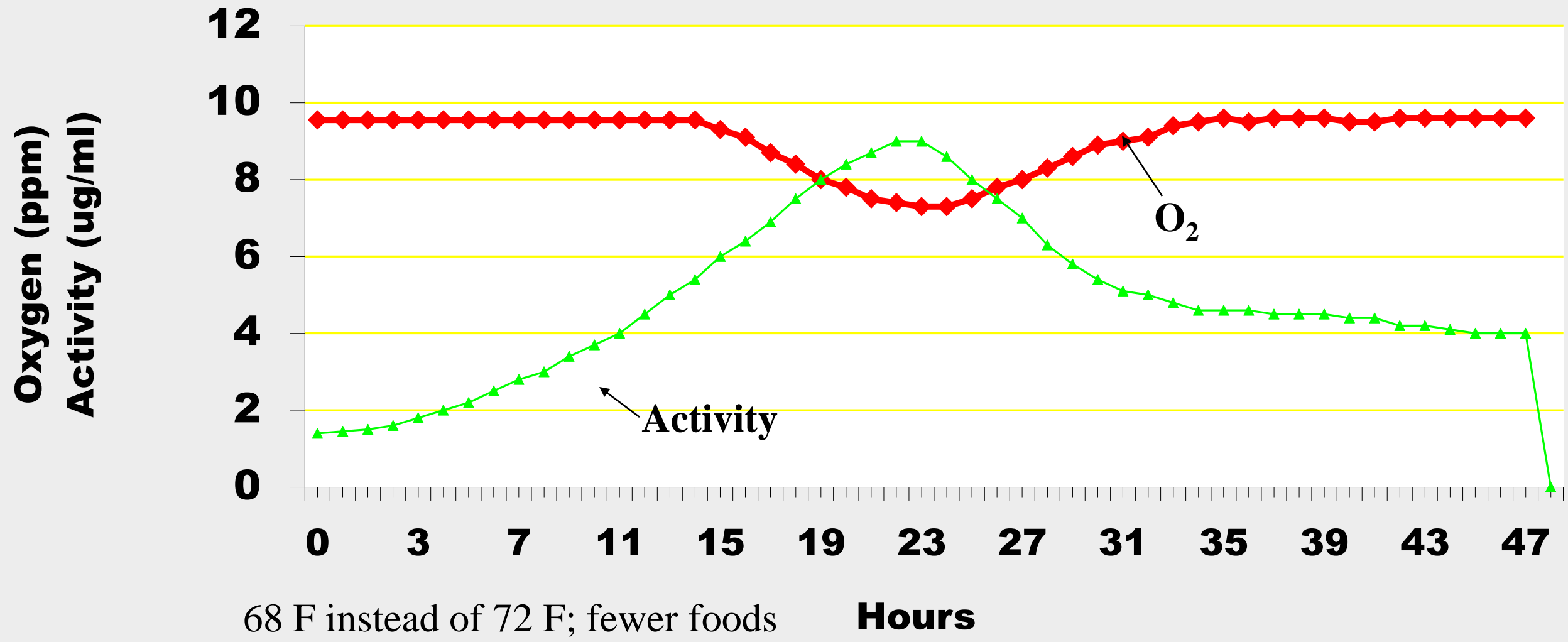
- The following graphs show active aerobic organisms growing in the tea brew, along with oxygen concentrations.
- Remember that 6 ppm or micrograms of Oxygen per Liter of water is the threshold for aerobic to anaerobic conditions.
- Note that as organisms really start to grow, oxygen concentration drops into anaerobic conditions.
- But as the food is used up in this brew, organisms stop growing, stop taking up as much oxygen and aerobic conditions return.
What happens to the quality of the tea?

