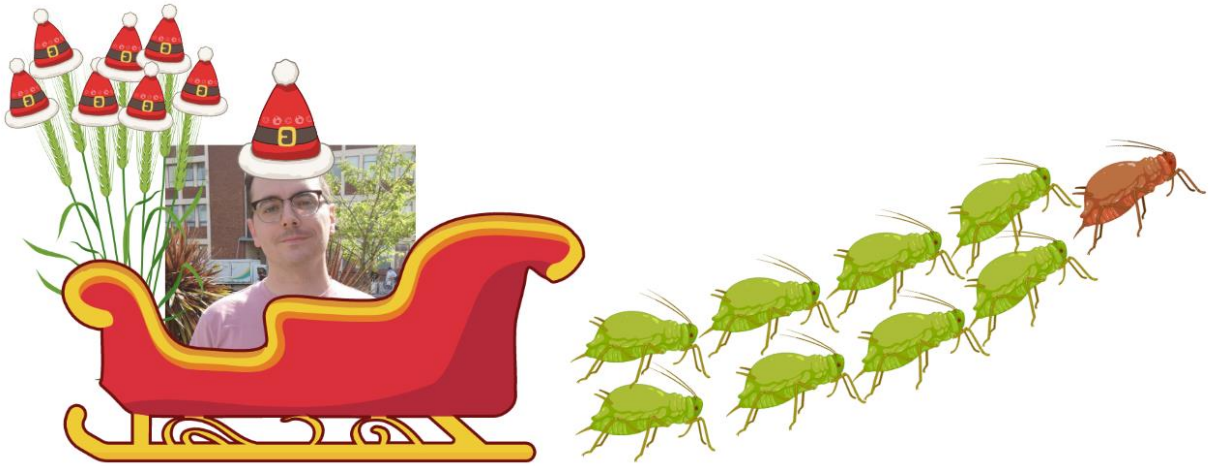


Can agro-ecological factors explain variation in the endosymbiont profile of cereal aphids?

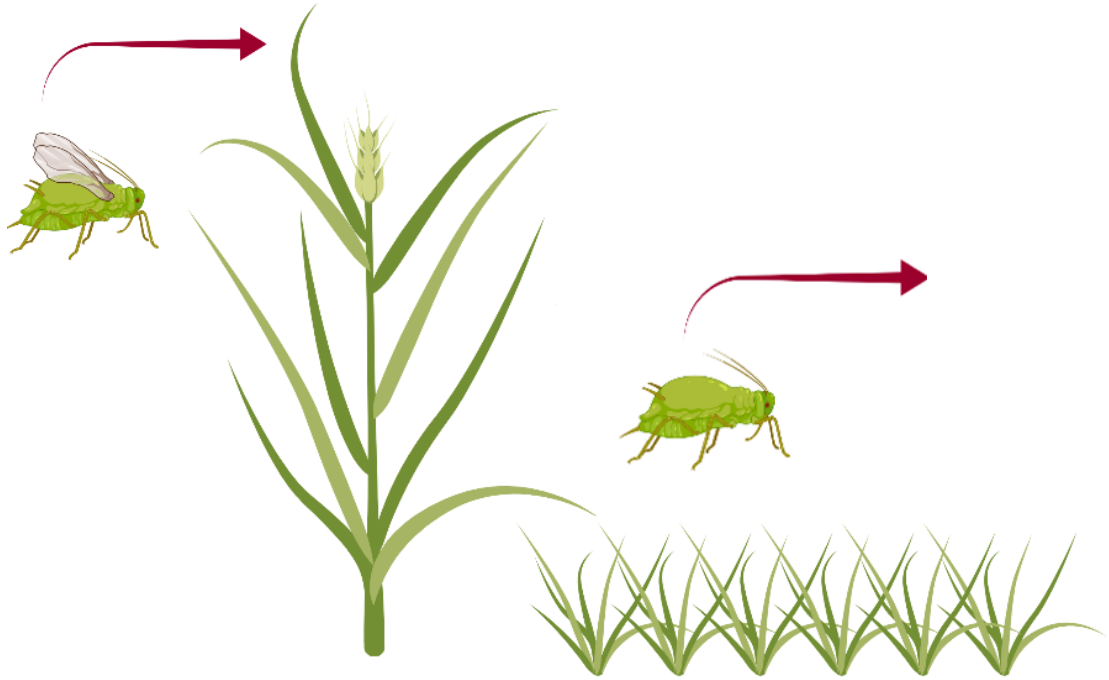
Dr Daniel Leybourne

1851 Research Fellow /
Alexander von Humboldt Postdoctoral Fellow

@danielleybourne



Why are cereal aphids important?







