

Mixing it up

Mainstreaming crop mixtures in Scottish, UK and European farming

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Farmer trials testing crop mixture agronomy show benefits for yield, the environment, and climate resilience.

Introduction

Increasing crop diversity is recommended in the Scottish Government's 'Code of Practice on Sustainable and Regenerative Agriculture'

Growing crop mixtures increases crop diversity and yields, while reducing input costs and providing greater resources for biodiversity.

Legume-based crop mixtures have high potential to mitigate agricultural carbon emissions, but crop mixtures pose agronomic and post-harvesting challenges in farm systems tailored to monocultures. More evidence is needed of the economic and environmental outcomes of crop mixtures to support decision making.

Results

We have identified species/variety combinations, management conditions, and machinery adaptations that optimise the benefits from crop mixtures.

Collaboration with Scottish farmers allowed quantification of mixture performance and demonstrate feasibility.

Trial results were disseminated widely to farmers, including an online tool called Pick-a-Mix.



Figure 1 : Crop mixture trials



Figure 2 : (a) discussion between farmers and stakeholders (b) cleaning the seed

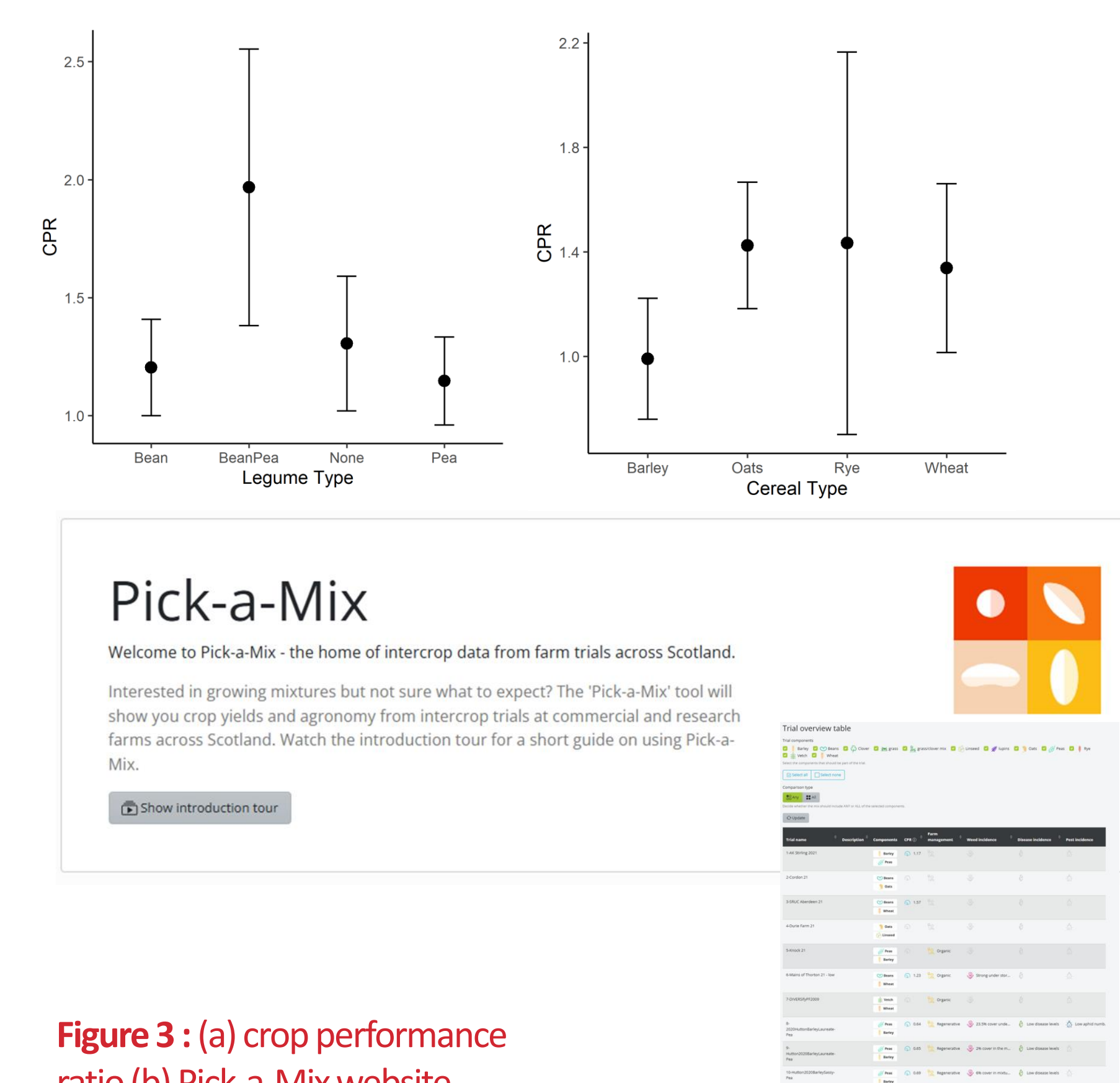


Figure 3 : (a) crop performance ratio (b) Pick-a-Mix website

Conclusions

- Over 50 farm trials were used to demonstrate feasibility showing the engagement of the industry.
- Crop mixtures gave yield gains of up to 20% compared with monocrops with limited effects on grain nutrient composition.
- Mixtures performance varied with crop composition (highest for bean-pea mixtures and mixtures with oats or wheat).
- The benefits of mixtures were higher under cooler conditions with lower rainfall.
- Crop mixtures received more visits from farmland birds than monocrops.

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