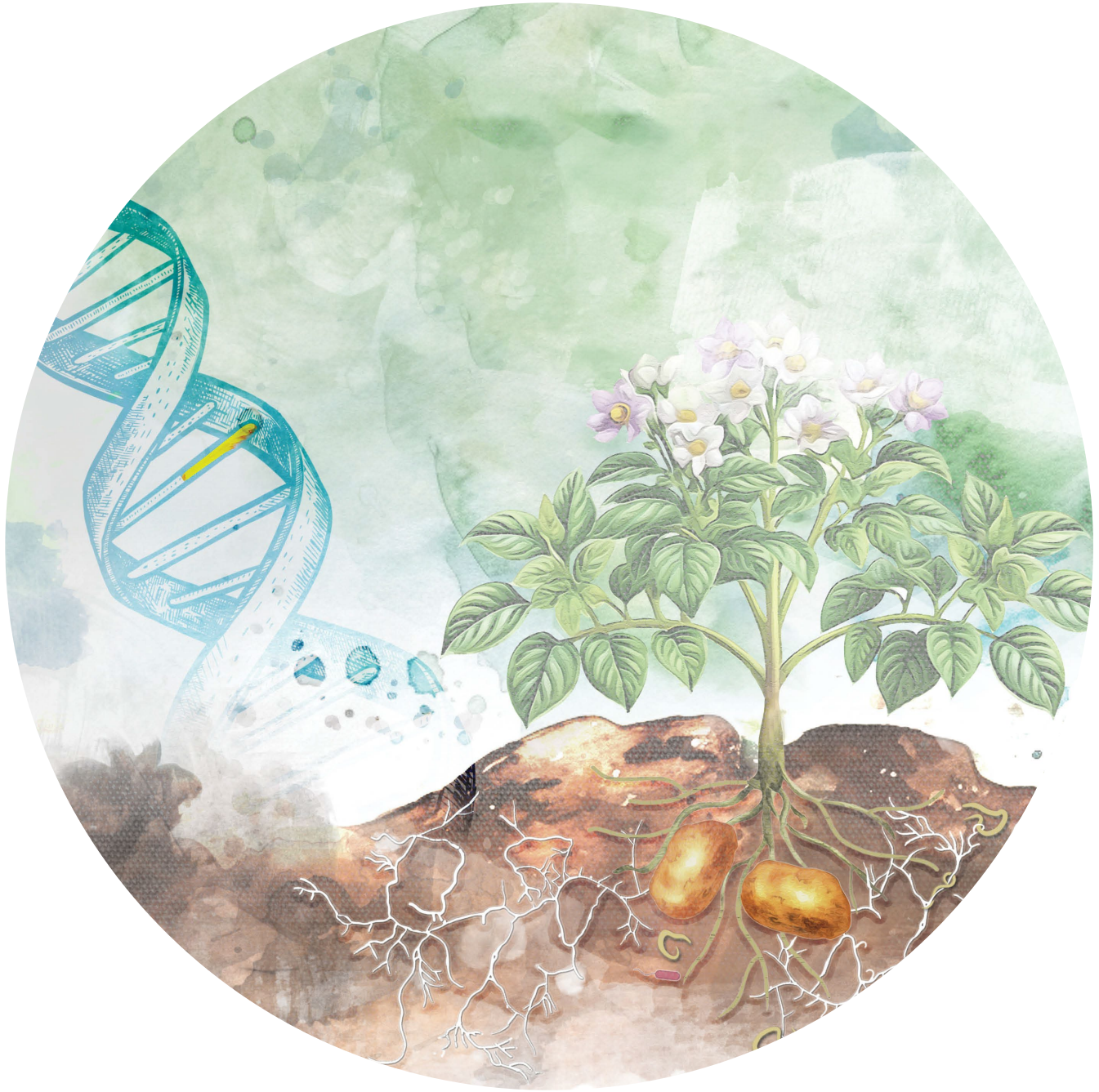
Bonte percelen vertellen hun verhaal

Binnenveldse variatie in de microbiële onderdrukking van aardappelcysteaaltjes

28 mei 2026 - KNPV

dr. Robbert van Himbeeck

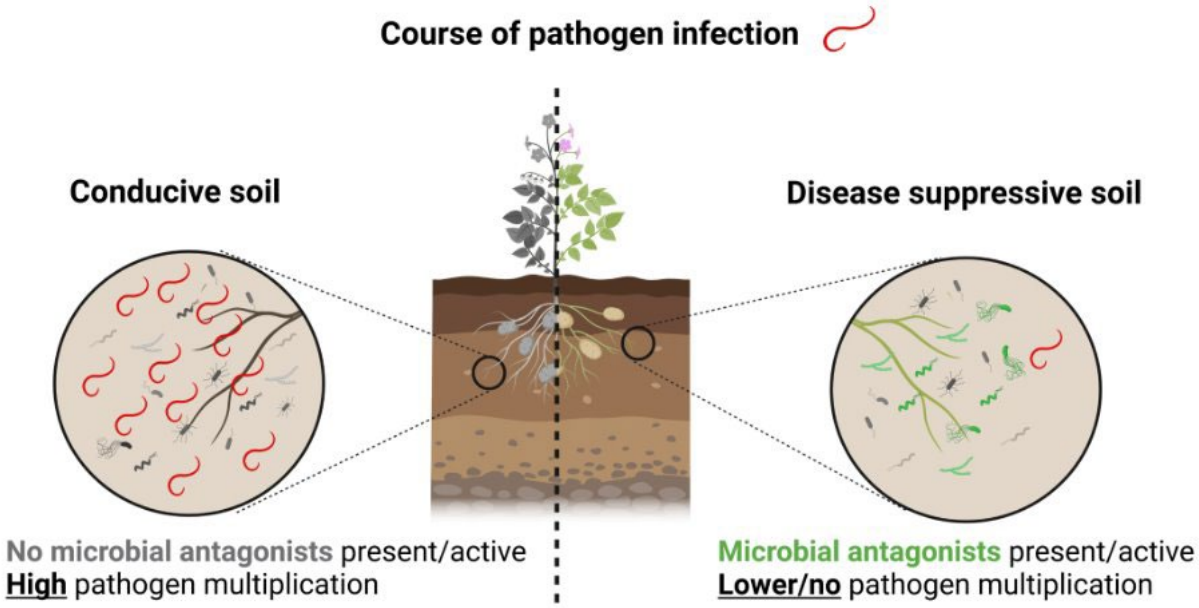
Soil Science Cluster, WUR



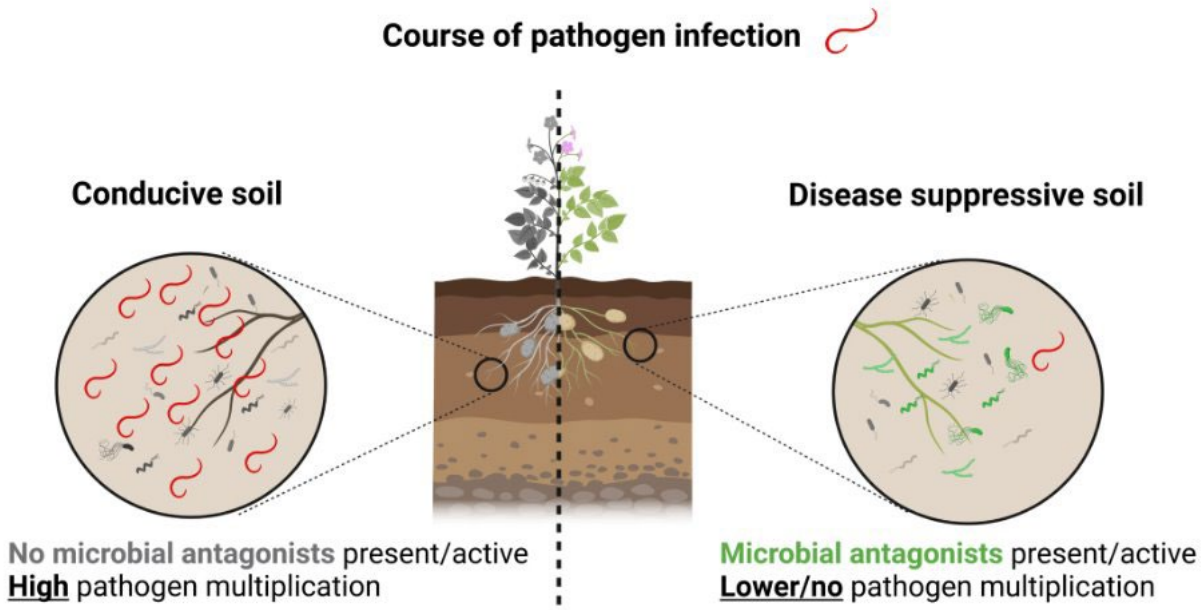
WAGENINGEN
UNIVERSITY & RESEARCH

