

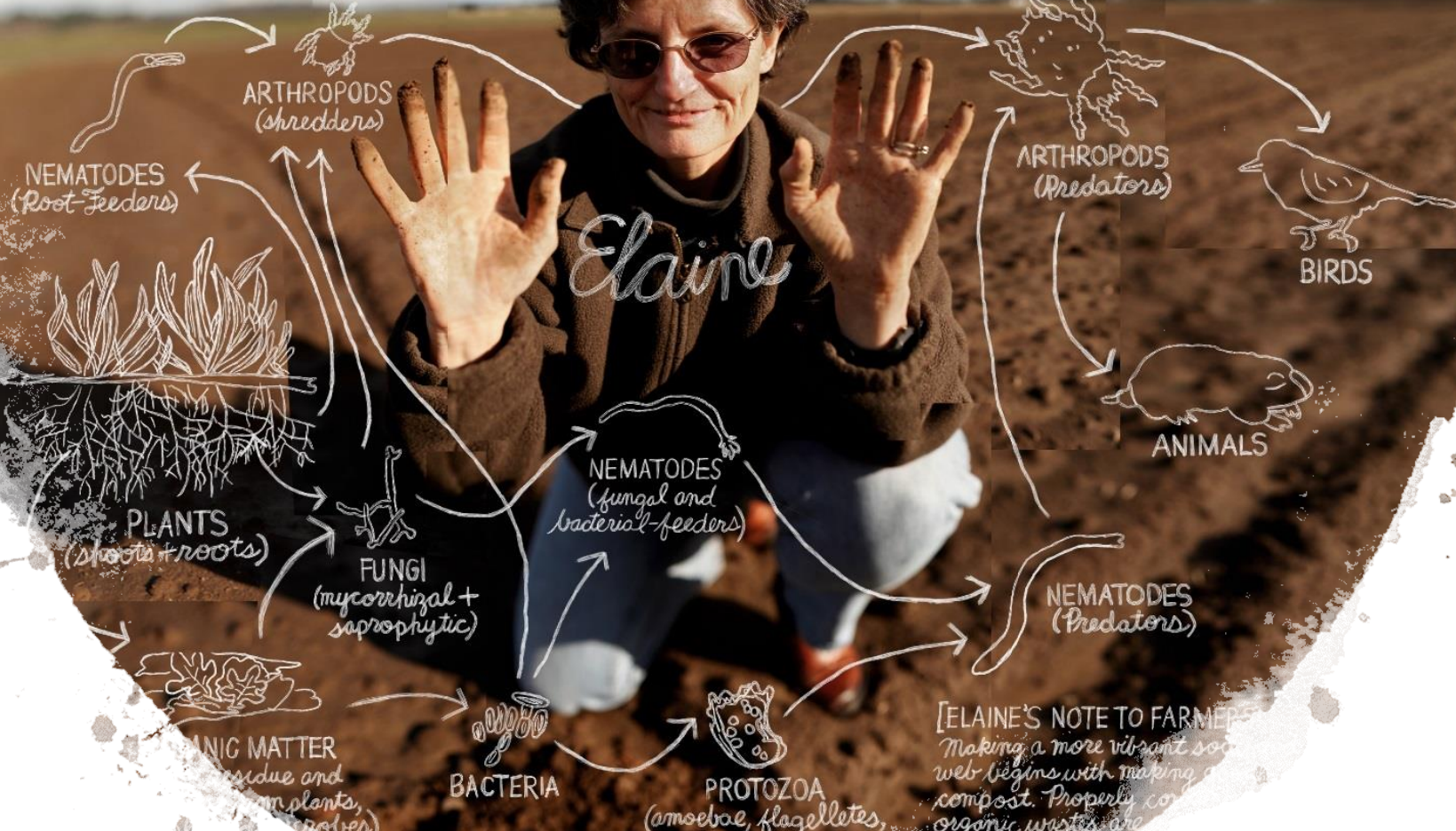


# **BioComplete™ Compost**

Lecture 1 – The History of Compost



Elaine



[ELAINE'S NOTE TO FARMER]

Making a more vibrant soil food web begins with making good compost. Properly collected organic wastes are

# BioComplete™ Compost

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# What Is Compost?