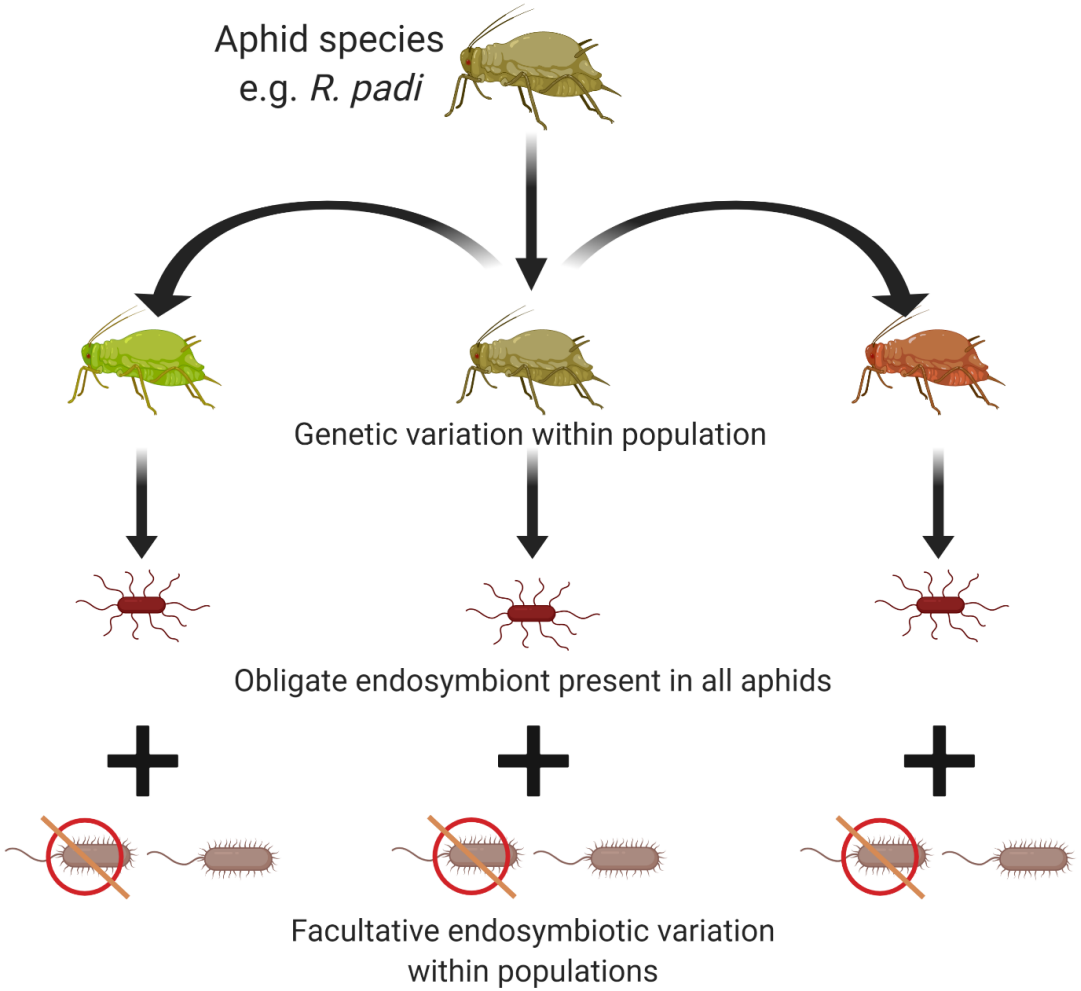




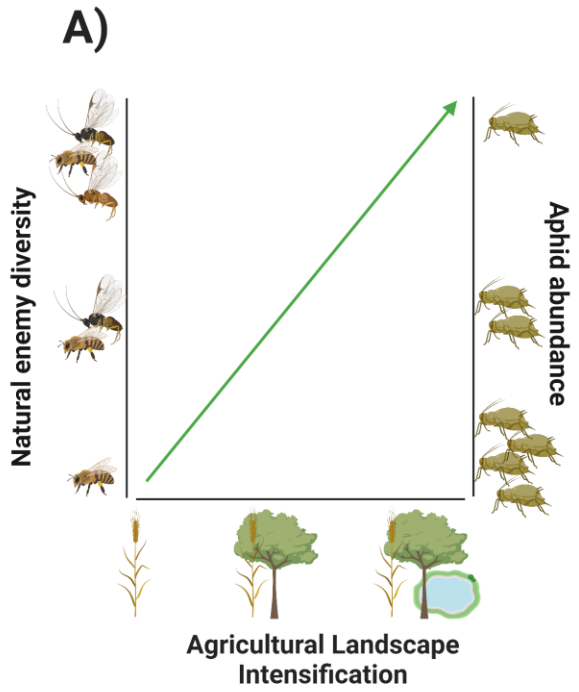
Why are aphid endosymbionts important?

Main aphid endosymbionts:

- *Hamiltonella defensa*
- *Regiella insecticola*
- *Serratia symbiotica*
- *Fukatsia symbiotica*
- *Aresnophonus spp.*
- *Rickettsia spp.*
- *Ricketsiella spp.*
- *Spiroplasma spp.*

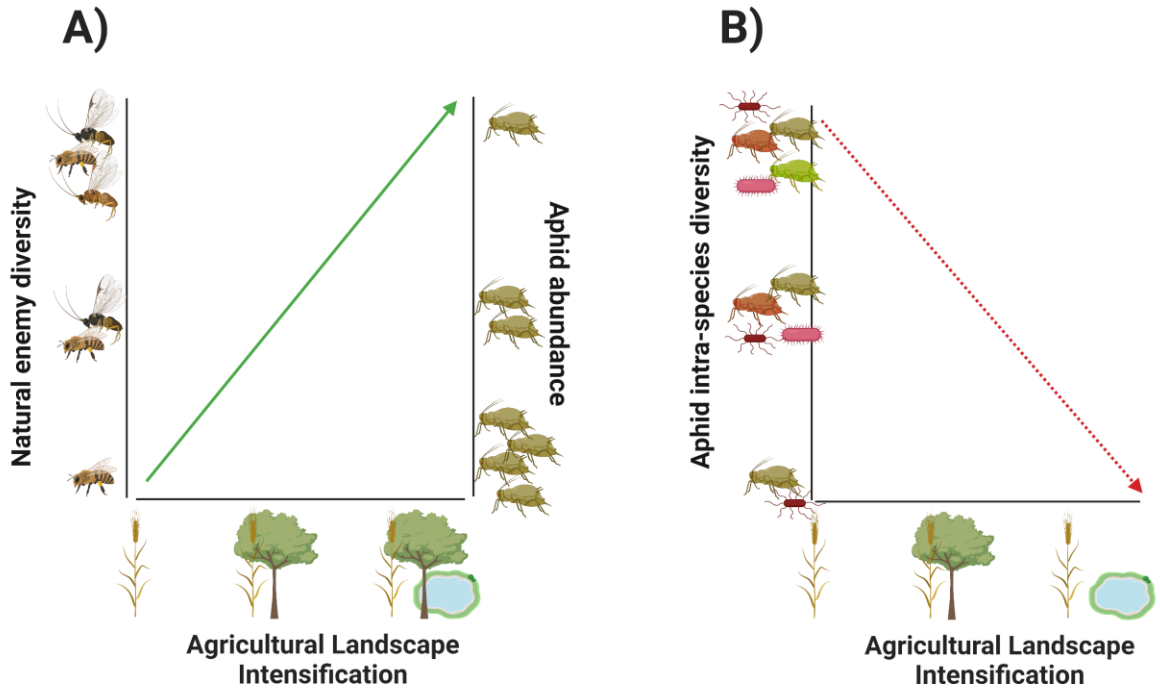


Endosymbionts are variable in aphid populations: Can the local agro-ecosystem explain this?



