



# Intercropping -an effect on disease

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# Intercropping



## Intercropping

Intercropping is the cultivation of two or more crops together

Most intercrop studies are focused on the pulse as the secondary crop

## Land Equivalent Ratio

LER is a ratio that indicates the amount of land needed to grow both crops together compared to that for the monocrops

2018-2021 PGRO intercrops trials have shown consistently good LER results (>1.0)

# Why Intercropping?



- Land use efficiency
- Stability
- Weed suppression
- Lower disease levels
- Reduction in applications



# Prior work



## Disease in Intercrops

“Intercropping reduced disease in 73% of more than 200 studies” Boudreau 2013

Population, Barrier, and Microclimate

Intercropping with cereals has led to reduced bean rust in trials in Spain, Denmark, Egypt, Palestine & Ethiopia.



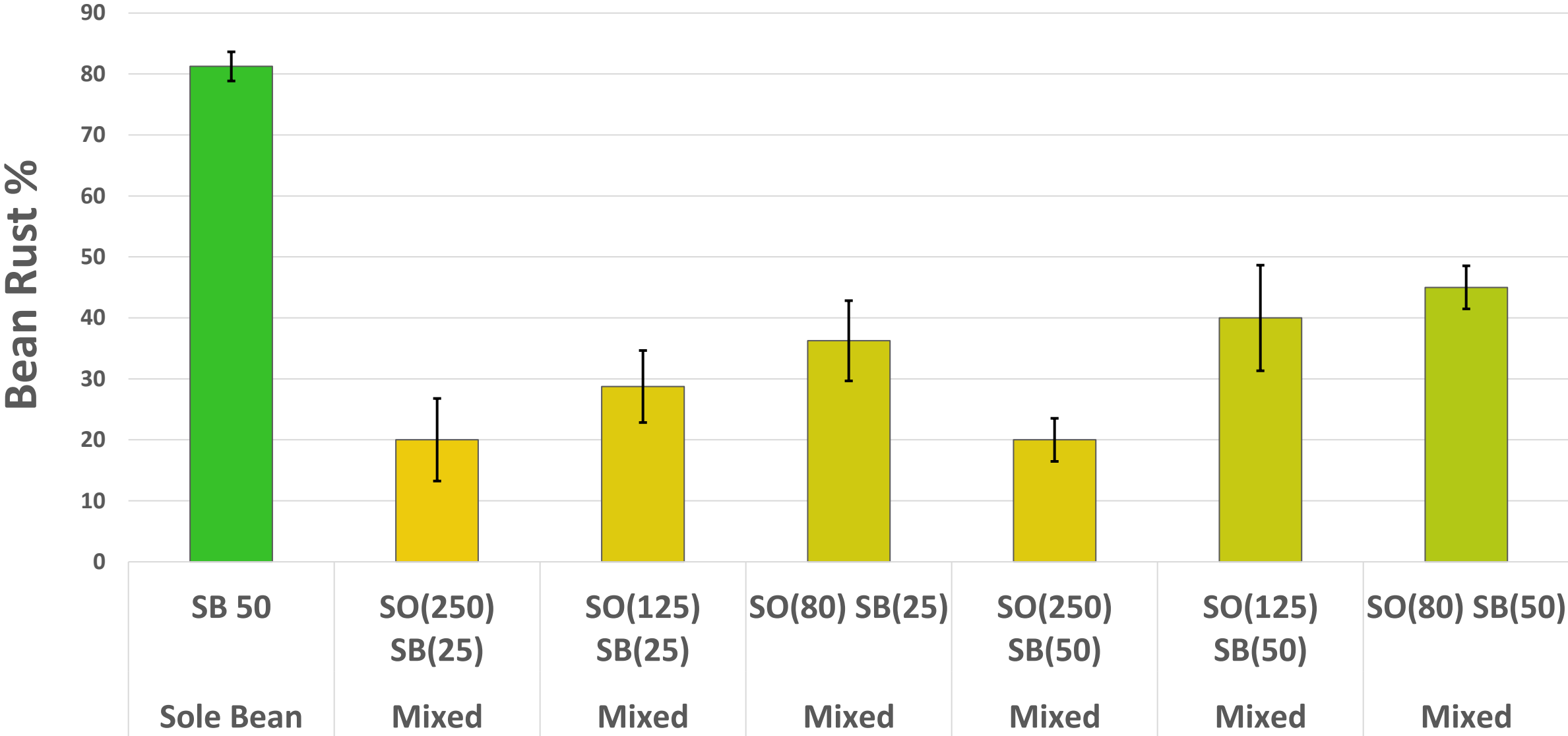


# Trial Plots





# Bean Rust 2020





# Strip Trials-Mixture





# Strip Trials-Alternating Rows



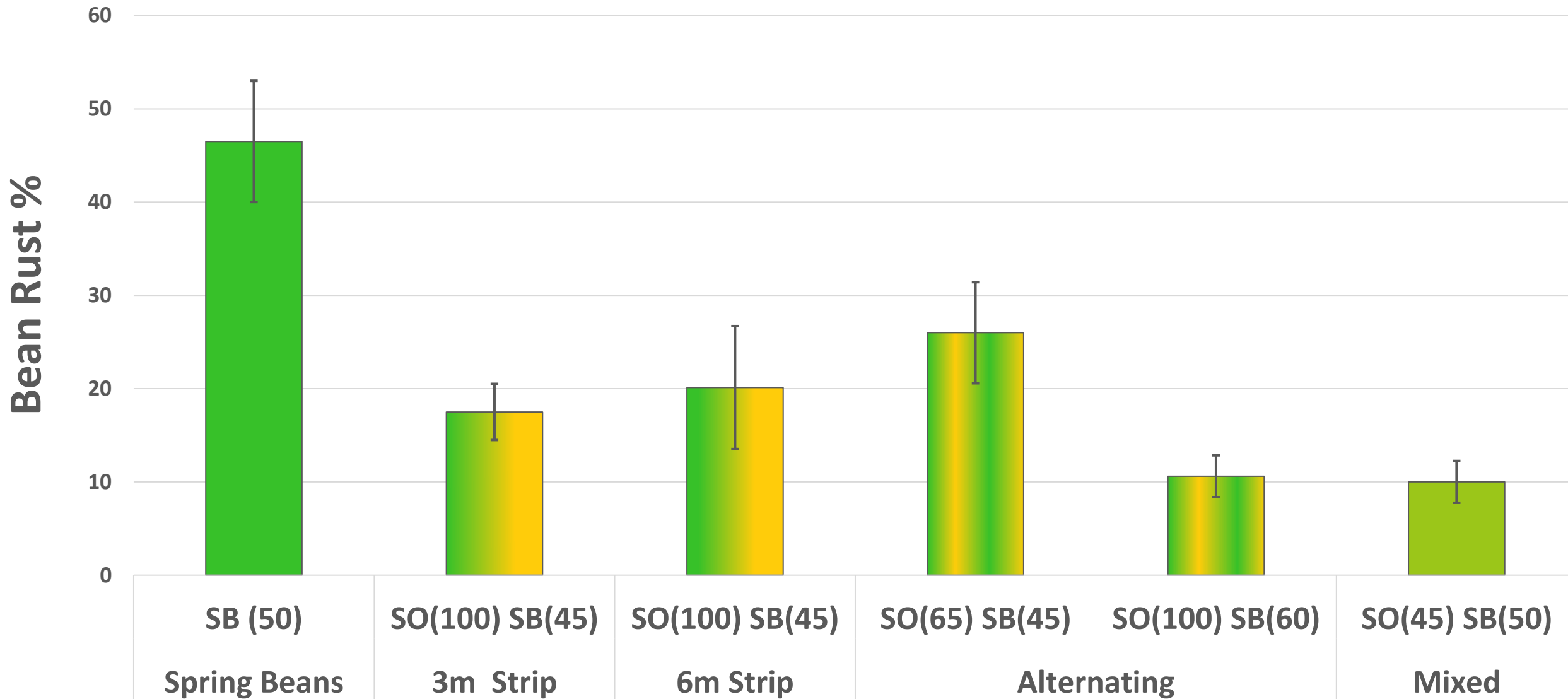


# Strip Trials-3m Strips



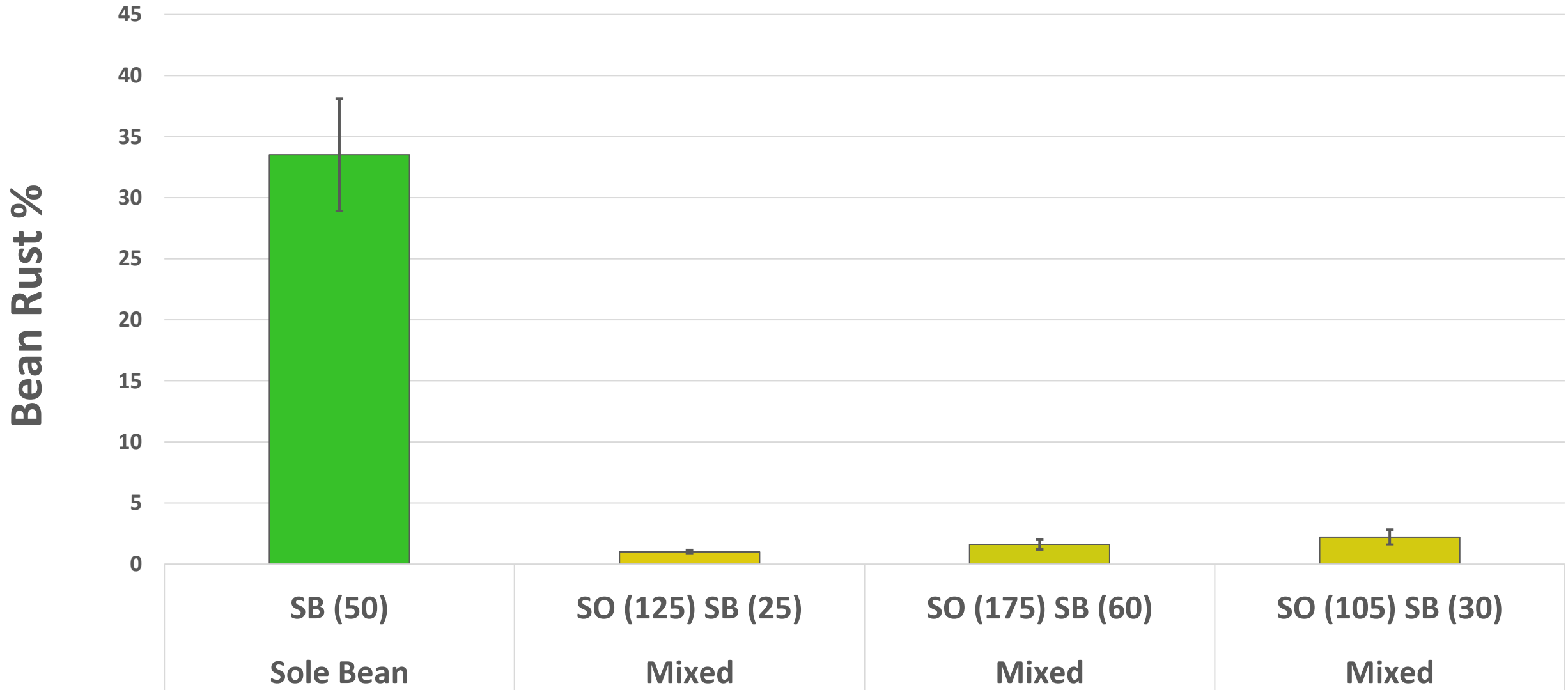


# 2020 Strip Trial A





# 2020 Strip Trial B





# Summary Table



YEAR	TRIAL	% RUST IN SOLE CROP BEANS	% RUST IN INTERCROPS	SIGNIFICANCE
2020	Trial Plots	81%	20-45%	<b>YES</b>
2020	Strip Plots A	47%	10-26%	<b>YES</b>
2020	Strip Plots B	34%	1-2%	<b>YES</b>

# Oat Disease



YEAR	TRIAL	% MILDEW IN SOLE CROP OATS	% MILDEW IN PEA INTERCROPS
2021	Trial Plots	33 %	16-26%
2021	Strip Plots	21 %	1-27%





# Summary



Intercropping work is continuing to show promising results

Disease reduction benefits have been found in UK growing conditions

These reductions can occur even when population is maintained

This benefit isn't guaranteed to occur

# Further Information



## For more information

Intercropping Resilience

Intercropping Disease data

Intercropping Yield and LER

Pulse Spring 2022

Pulse Spring 2021

Pulse Spring 2020



**Interested in trying pulse intercropping ?  
Please get in touch**





Thanks for listening