## Wikipedia

**“Compost is organic matter that has been decomposed in a process called composting.”**

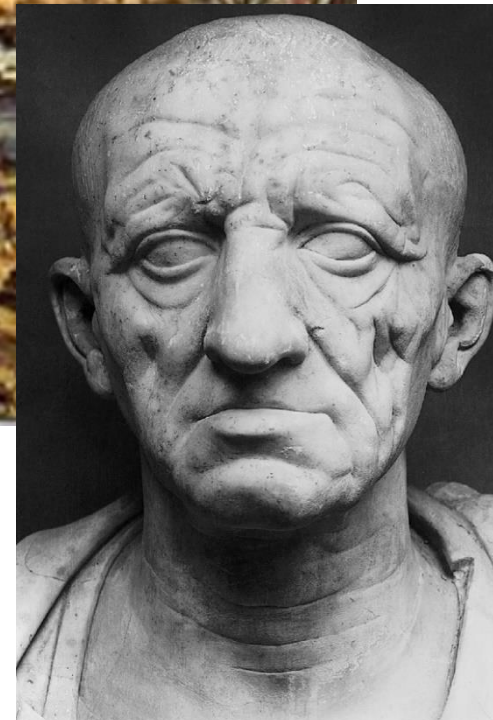
**No restriction on how that organic matter gets decomposed.**

**See why we're in trouble?**

# The Beginnings of Composting

**There are descriptions from India in Sanskrit and from Babylon in Hammurabi's Code, recorded around 1800 BCE, that describe making compost.**

**Composting was described in reasonable detail in Cato the Critic's "De Agricultura", the first "How to do Agriculture" book published in 300 BCE.**



# Figuring Out Compost

- **Thomas Jefferson realized addition of composted OM resulted in better crop production. He wasn't successful determining the secret of good compost however. If microscopes had only existed during his time!**
- **In 1856, Louis Pasteur, armed with microscopes, discovered that certain bacteria caused beer to go sour and often caused severe illness in consumers. The right microbes made good beer.**



# Focus was on the Problem Organisms

- **In the early 1900's, public health officials focused on the disease-causing microbes that potentially could occur in decomposing organic matter, especially if conditions weren't controlled.**
- **Regulations focused on "how to kill", instead of the conditions that select for competitors, inhibitors and consumers.**
- **As has so often been the case with plant production, the focus was on a symptom, and not the cause of the problem.**



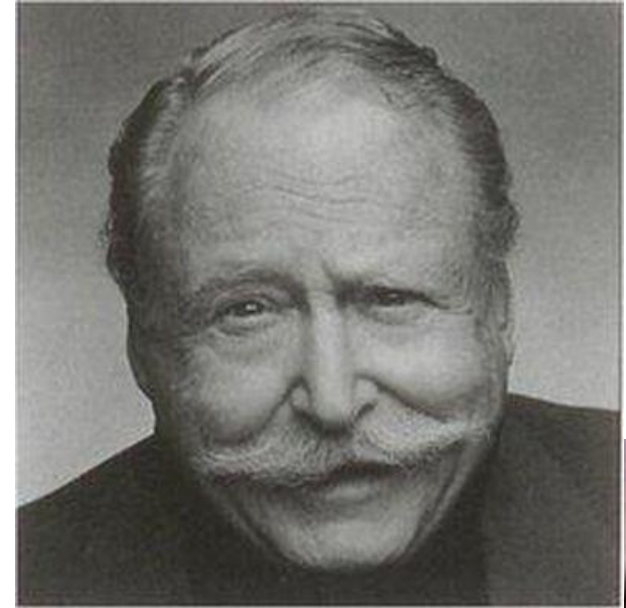
# Kill the Disease Causers

**In both food safety and the medical world, the focus was only on:  
“Kill the Pathogens”**

- **Toxic Chemicals to clean surfaces, equipment:** Antibiotics, Cleansers
- **High Temperature Death for organic materials**  
(food, water, plant media):
  - **Autoclaving:** Heat (250 F; 221 C) at 15 PSI pressure for 15 minutes kills living and dormant cells
  - **Pasteurization:** Steam heat (100 C, 212 F) for a few minutes, repeated 3 times
    - Beer, Wine, Milk, Soil Mix, Thermal Compost

# Improving the Process

**Sir Albert Howard learned aerobic composting in Indore, India and in 1931 brought aerobic composting methods back to England.**



**Lady Evelyn Balfour, one of the founders of the Soil Association, emphasized the importance of maintaining aerobic conditions and turning compost routinely and defined composting as the Aerobic decomposition of a mix of organic materials.**



# The Definition Implies the Following...

- **Aerobic**
  - So the good guys grow; outcompete
- **decomposition**
  - Is performed by BACTERIA and FUNGI
  - Need high diversity to compost in all environmental conditions
- **of a mix of organic material**
  - Diversity of food so ALL bacterial and fungal species have food to grow, maintain **nutrient cycling**: **Predators required!!!**