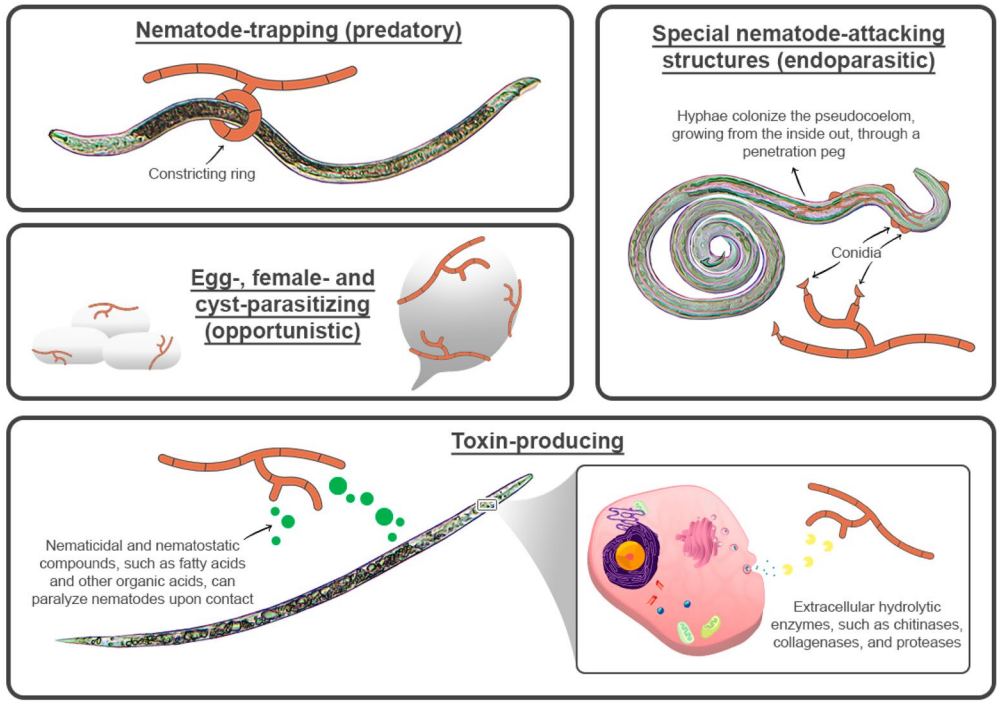
Microbiële onderdrukking van nematoden

Weerbare bodems



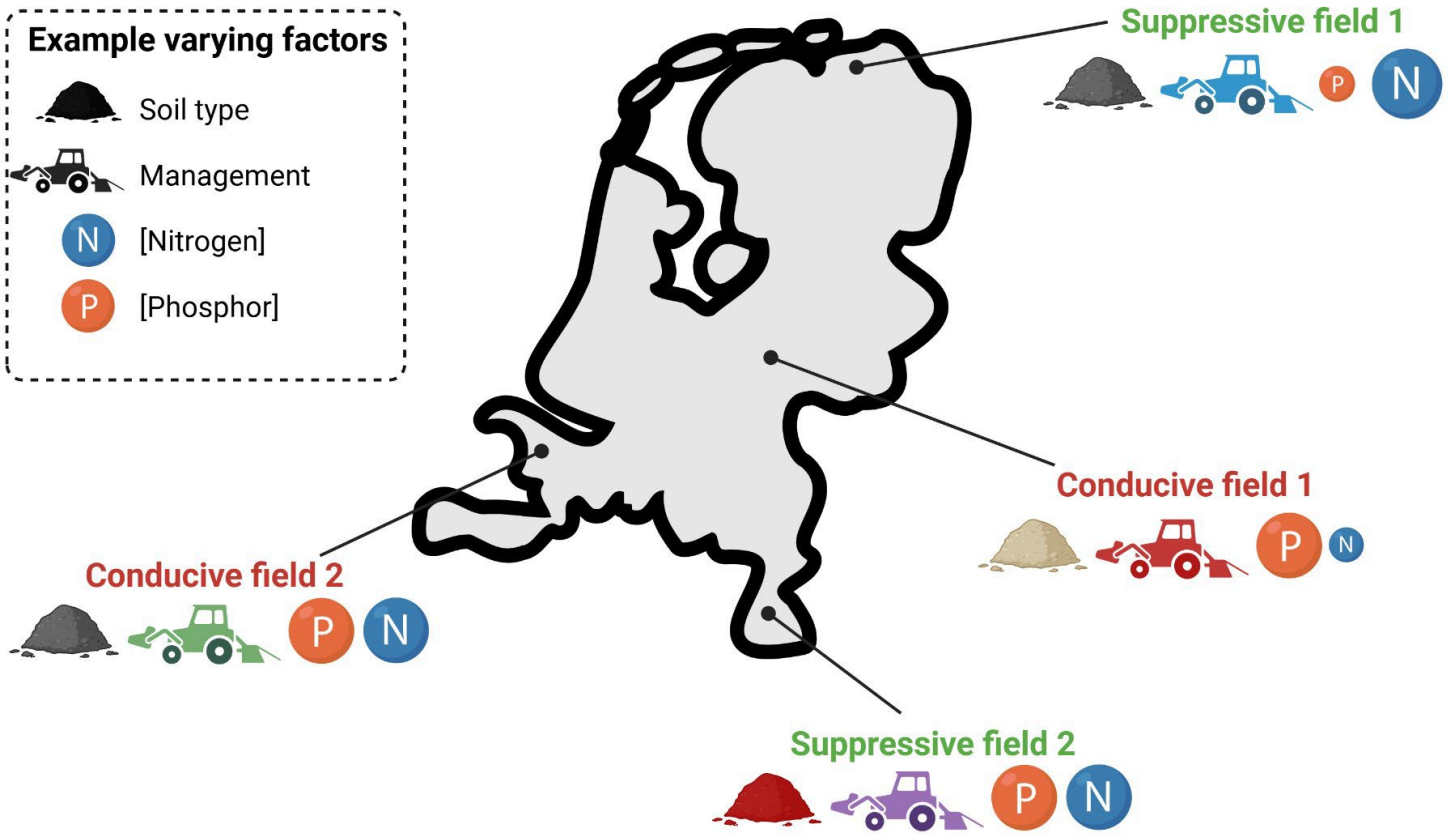
Microbiële onderdrukking van nematoden
Weerbare bodems



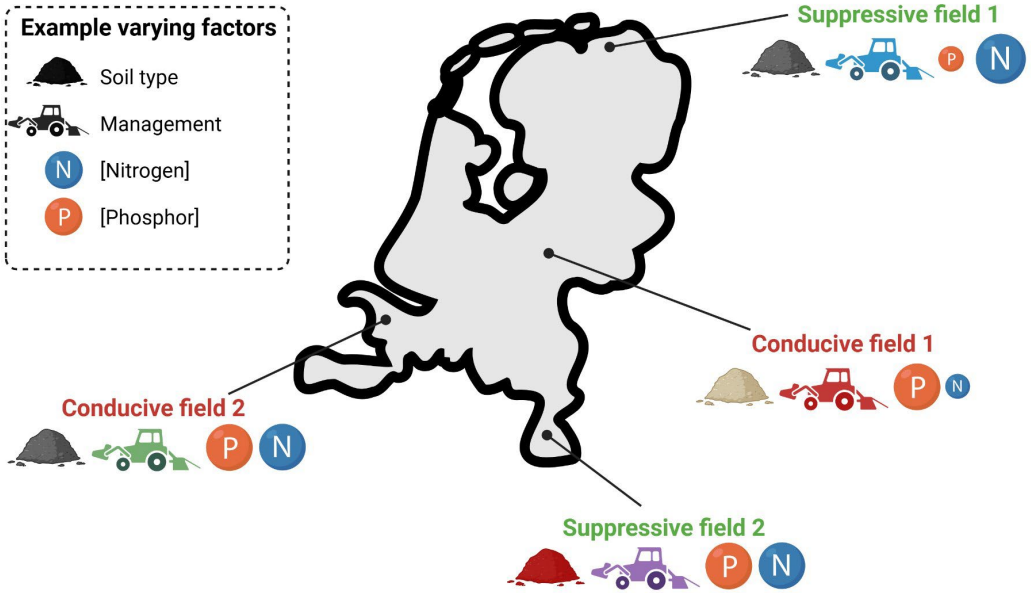


Pires et al, (2022)

+ISR

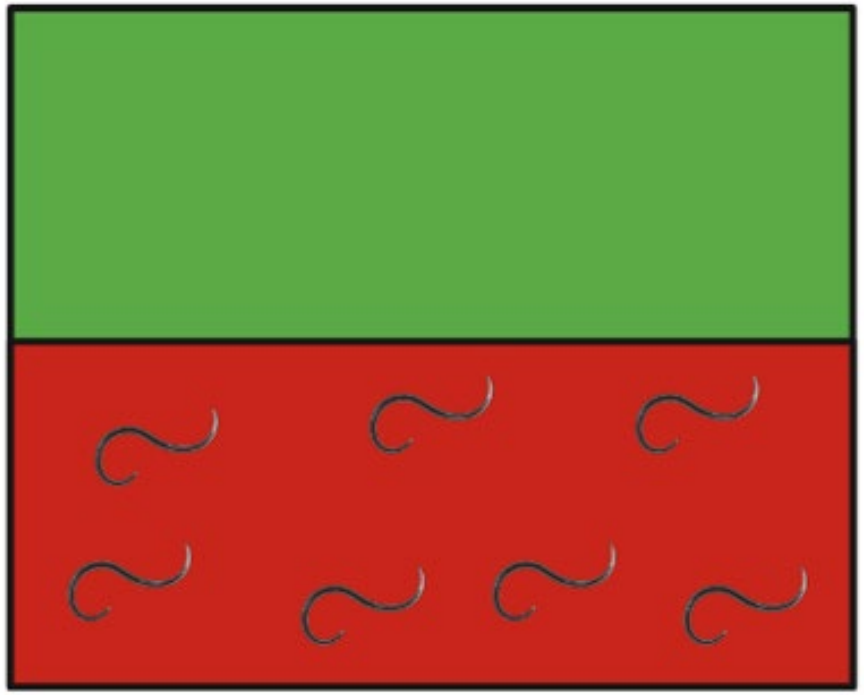


Biotische en abiotische signalen kunnen ‘vertroebelen’



