

Development of biocontrol products from vermicomposted cow manure

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The Problem:
Soil dwelling pathogens infect seeds of crop plants

What we've learned

Disease protection requires living microbes (heat treating vermicompost kills microbes and eliminates disease control)

Pathogens produce swimming spores (called zoospores) that are attracted to their hosts by chemical cues released from the seed

Beneficial microbes that colonize the seed surface disrupt pathogen attraction and protect plants from infection

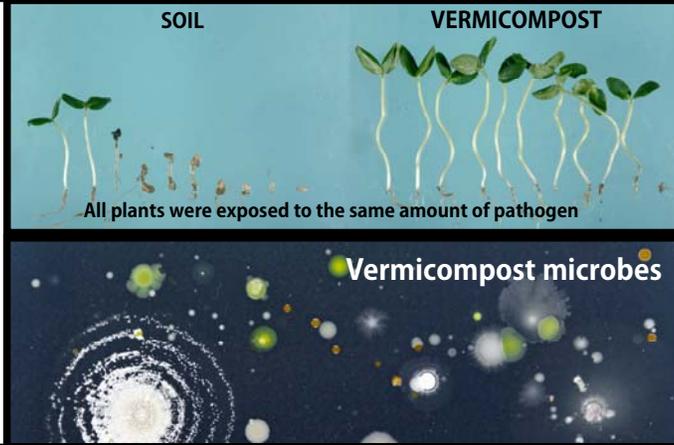
70% fewer zoospores are attracted to seeds when exposed to vermicompost microbes

Significance of our findings

Understanding how protection is achieved will enhance our ability to implement biological disease control

Vermicomposts may be a source of novel biopesticides

Identifying beneficial microbes may allow us to develop better predictive tools for disease protection in a variety of composts



The Solution:
Beneficial microbes found in vermicompost can protect plants

What we don't know

Which microbes provide disease protection?

What is the chemical identity of the pathogen attractants released from the seed?

How do the beneficial microbes disrupt pathogen attraction and prevent disease?

Do microbes produce a pathogen inhibitor or remove pathogen attractants?

Where do we go from here?

Identify the microbes responsible for disease control

Verify the connection between pathogen attraction and disease control

Understand how seed-colonizing microbes interfere with pathogen attraction