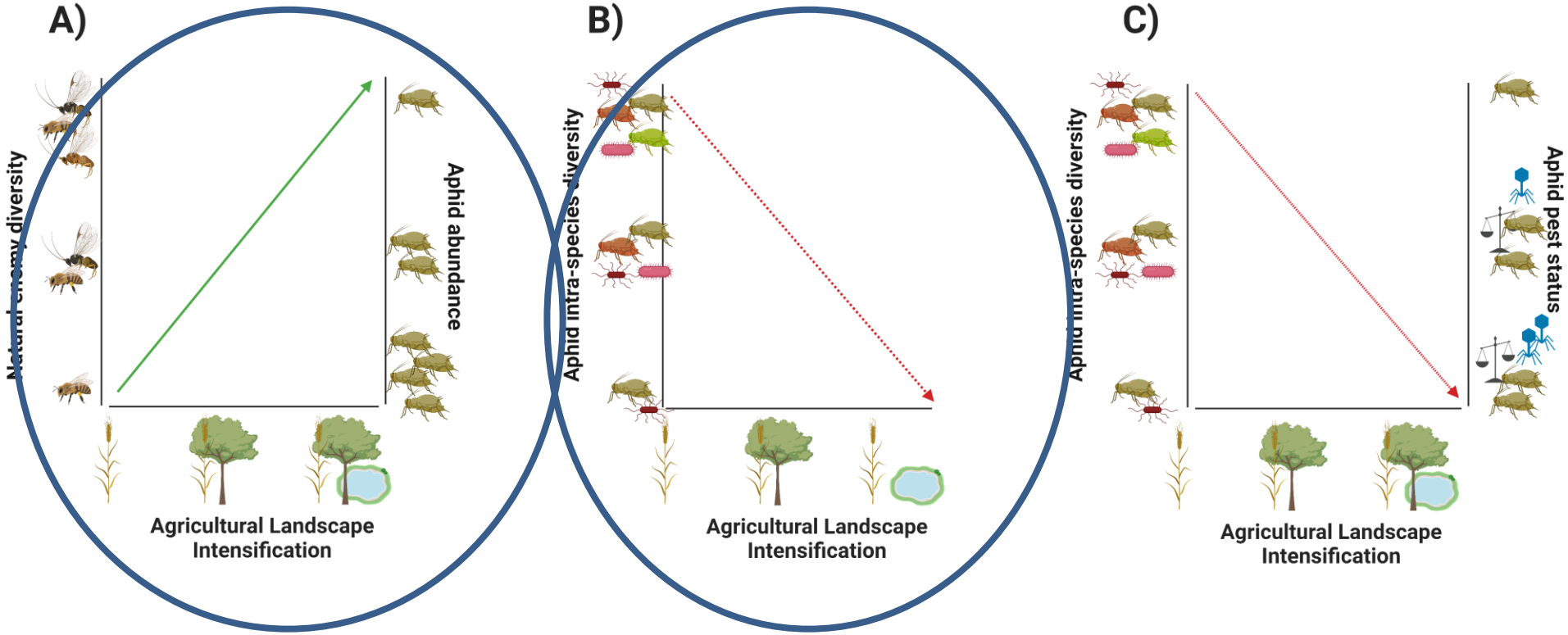
A) As agricultural intensification decreases natural enemy diversity increases leading to an increase in aphid suppression

Endosymbionts are variable in aphid populations: Can the local agro-ecosystem explain this?



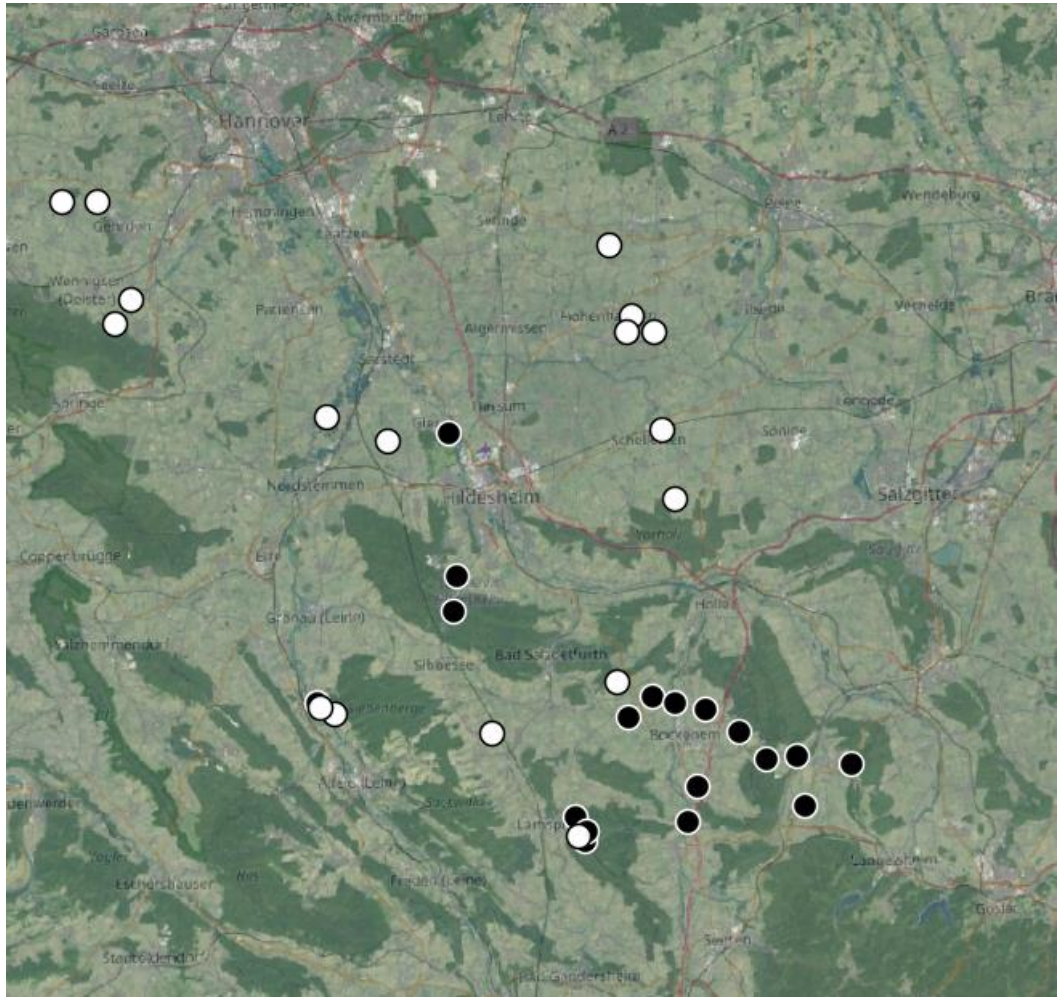
B) Increased aphid suppression in less intensive landscapes will decrease Intra-species diversity as the strongest phenotypes are selected