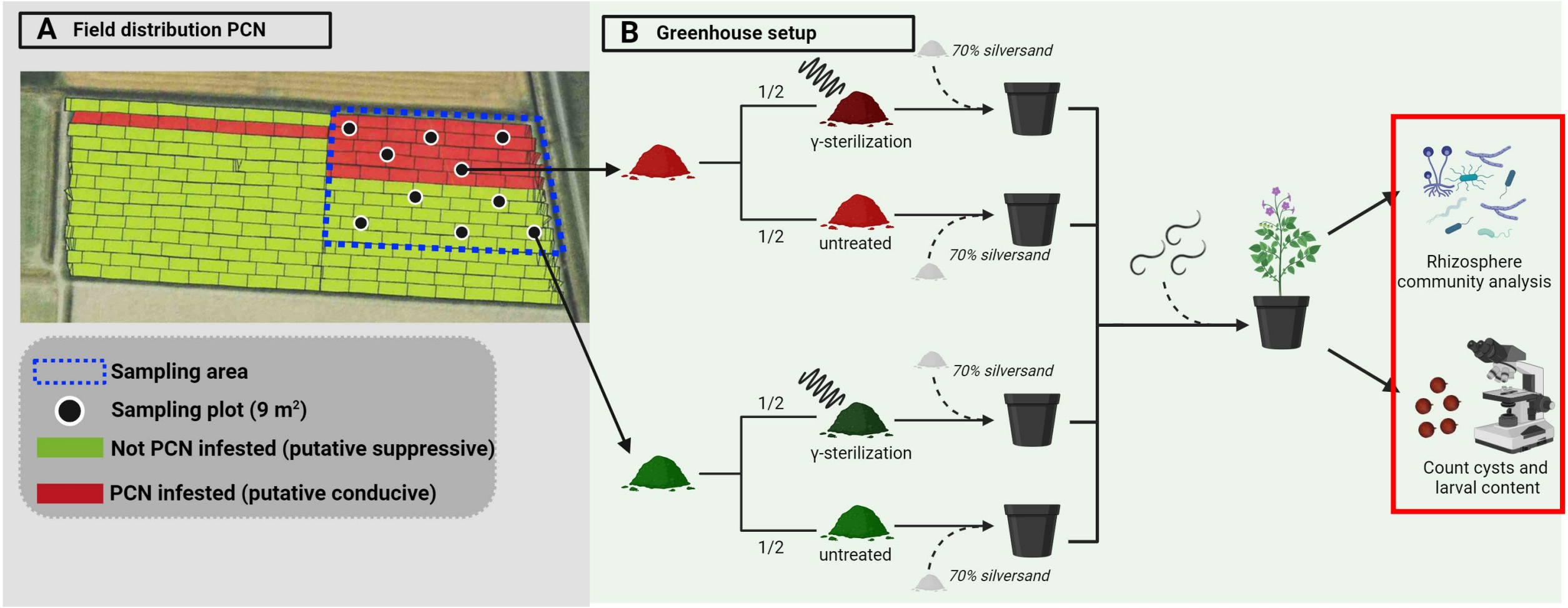
Biotische en abiotische signalen kunnen ‘vertroebelen’

‘Bonte percelen’



Identificatie?
Observeren we dit fenomeen?

Binnenveldse variatie in onderdrukking?



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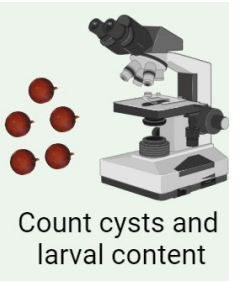
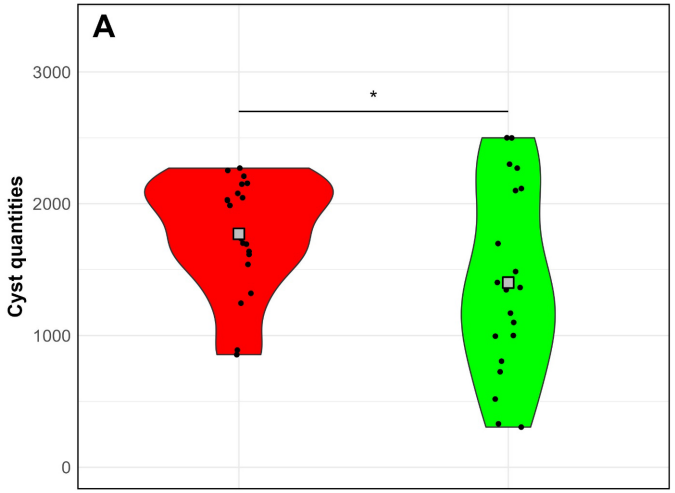
ACA onderdrukking in 2 vd 4 velden





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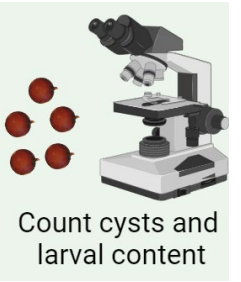
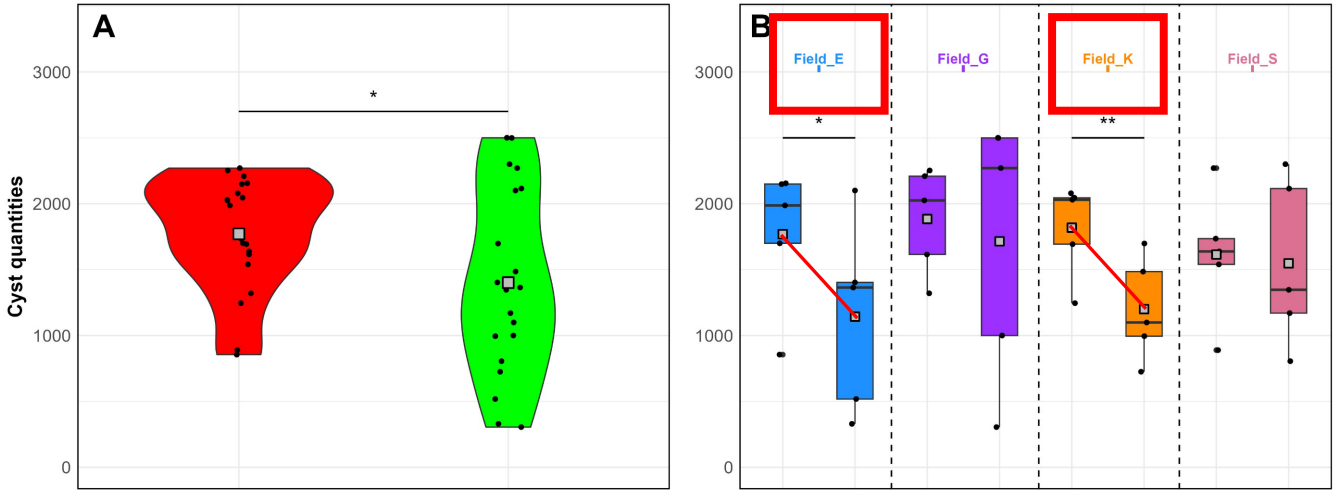
ACA onderdrukking in 2 vd 4 velden





