Disease suppression in crop mixtures

Synergia

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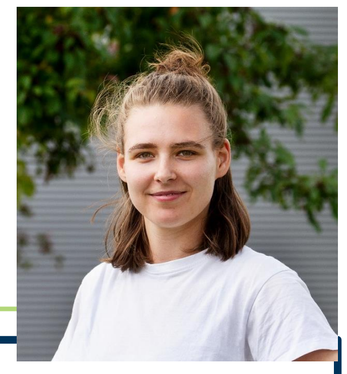


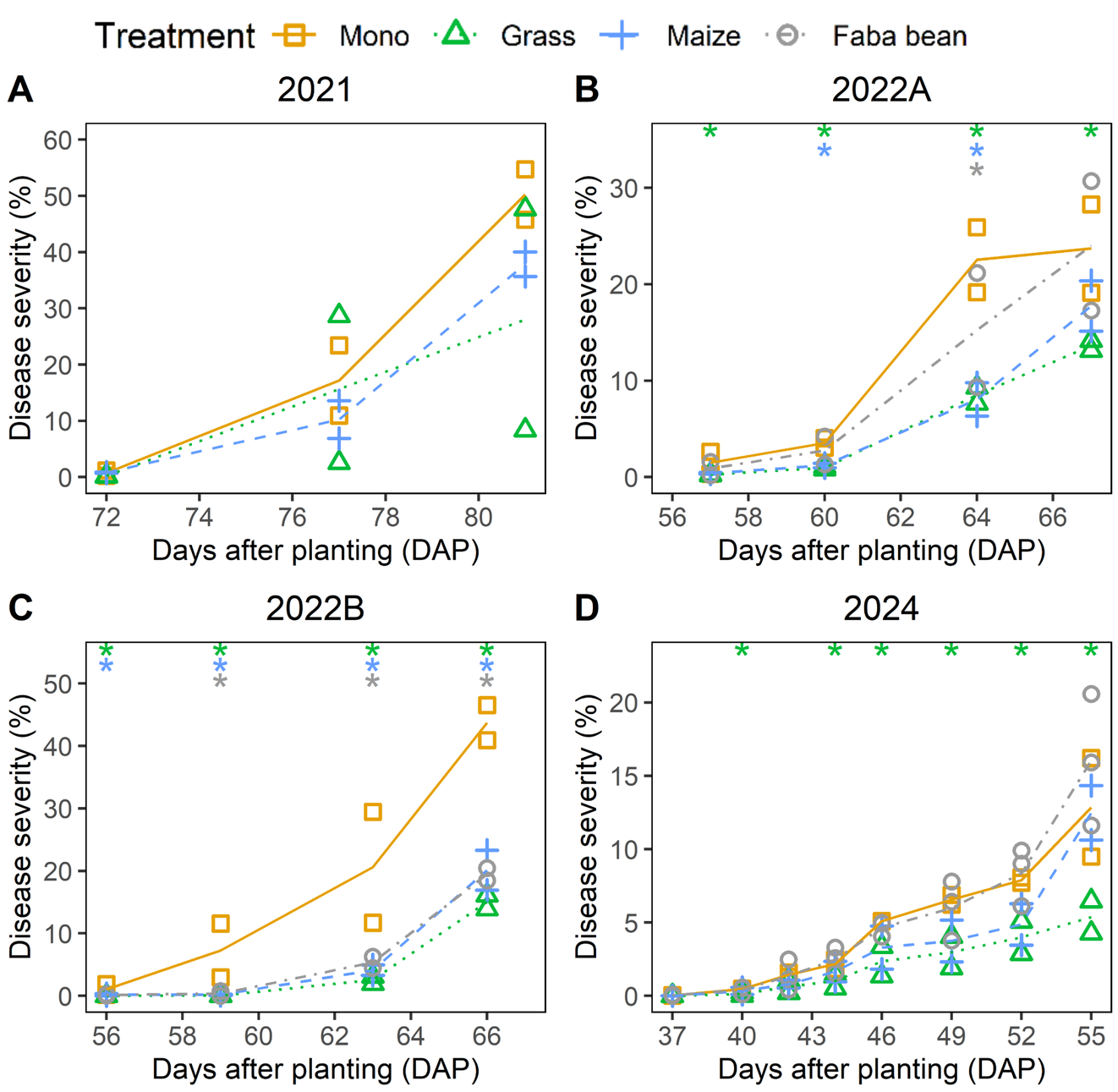
Introduction

Crop diversification through intercropping is often reported to reduce disease pressure and could thus be a sustainable component of integrated crop protection. Nevertheless, the question of how exactly intercropping can reduce diseases is not completely clear. In a strip-crop field experiment, potato was strip-cropped with either grass, maize or faba bean to investigate the effects of different companion crops on potato late blight.

Strip-crop potato/grass

Strip-crop potato/faba bean

Strip-crop potato/maize



Results and conclusion

Significant reductions in disease severity were observed in the strip-crops compared with potato monoculture across three years of experiments. The greatest reductions were observed in the potatoes strip-cropped with grass, indicating that the choice of the companion crop is important to maximise disease suppression. Strip cropping with faba bean was not consistent in suppressing the disease across years.

Further research

My other PhD chapters are about the importance of different drivers behind this observed reduction in disease severity. Additionally, with a meta-analysis, patterns of disease suppression in intercropping across pathosystems will be studied.

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