Endosymbionts are variable in aphid populations: Can the local agro-ecosystem explain this?



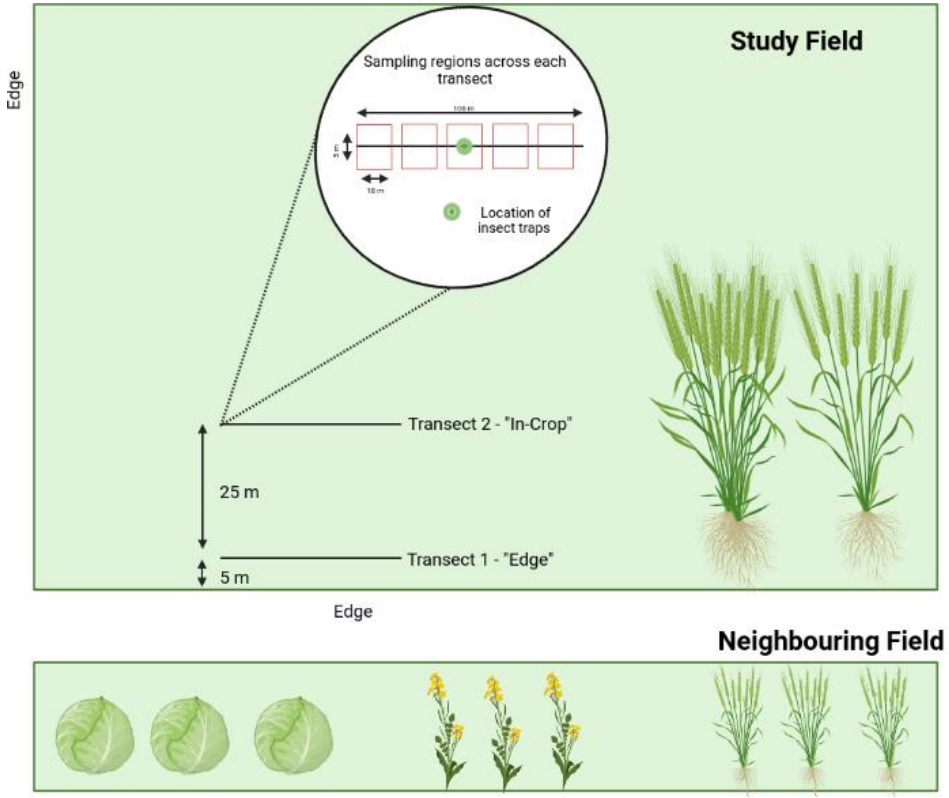
C) Observed changes in intra-species diversity correlate with a proliferation of phenotypic traits of agricultural importance