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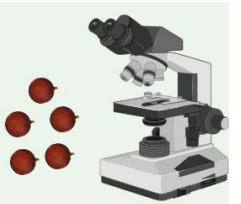
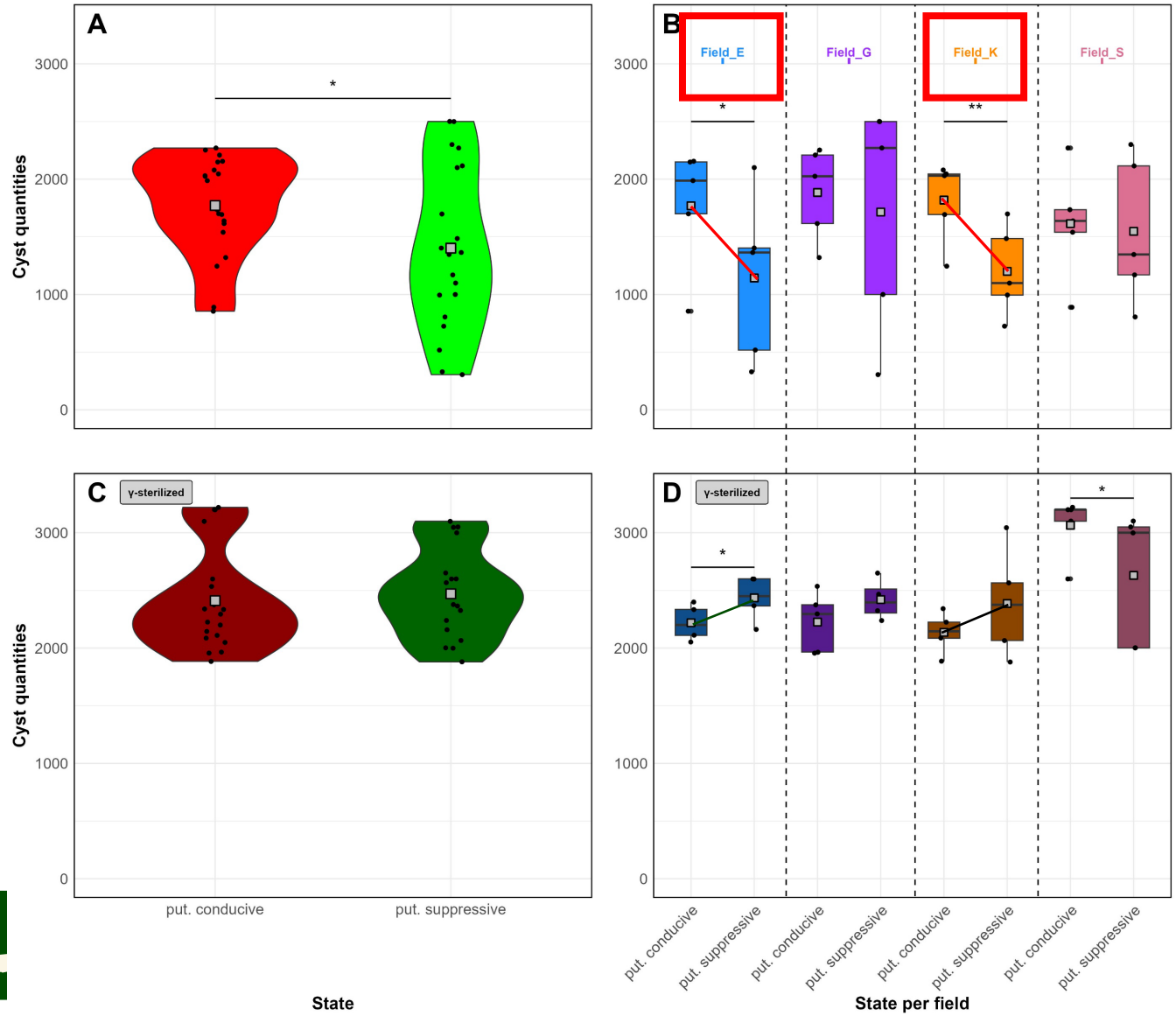
ACA onderdrukking in 2 vd 4 velden



Count cysts and larval content



Biotic origin

Microbiome analysis

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Schimmelrijkdom = gelijk

	Fungal OTUs		
		Mean OTUs	
	Total OTUs	Put. con	Put. sup
Fields aggregated	560	57,4 ^{a}	65,3 ^{a}
Field E	341	77,6 ^{a}	93,4 ^{a}
Field G	207	42,2 ^{a}	69.0 ^{a}
Field K	174	49,8 ^{a}	36,8 ^{a}
Field S	215	59,8 ^{a}	61,8 ^{a}

Geen (statistisch) verschil in schimmelrijkdom

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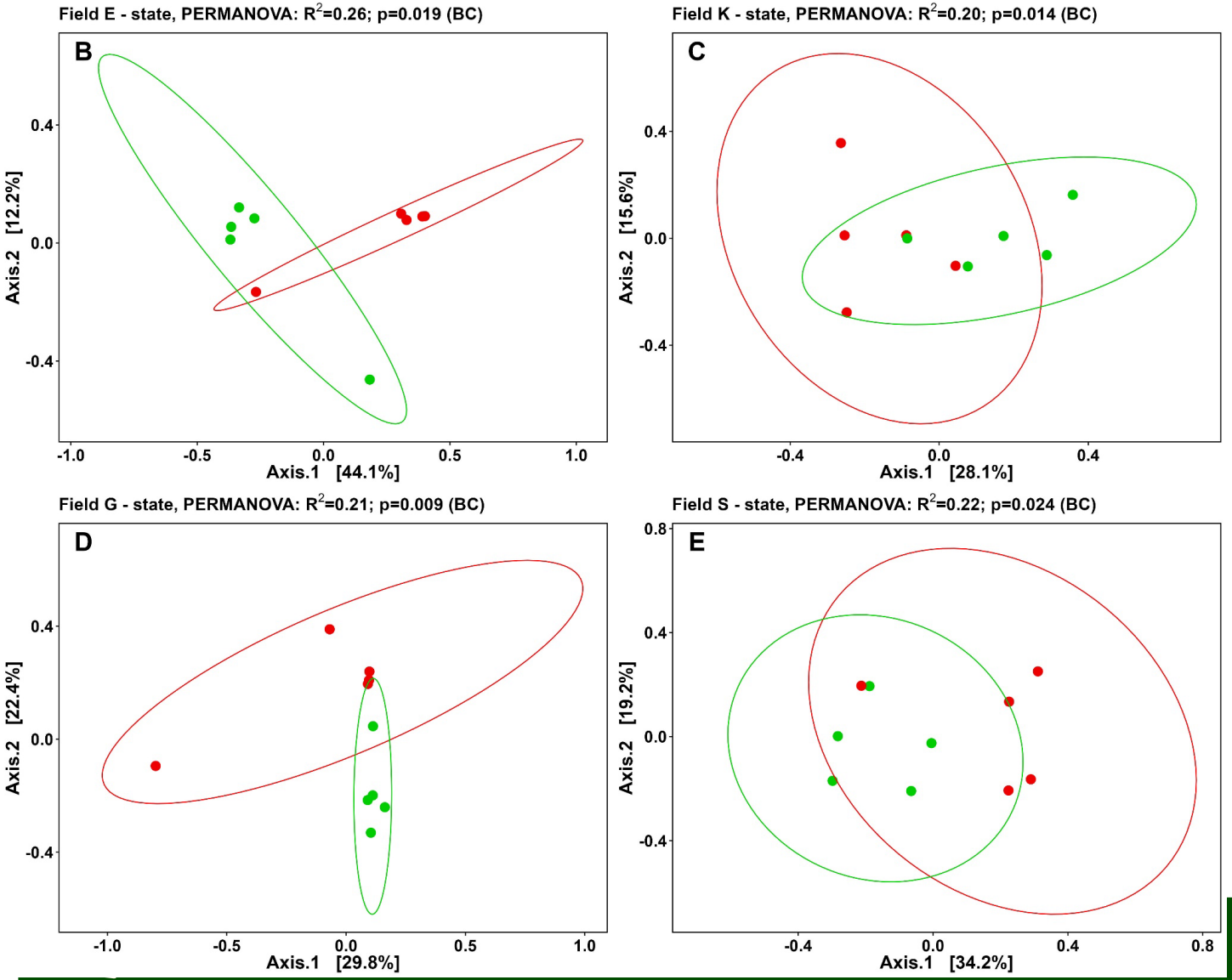
Samenstelling = verschillend



Schimmel gemeenschappen verschillen in samenstelling!

