Getting Dirty
Soiled is Good at Any Age

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SOIL IS NOT DIRT!
This IS dirt!

Yuck!!
SOIL is a “dynamic” ECOSYSTEM

Soil **IS** the most complex biomaterial on the planet.
(Young & Crawford, 2004)

We know more about the movement of celestial bodies than about the soil underfoot.
(Leonardo Da Vinci, circa 1500’s)
“Living” Soil
25% of global biodiversity resides in soil

In one square meter of living soil:
- 1 vertebrate
- 100 snails/slugs
- 3K earthworms
- 5K insects/spiders
- 10K rotifers
- 50K springtails
- 100K mites
- 5 million nematodes
- 10 billion protozoa
- 100 billion fungi
- 10 trillion bacteria

(Lindbo et al., 2012)
Soil Sustains Life!

“Soil isn’t a granular medium suffused with chemicals, it is alive, and must be alive to function.”

(Jones, 2005)
Dirt Soil is Good for Us (Seriously!)

- Breathing in
- Playing in
- Gardening in, and
- Ingesting

40 trillion bacterial cells
30 trillion human cells

Our exposure to microbes is inevitable. So, let’s focus on the benefits.

Microbes are our constant companions. We have more microbes on and in us, than we have human cells by 1.3:1. (Gilbert & Knight, 2017)
Microbes RULE!

They influence our...

- Immune system/inflammation
- Sense of smell
- Digestion/nutrition
- Brain function/mood
- Response to stress/PTSD
- Attractiveness to others

(Gilbert & Knight, 2017)
Get That Soil High Feeling

*Mycobacterium vaccae*

Activates serotonin release to

- boost immune response
- improve cognitive functioning
- reduces stress
- increases happiness
- promotes vitality

(Gilbert & Knight, 2017)
You ARE Your Microbiome

WE ARE THE 99%!!

RESPECT THE MICROBIOME!!
Cleanliness May Be Closer to Godliness, but You’ll Die Sooner!

We are ‘superorganisms’ that have coevolved with soil microbes.

Our health and longevity depends on living in symbiosis with the soil microbiome.

- Don’t overuse antibiotics
- Don’t use antibacterial products
- Don’t consume processed foods
- Nix your use of chemicals
Promote Your Microbiome

Our gardens are microbial ‘probiotic’ superstores passing out genes

- Eat organic
- Grow organic
- Eat fermented foods

Compost! Compost! Compost!
Be Happy, Eat Some Soil

A sprinkle a day, keeps illness away…
Soil Makes You Look Good Too!
A story with heart and soil.

DELUXE EDITION

A story with heart and soil.
dirt!
THE MOVIE

“THE FILM EXCELS”
“FUN AND ACCESSIBLE”
NERD UP!

Resources for learning more about soils.
Teaming with microbes: the organic gardener’s guide to the soil food web. Revised edition. 2010. Jeff Lowenfels & Wayne Lewis


I contain multitudes: the microbes within us and a grander view of life. 2016. Ed Yong.


Kiss the ground. 2017. Josh Tickell.


The soil will save us. 2014. Kristin Ohlson.


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<thead>
<tr>
<th>Book Title</th>
<th>Author(s)</th>
<th>Year</th>
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<tbody>
<tr>
<td>Soils and societies: perspectives from environmental history</td>
<td>J.R. McNeill &amp; Verena Winiwarter</td>
<td>2006</td>
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<td>Out of the earth: civilization and the life of the soil</td>
<td>Daniel Hillel</td>
<td>1991</td>
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<td>Soil in the environment: crucible of terrestrial life</td>
<td>Daniel Hillel</td>
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<td>Dirt: the erosion of civilizations</td>
<td>David R. Montgomery</td>
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<td>The earth moved: on the remarkable achievements of earthworms</td>
<td>Amy Stewart</td>
<td>2004</td>
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<td>Introduction to California soils and plants</td>
<td>Arthur R. Kruckeberg</td>
<td>2006</td>
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<tr>
<td>Introduction to earth, soil, and land in California</td>
<td>David Carle</td>
<td>2010</td>
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NERD UP LINKS

Composting for the Home Gardener, UC Cooperative Extension.
http://sacmg.ucanr.edu/files/163139.pdf

Making Compost at Home
https://www.recyclesmart.org/composting

Worm Composting at Home
https://www.recyclesmart.org/WormComposting

CompostSMART Training
https://www.recyclesmart.org/CompostSmart

Composting Methods and Bins
http://www.tilthalliance.org/learn/resources-1/compost/methodsandbins

Building a Home Worm Bin
http://www.tilthalliance.org/learn/resources-1/compost/otsbinplans/at_download/file

Build an Outdoor 3-Bin Composter
http://www.tilthalliance.org/learn/3-bin-wood-and-wire-compost-build-plan/at_download/file

Stay tuned for more about composting at home in an upcoming UCBRC learning series presentation.
Thank You!