Landscape influence on aphids and endosymbionts





Landscape influence on aphids and endosymbionts



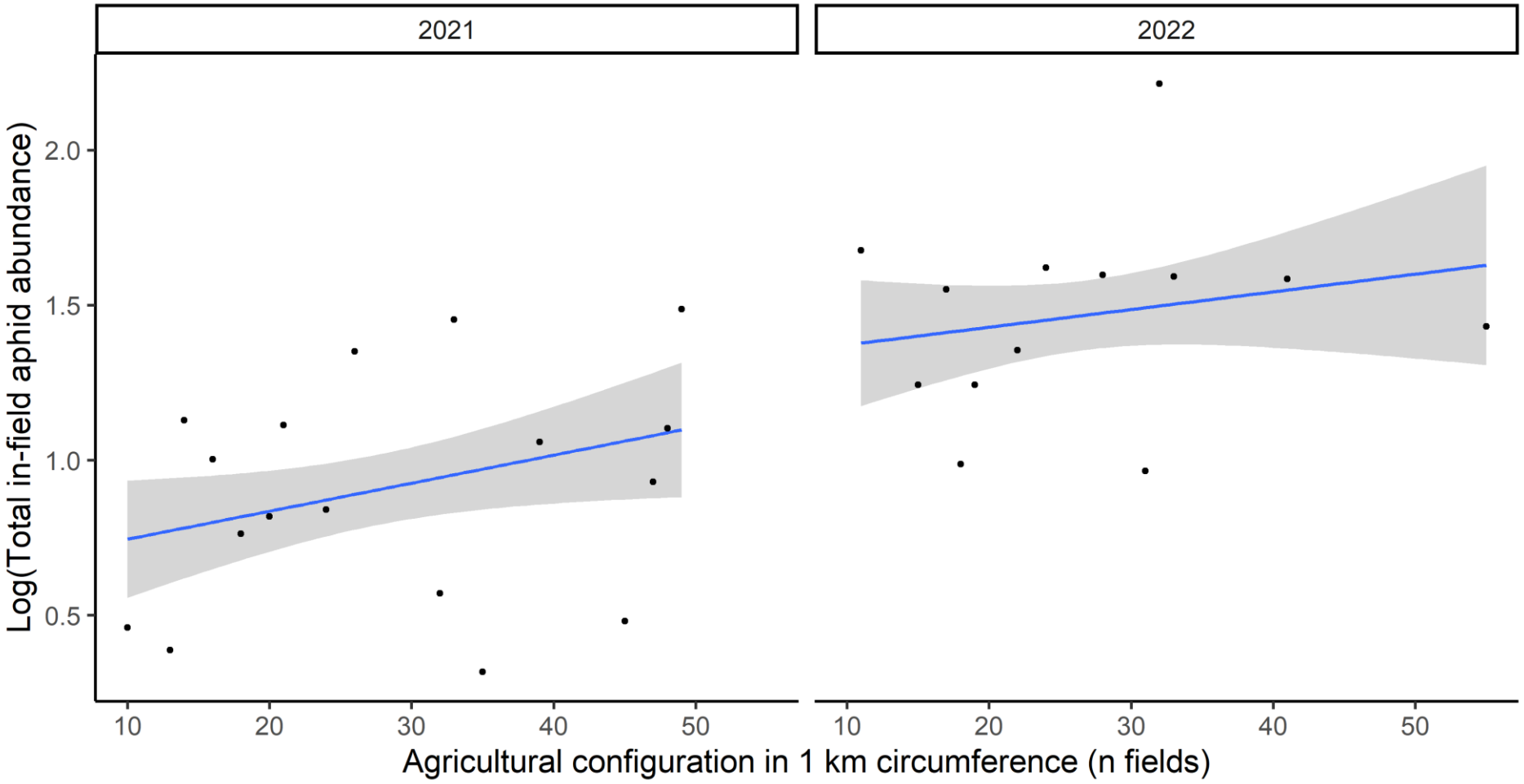


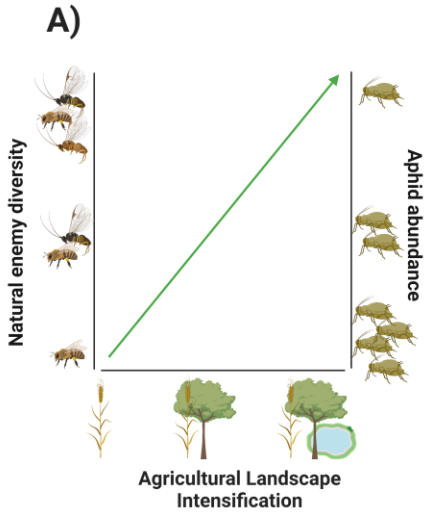




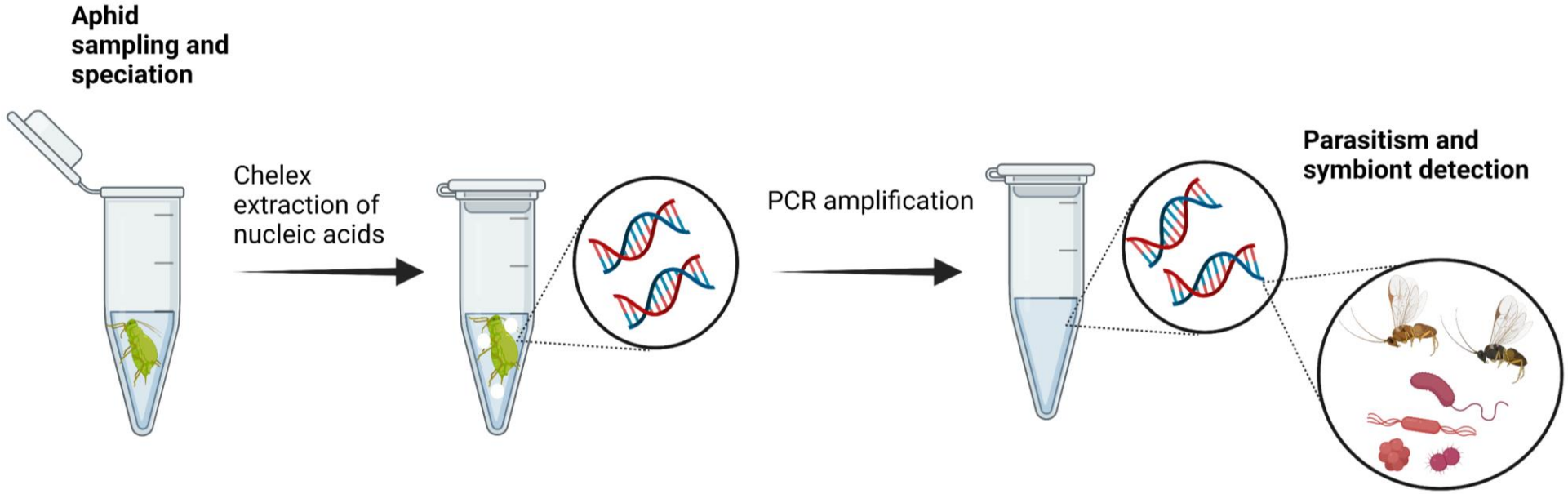


Landscape influence on aphids and endosymbionts



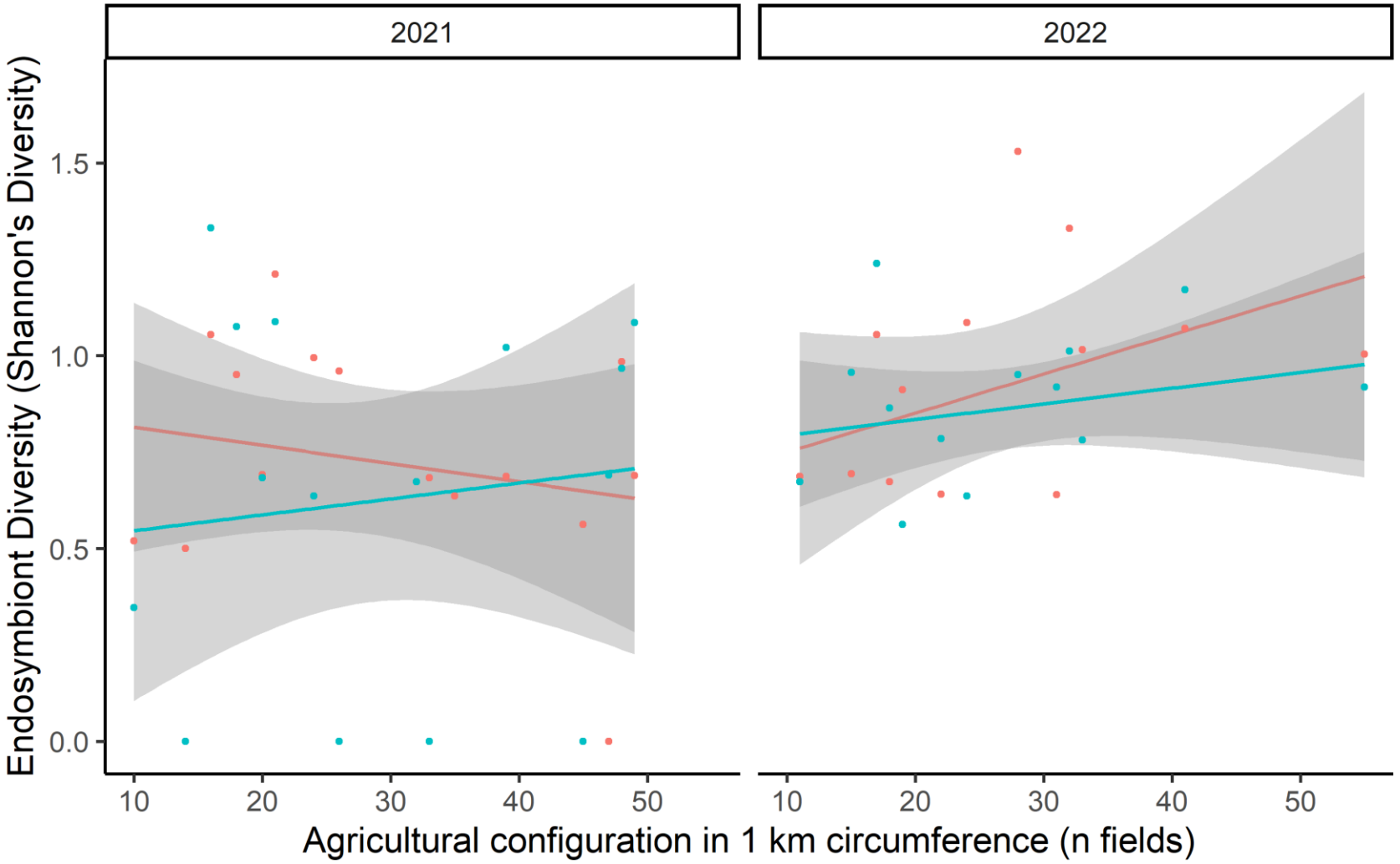


Landscape influence on aphids and endosymbionts