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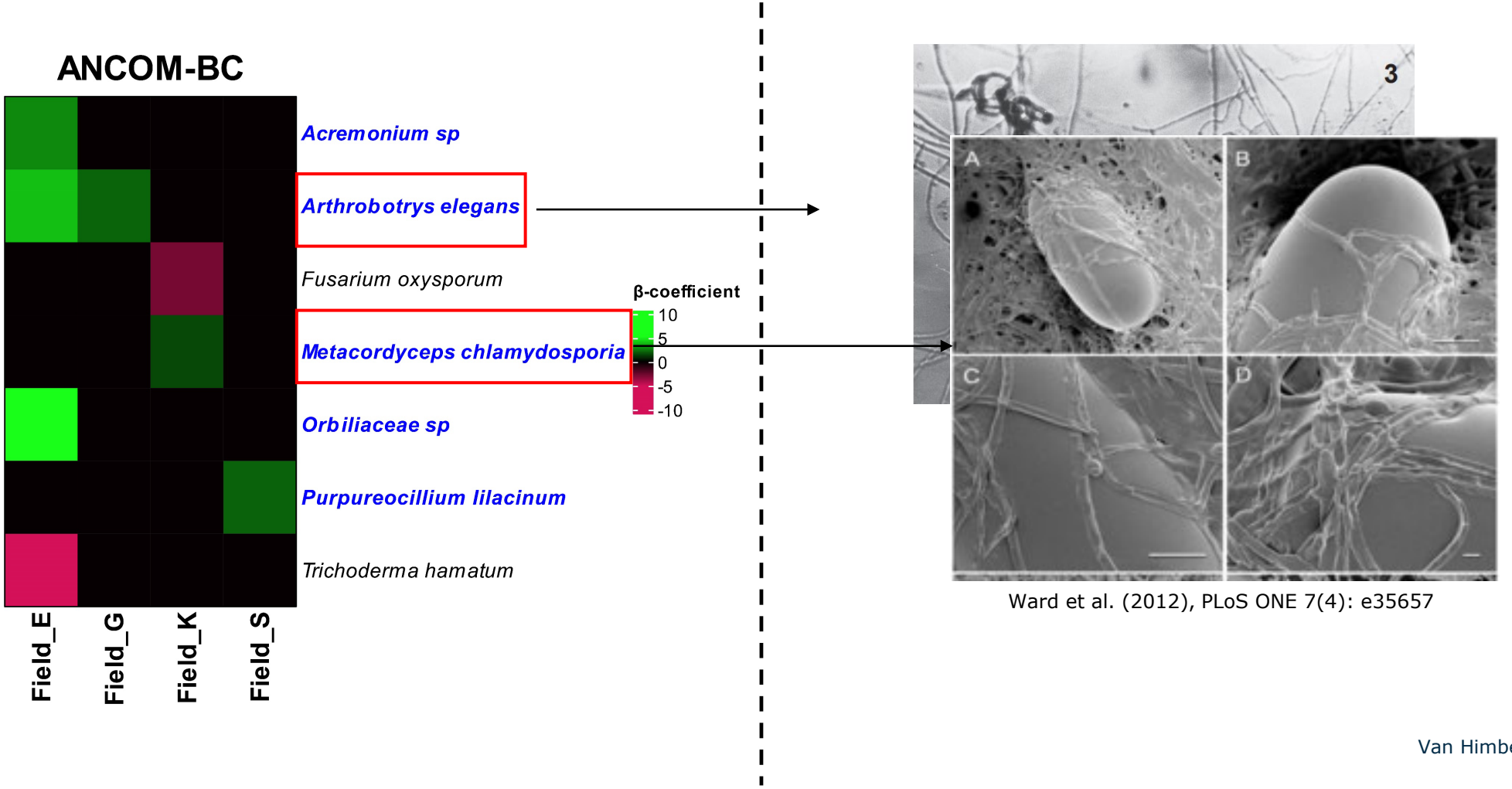
Antagonisten aanwezig!

Schimmels

Rhizosphere community analysis



Ward et al. (2012), PLoS ONE 7(4): e35657

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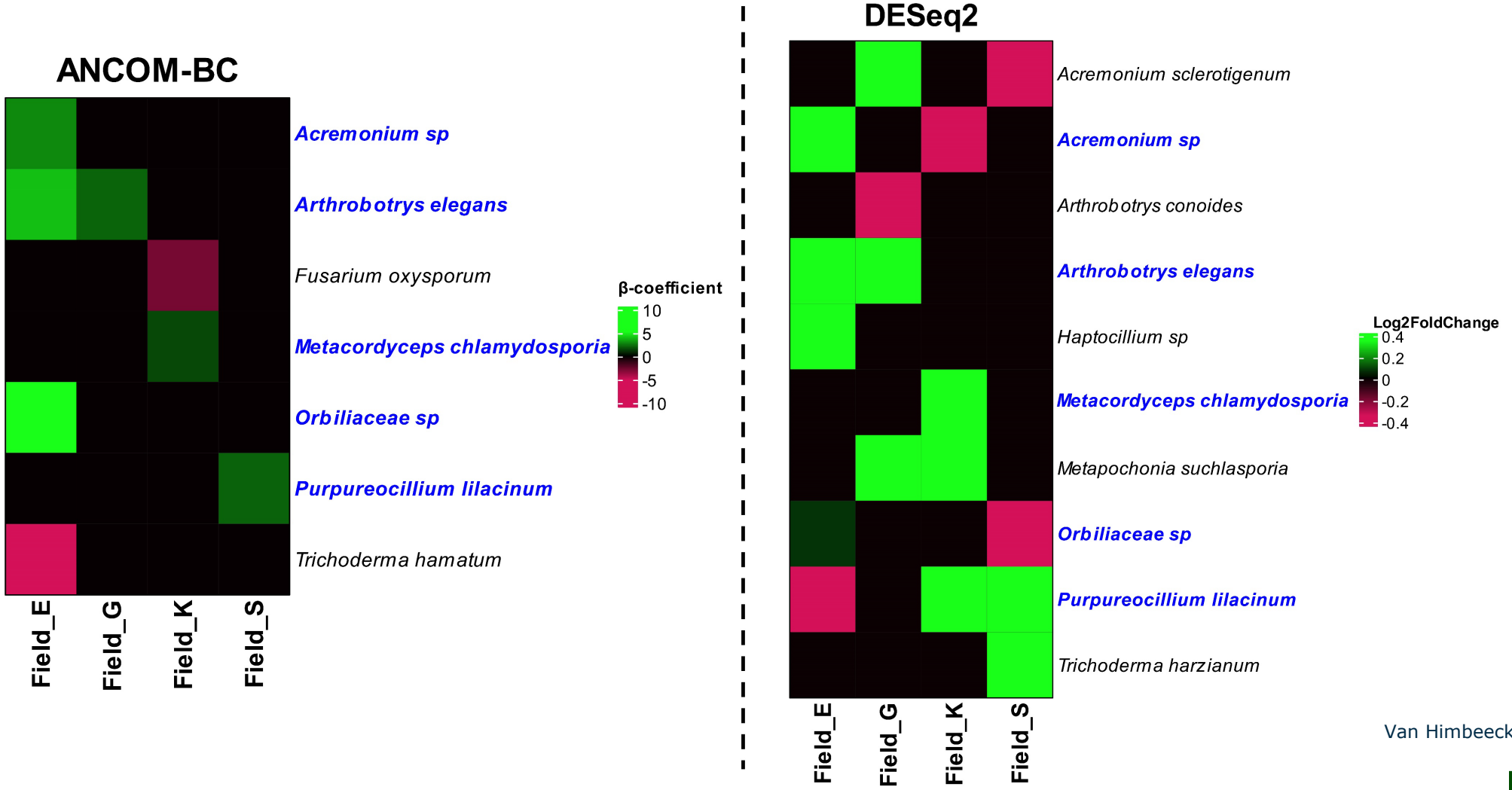
Antagonisten aanwezig!

Schimmels

Rhizosphere community analysis



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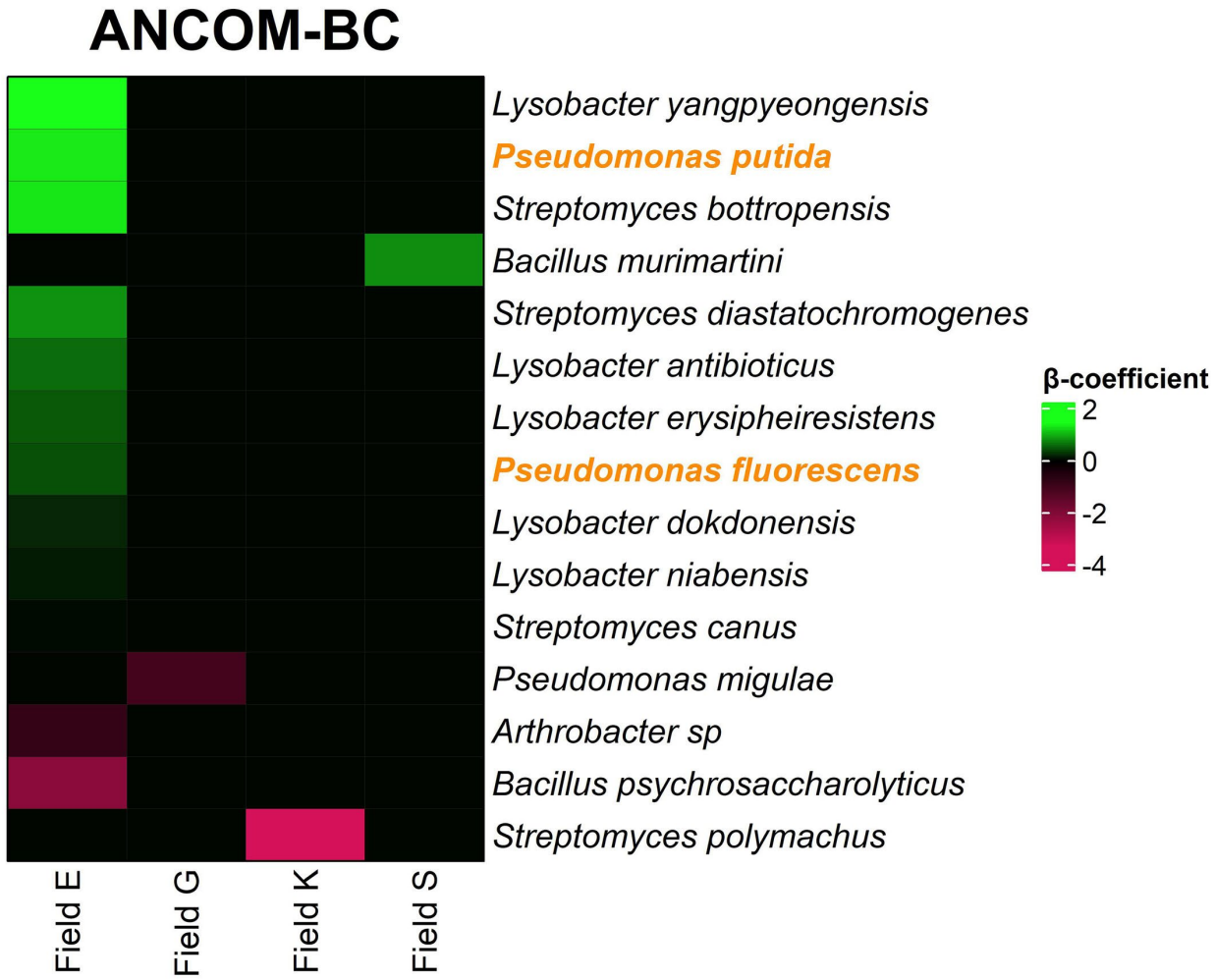
Antagonisten aanwezig!

