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Learning from nature: using plant-soil feedback principles to improve growth and health of a horticultural crop

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Propositions

Propositions associated with the PhD thesis

“Learning from nature: using plant-soil feedback principles to improve growth and health of a horticultural crop”

Haikun Ma

Leiden, 21th May 2019

1. Negative effects + negative effects can lead to positive effects in ecology (This thesis).
2. Inoculating soil microbiomes in agriculture is not a one-off solution, the beneficial effect of an inoculated microbiome needs to be strengthened and shaped over growth cycles (This thesis).
3. Plant growth depends more on the structure of the microbial community than on the relative abundance of OTUs in the soil microbiome (This thesis).
4. Even when the growth of a plant in inoculated soil is not better than its growth in sterilized soil, inoculation is still advantageous in presence of soil pathogens (This thesis).
5. Higher soil microbial diversity benefits crop health more than crop growth (This thesis).
6. Two dissimilar soils interact more synergistically than two similar soils (This thesis).
7. Applying ecological theory to improve agricultural production is a long process, which cannot be achieved by doing a few experiments, and it may satisfy neither ecologists nor growers during the process.
8. It is important to consider the influence on other related problems when finding a solution to a specific problem.
9. Presenting an experiment is as important as designing an experiment.
10. The good feeling that pertains after persevering to the end is much better than the relaxation that come after giving up during the process.