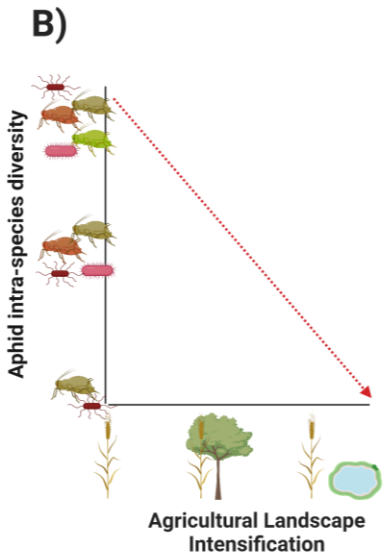


- *R. padi*: 53 samples; *H. defensa* most common (11%)
- *S. avenae:* 351 samples; *R. insecticola* most common (35%)
- *M. dirhodum:* 231 samples; *R. insecticola* most common (57%)
- Mummies: 139 samples

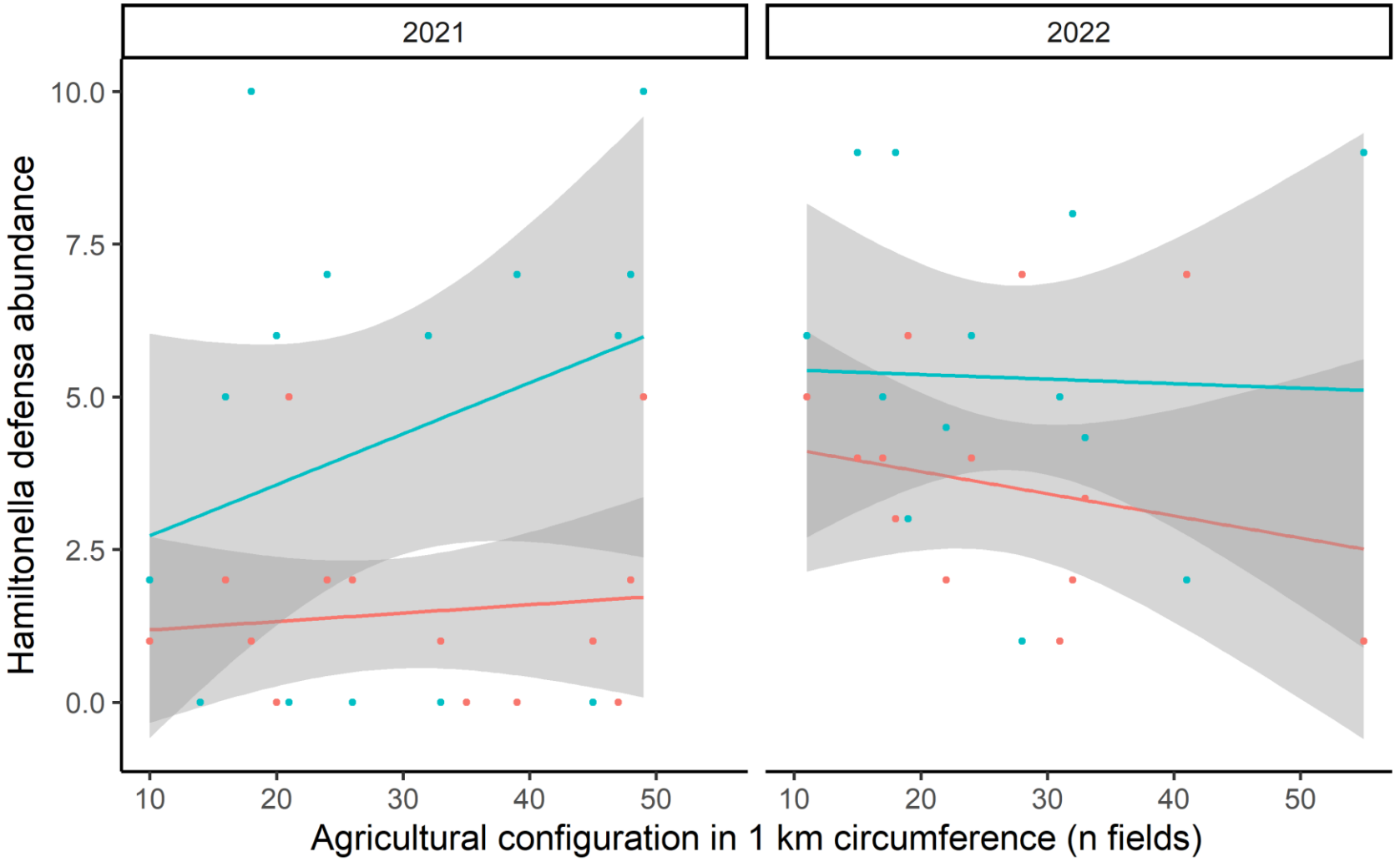
Landscape influence on aphids and endosymbionts