Bacteriën

Rhizosphere community analysis



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Tussentijdse conclusies

- Natuurlijke weerbaarheid tegen ACA in NL
- Binnenveldse variatie, heterogene vestiging aaltjes
- Velden verschillen in samenstelling van antagonisten

Kan natuurlijke weerbaarheid wereldwijd worden benut?

Verspreiding antagonisten?

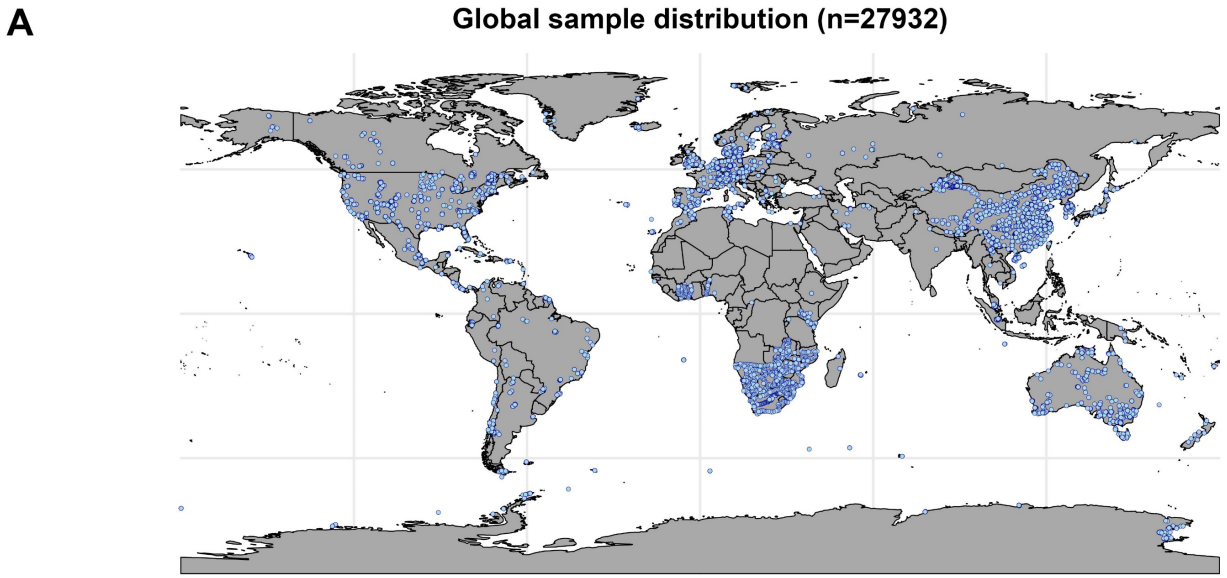
Als we antagonisten willen gebruiken voor natuurlijk bestrijding, moeten we weten waar ze zijn!

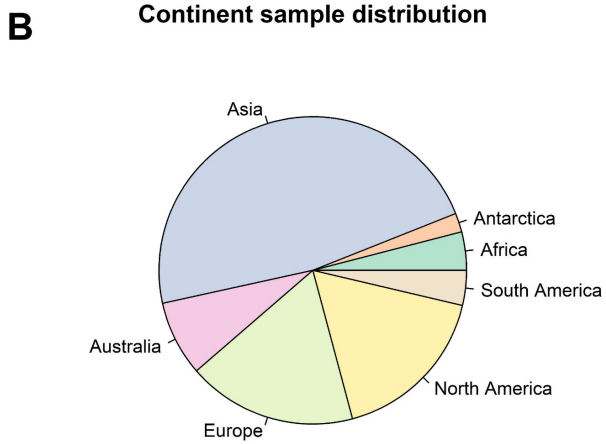
?

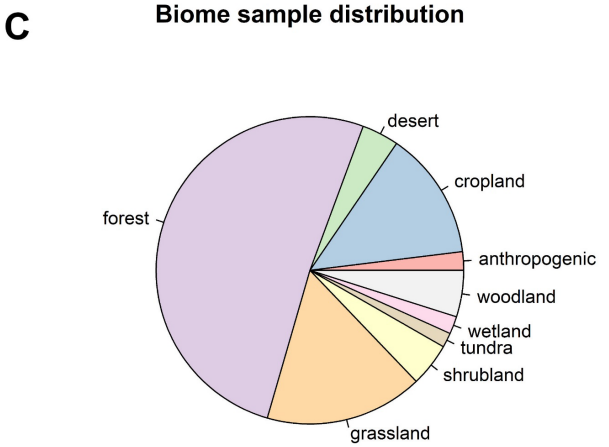
Niet systematisch gedocumenteerd

GlobalFungi database

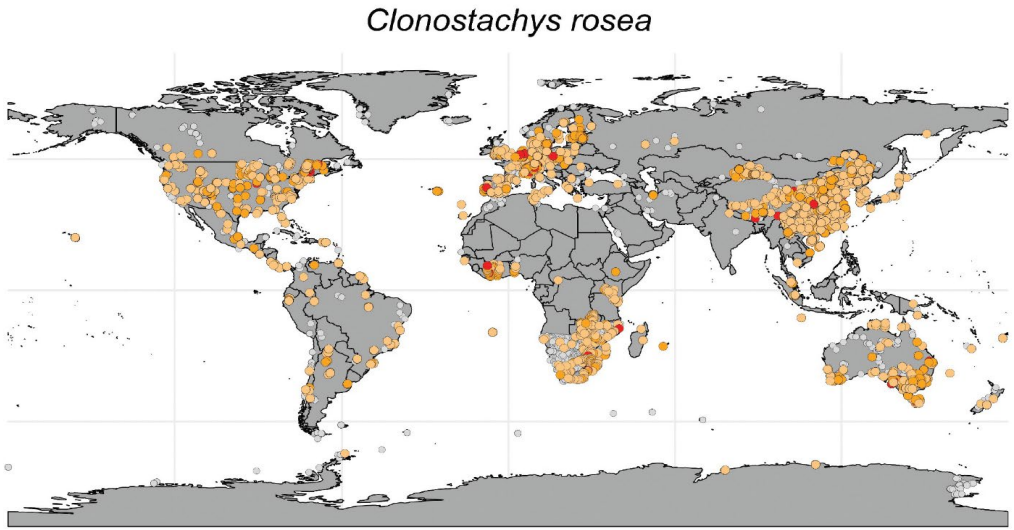
- ~28,000 samples
- 484 studies
- Soortniveau



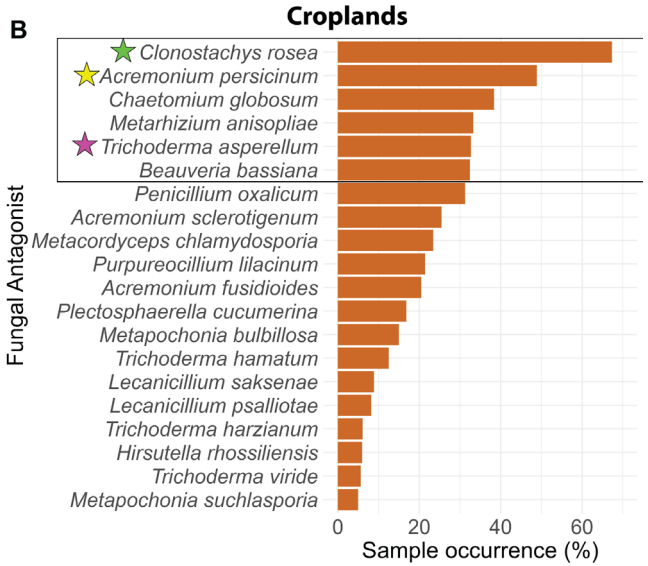


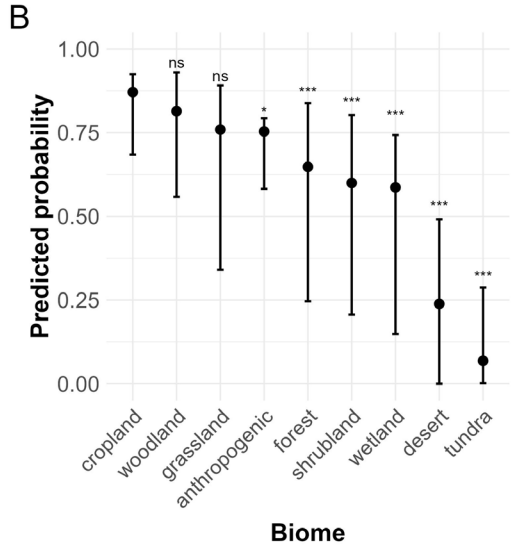


Van Himbeeck et al. (under review)



Geen biogeografische patronen





Veelvoorkomend in landbouw bodems!

