Organic composts may help farmers prevent foodborne disease outbreaks

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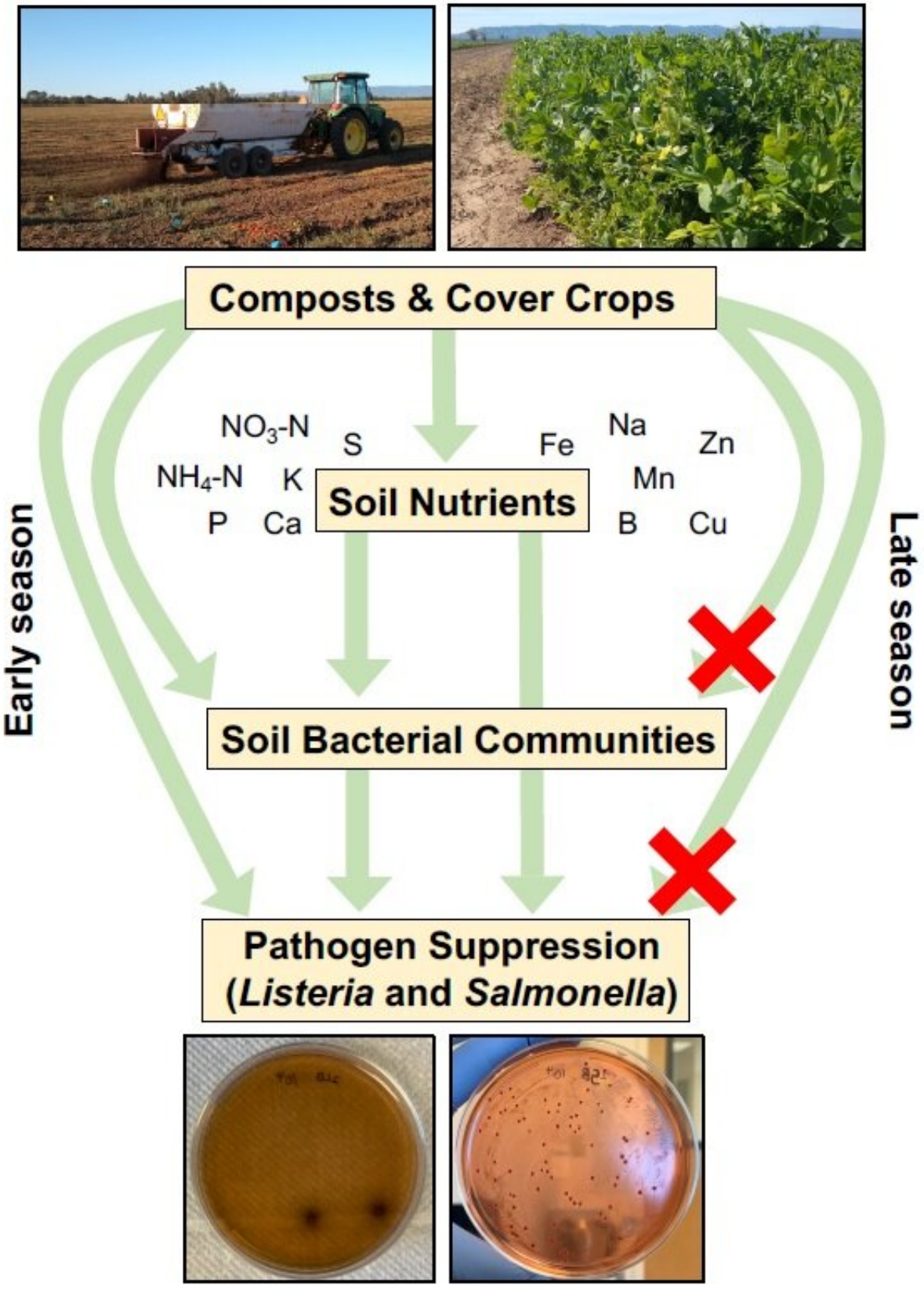
Composts & Cover Crops
NO_3-N
S
Fe
Na
Zn
NH_4-N
K
Soil Nutrients
Mn
P
Ca
B
Cu
Early season
Late season
Soil Bacterial Communities
Pathogen Suppression
(*Listeria* and *Salmonella*)

A new analysis of a 27-year experiment comparing organic and conventional soil management indicates that animal-based composts do not promote pathogen survival and may even promote bacterial communities that suppress pathogens. Credit: Dr. Devarajan

Foodborne disease outbreaks linked to the consumption of fresh produce have caused farmers to re-evaluate their practices. A recent analysis of a 27-year experiment comparing organic and conventional soil management indicates that animal-based composts do not promote pathogen survival and may even promote bacterial communities that suppress pathogens.

The study, which is published in the *Journal of Applied Microbiology*, comes following other research documenting a higher prevalence of foodborne pathogens in fields fertilized with raw animal manure compared with conventional fertilizers.

"Our findings suggest that abandoning animal-based composts should be reconsidered, both because of the known benefits of composts for soil health and because it may be possible to apply amendments so that food-safety risks are mitigated rather than exacerbated," said lead author Naresh Devarajan, Ph.D., of the University of California, Davis.

More information: N. Devarajan et al, Cascading effects of composts and cover crops on soil chemistry, bacterial communities and the survival of foodborne pathogens, *Journal of Applied Microbiology* (2021). DOI: 10.1111/jam.15054

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