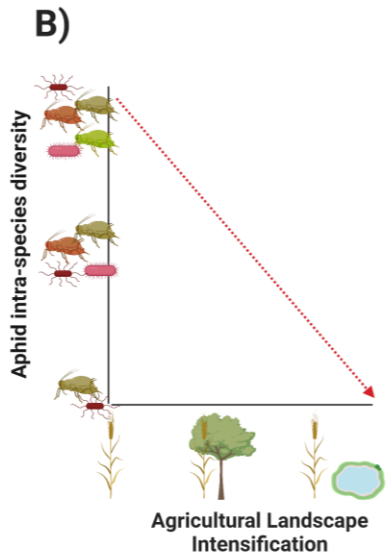




Landscape influence on aphids and endosymbionts



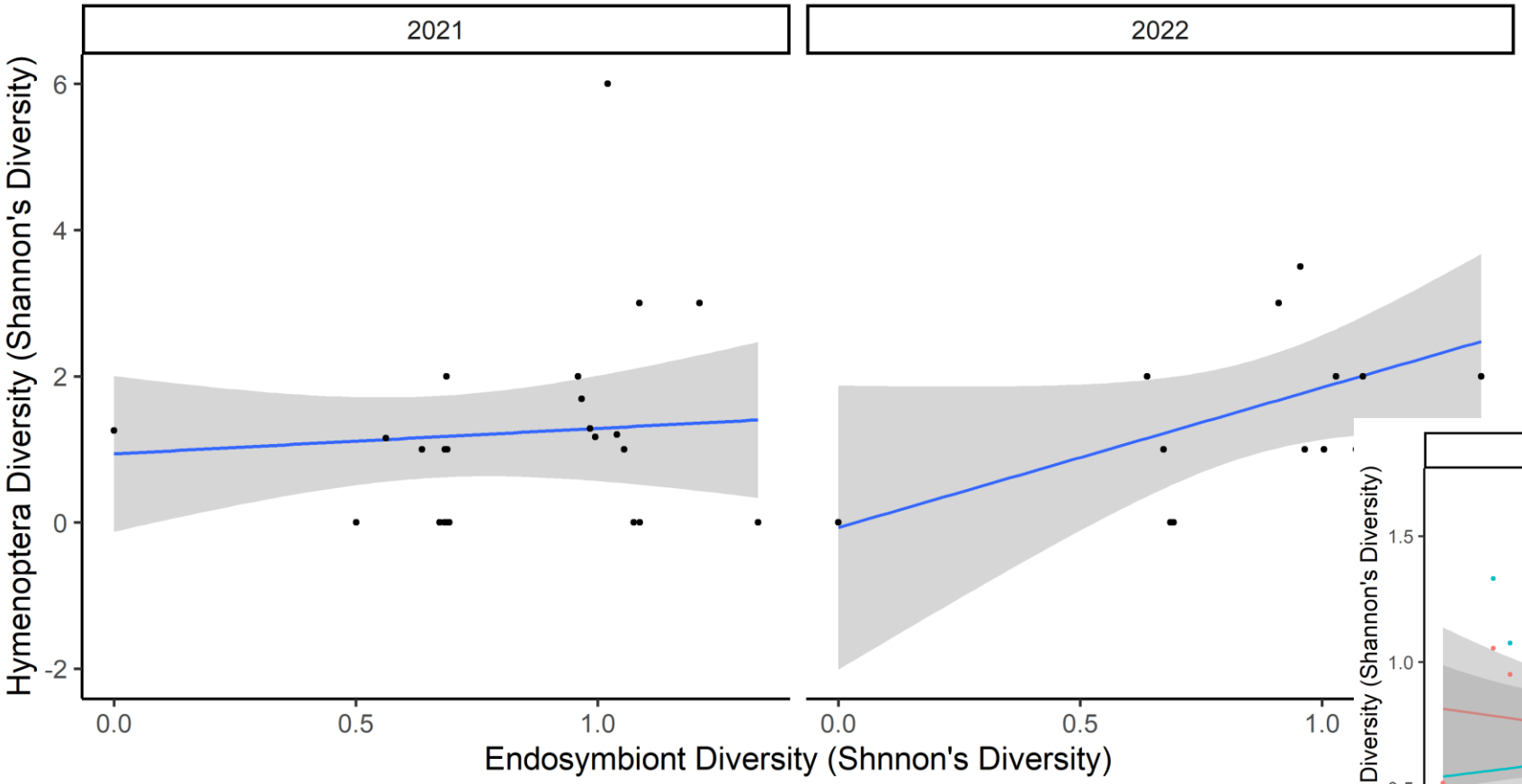
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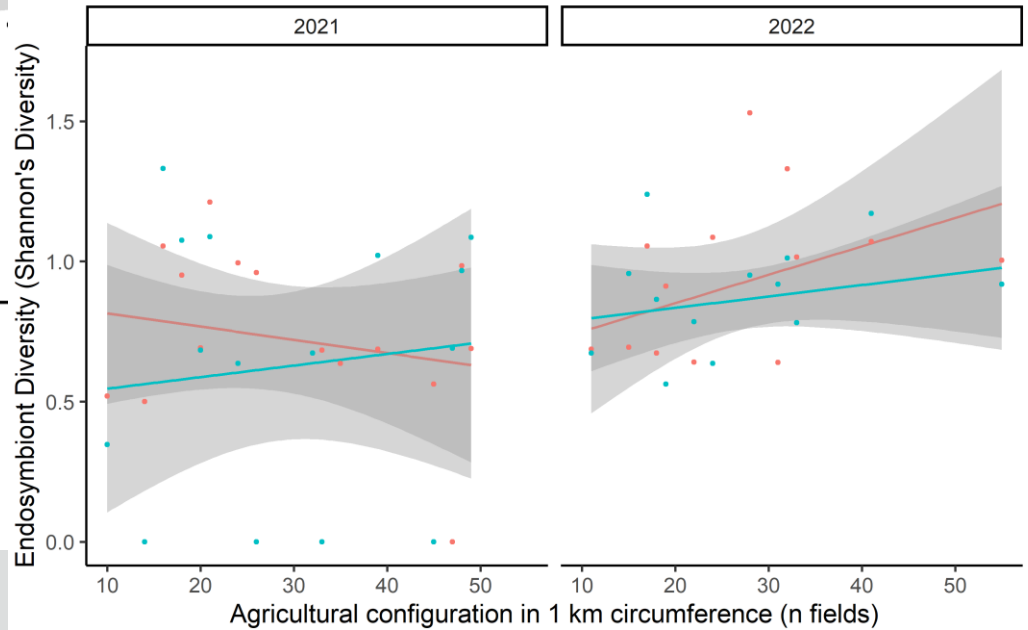
Alexander von Humboldt Stiftung/Foundation