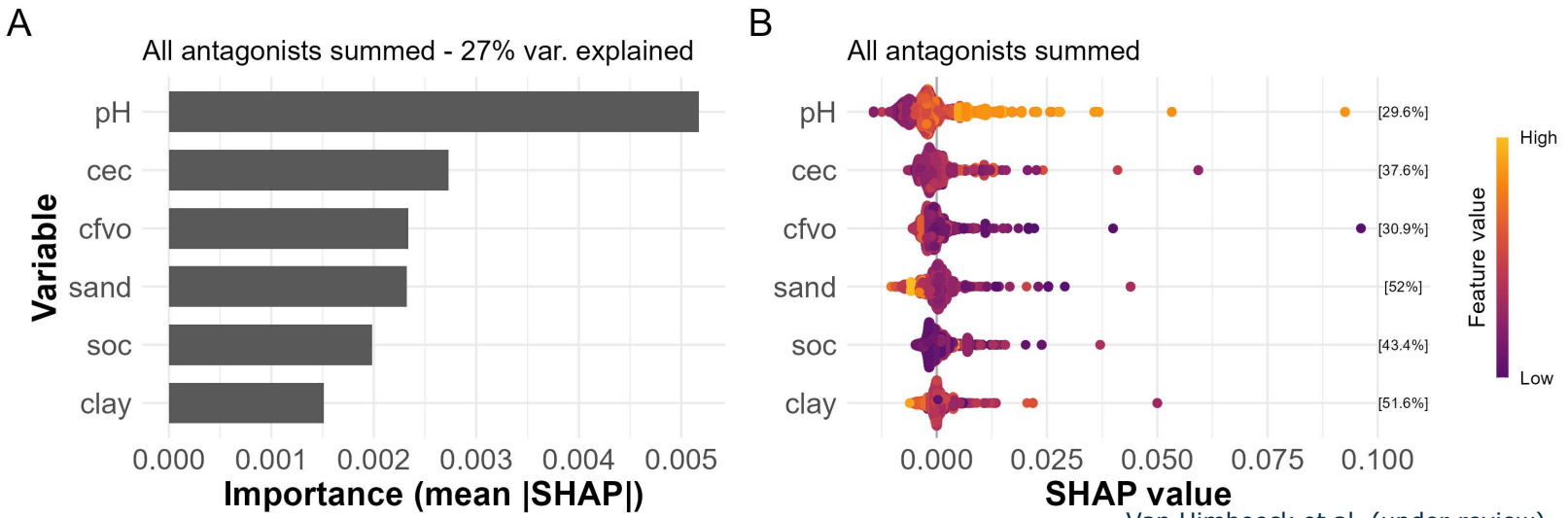
Van Himbeeck et al. (under review)

Hebben de meeste landbouw bodems onderdrukkend potentieel?

(kunnen we dit gebruiken?)

Aan welke knoppen kunnen we draaien?

Bodem pH?



Van Himbeeck et al. (under review)

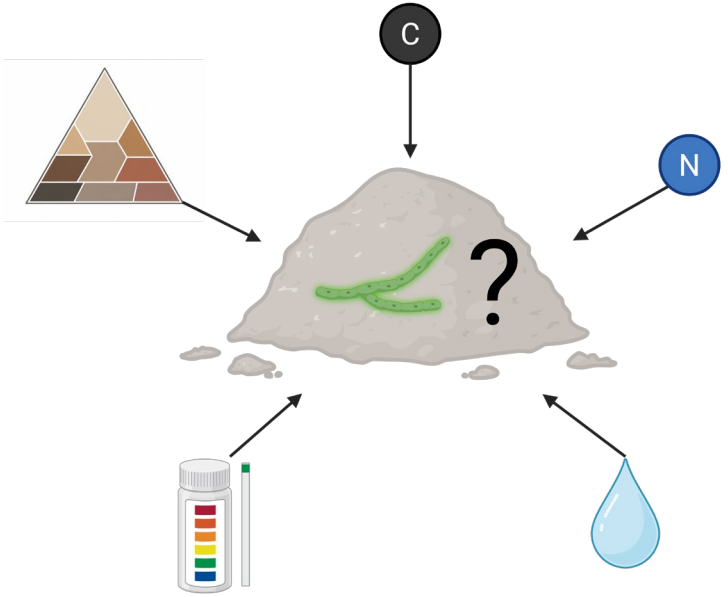
Cover crops?

Monocultuur?

Organisch materiaal?

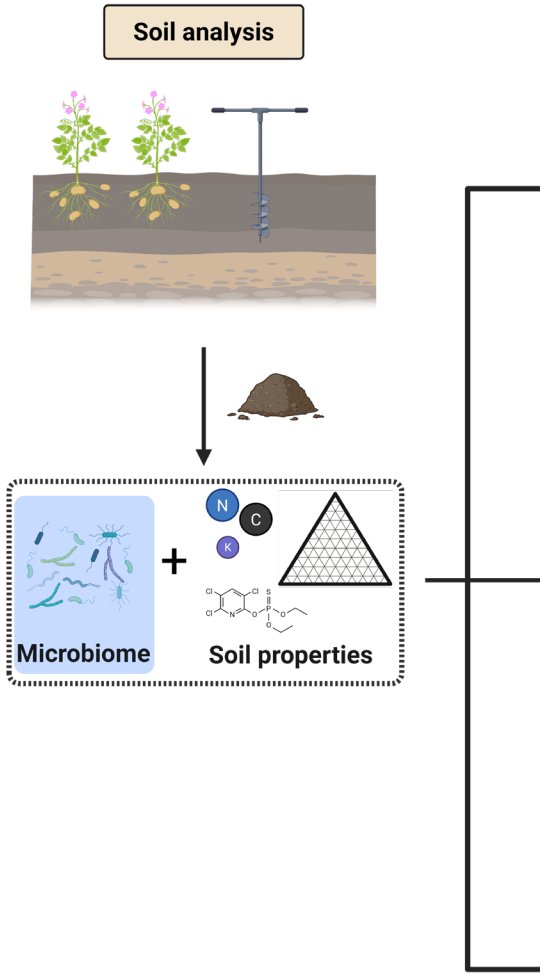
Toekomst van microbiële beheersing van aaltjes?

- Minder focus op individuele taxa in enkele media
- Identificeren van condities die vestiging & activiteit stimuleren



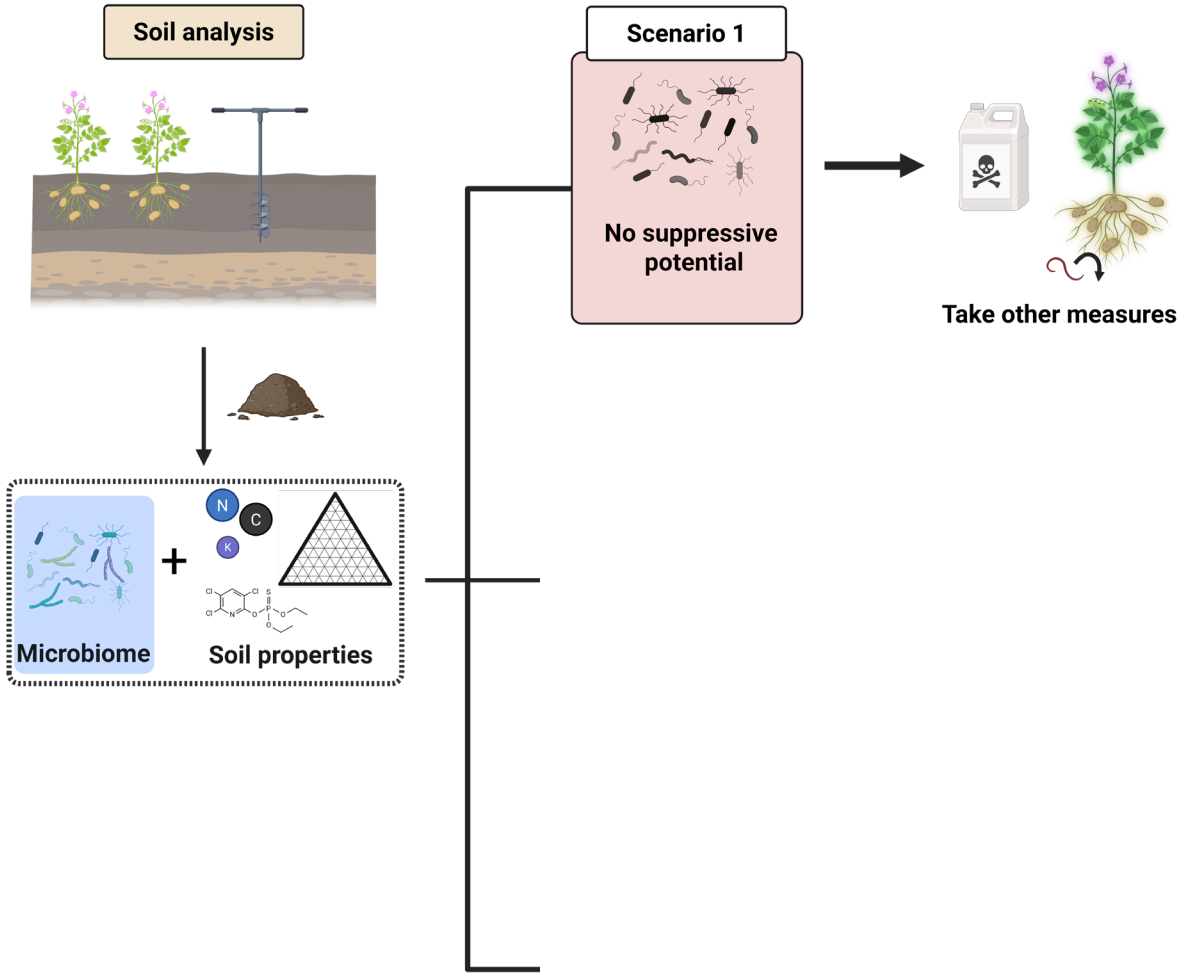
- Gebruik van aanwezige antagonisten(?)!