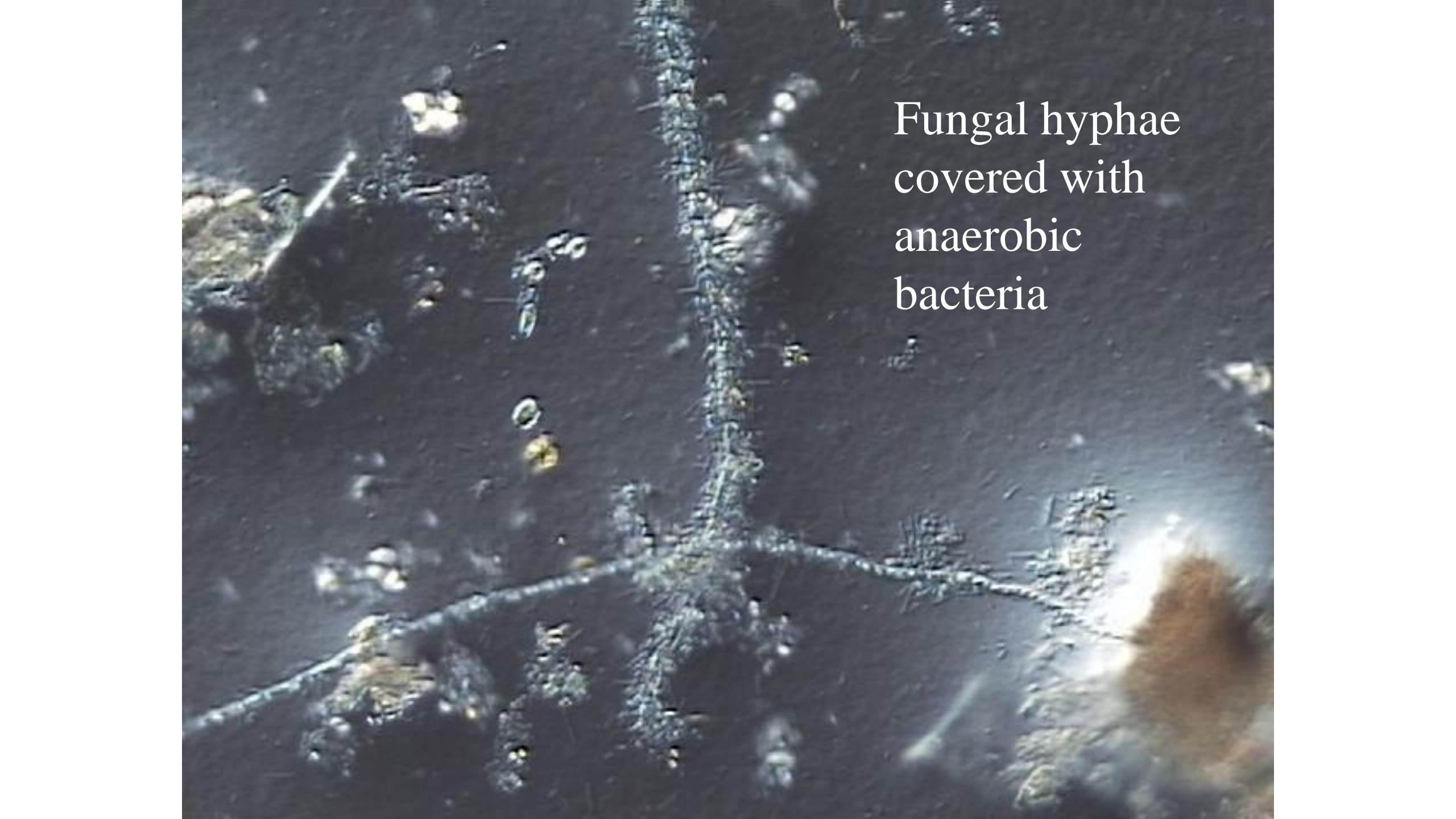
What Happens With too Much Food?





Reduce Amount of Food or Temperature



A high-magnification micrograph showing a network of dark, branching fungal hyphae. The hyphae are densely covered with small, bright, rod-shaped structures, which are identified as anaerobic bacteria. The background is dark and granular, suggesting a soil or sediment environment. The text "Fungal hyphae covered with anaerobic bacteria" is overlaid in white on the right side of the image.

Fungal hyphae
covered with
anaerobic
bacteria

**Good
enough for
the plant,
it's good
enough for
me!**



**Lynn
Andrews**

**Merlin
Organics**

**Tucson,
AZ**