Leibniz Universität Hannover

Landscape influence on aphids and endosymbionts

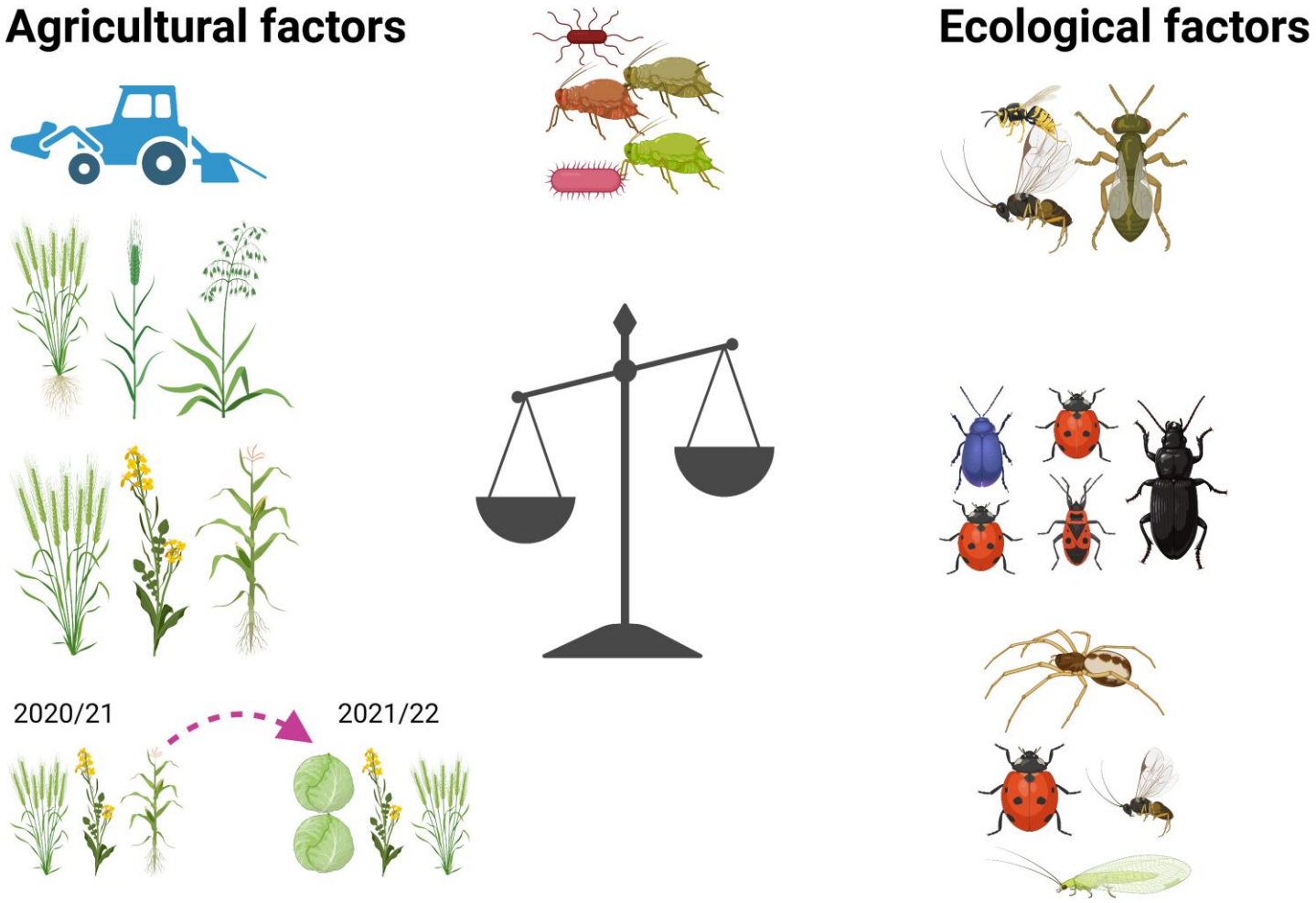






@danielleybourne

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Acknowledgements



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