Conceptual toolbox based on native soil suppressiveness



Van Himbeeck (2026, PhD thesis)

Conceptual toolbox based on native soil suppressiveness



Van Himbeeck (2026, PhD thesis)

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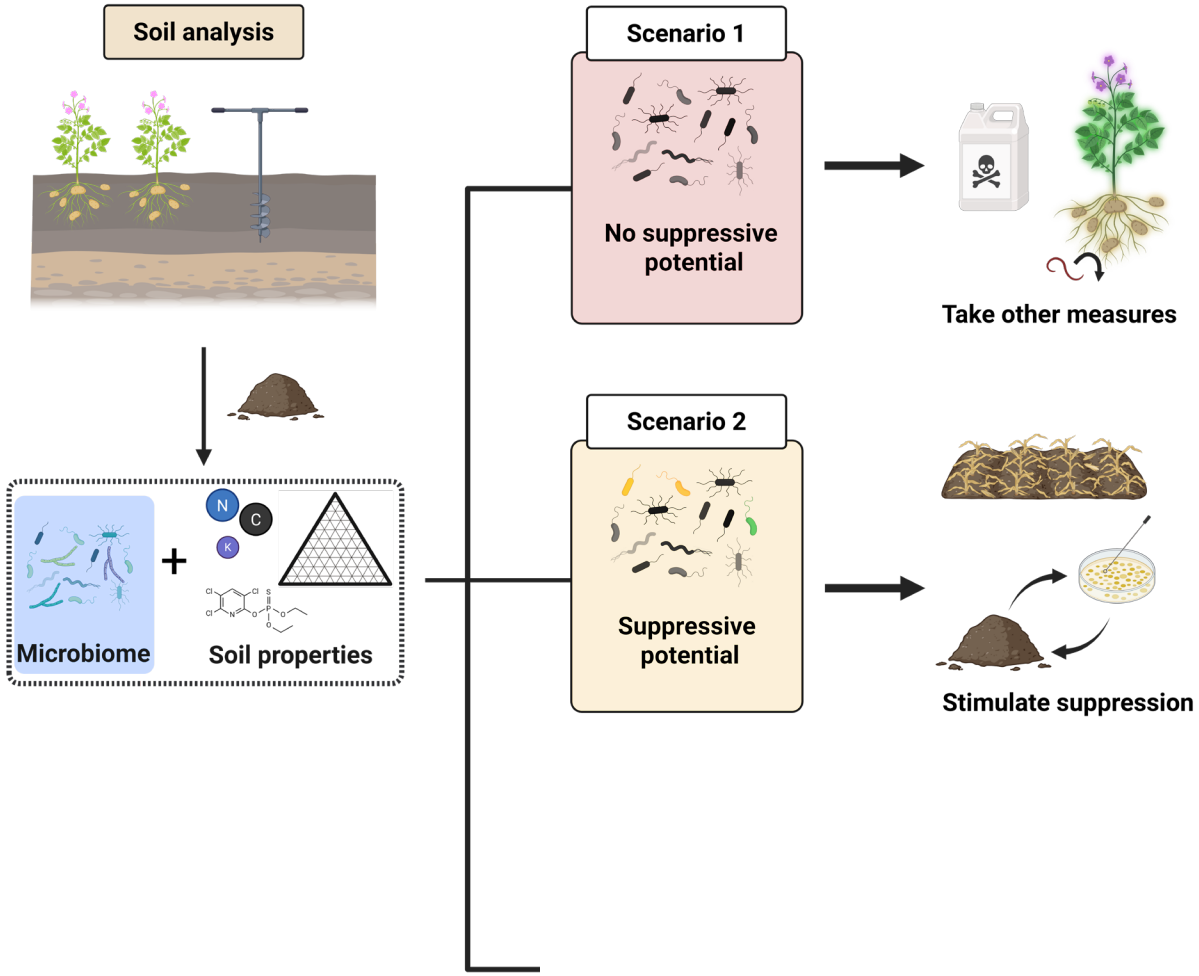

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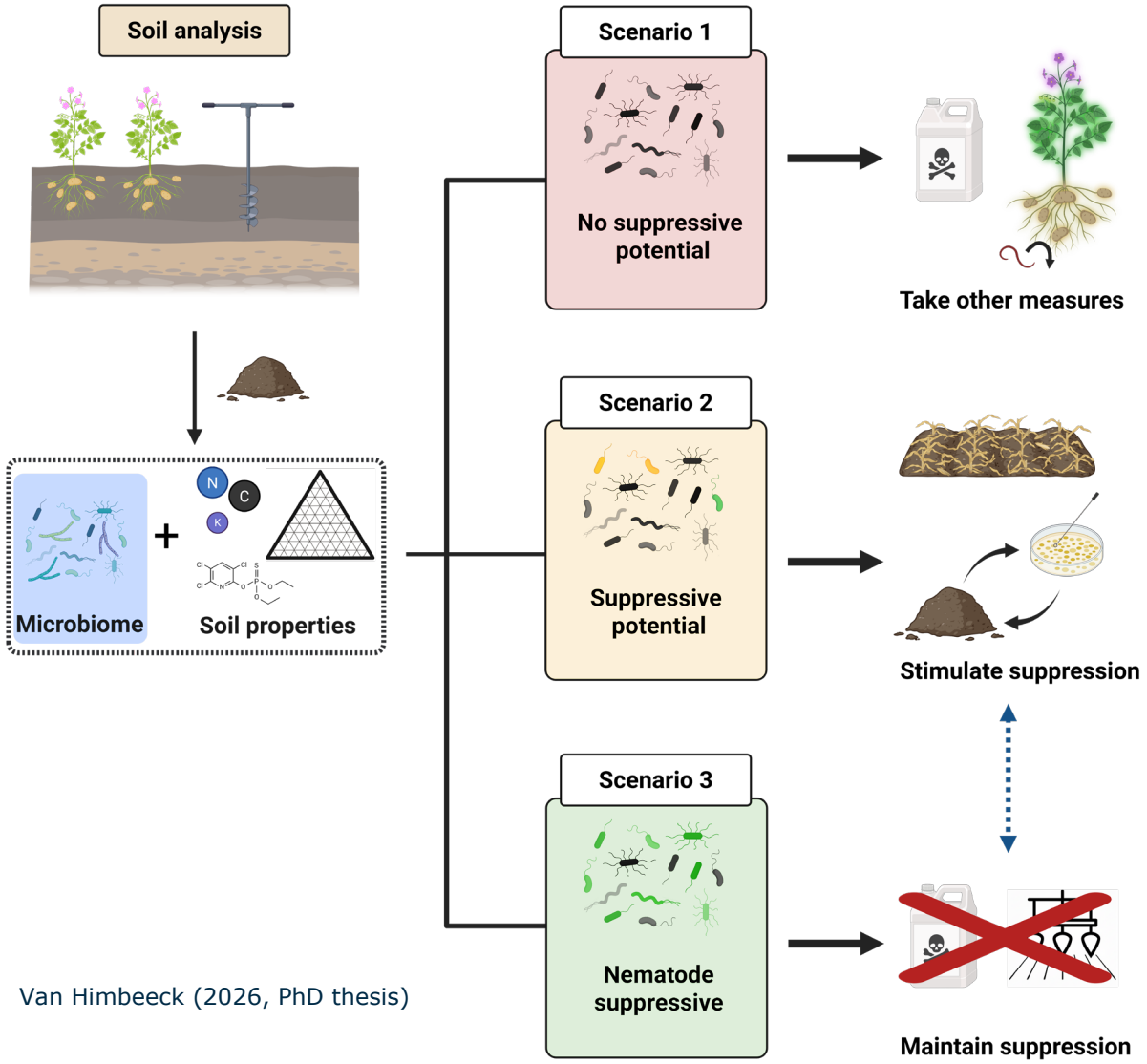

Van Himbeeck (2026, PhD thesis)

Contact: robbert.vanhimbeeck@wur.nl

Binnenveldse variatie paper

edu.nl/34yfk

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Hans Helder
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Roeland Berendsen
André Bertran
Egbert Schepel

Schimmel antagonisten preprint

Van Himbeeck et al. (under review)

Hans Helder
Stefan Geisen
Julian Helfenstein
Geert Smant

PhD thesis

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