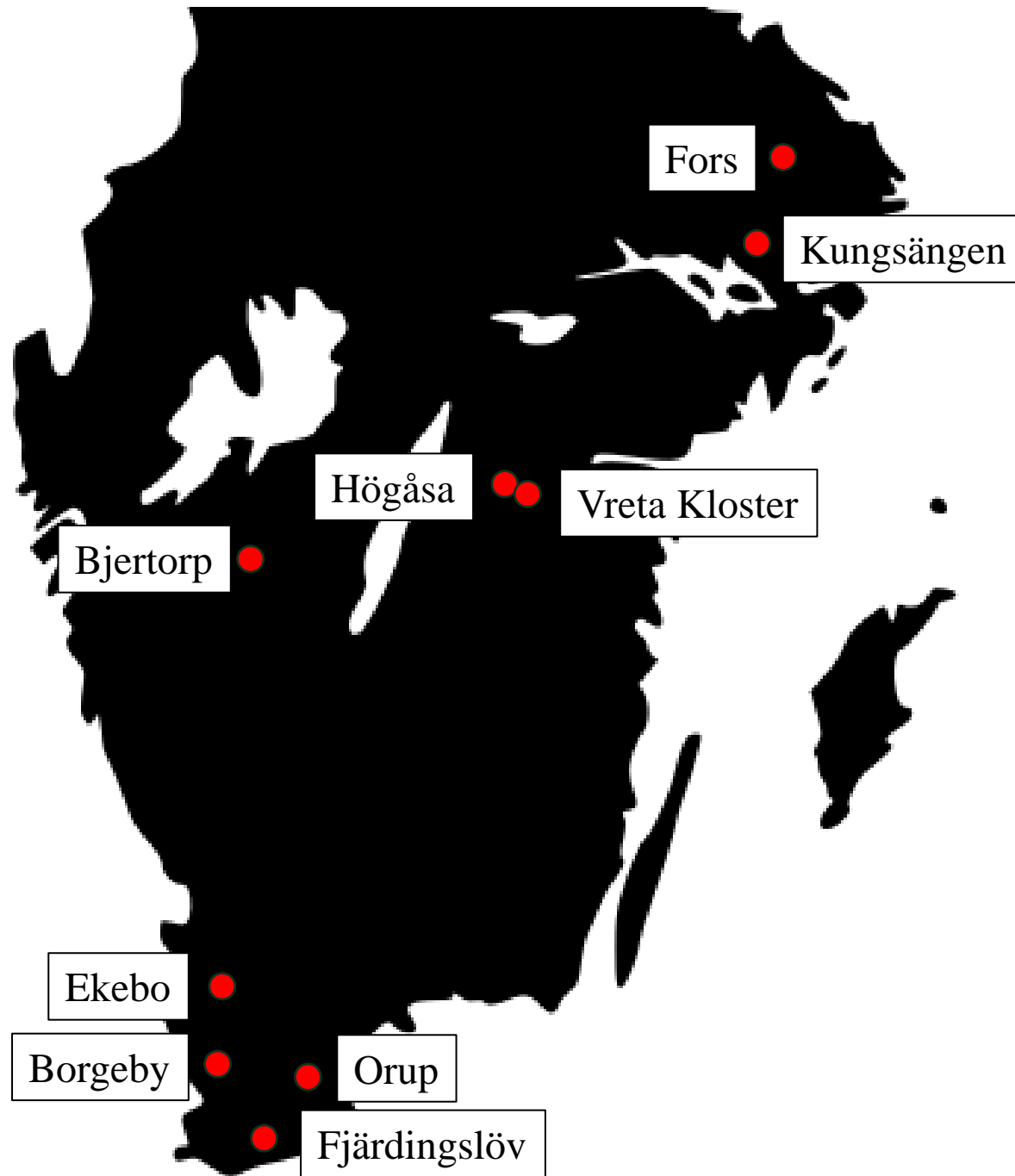


Grain yields and soil P changes from >50 years of soil fertility field experiments

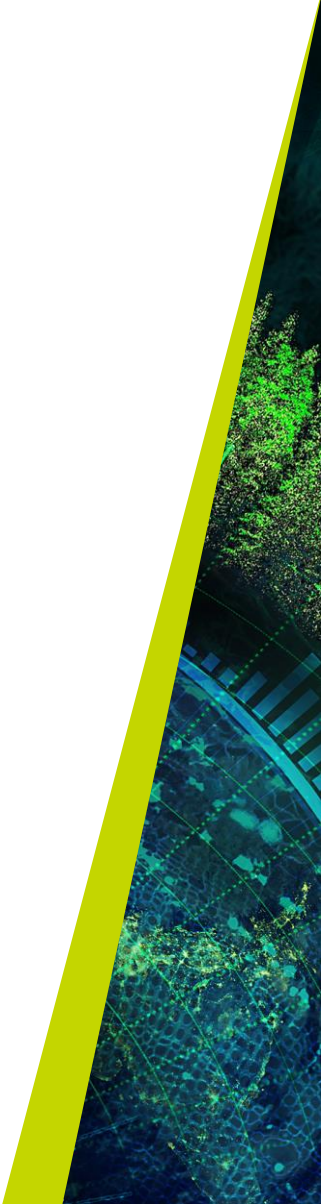
Sabina BRAUN
The Swedish University of Agricultural Sciences (SLU)
Department of Soil and Environment



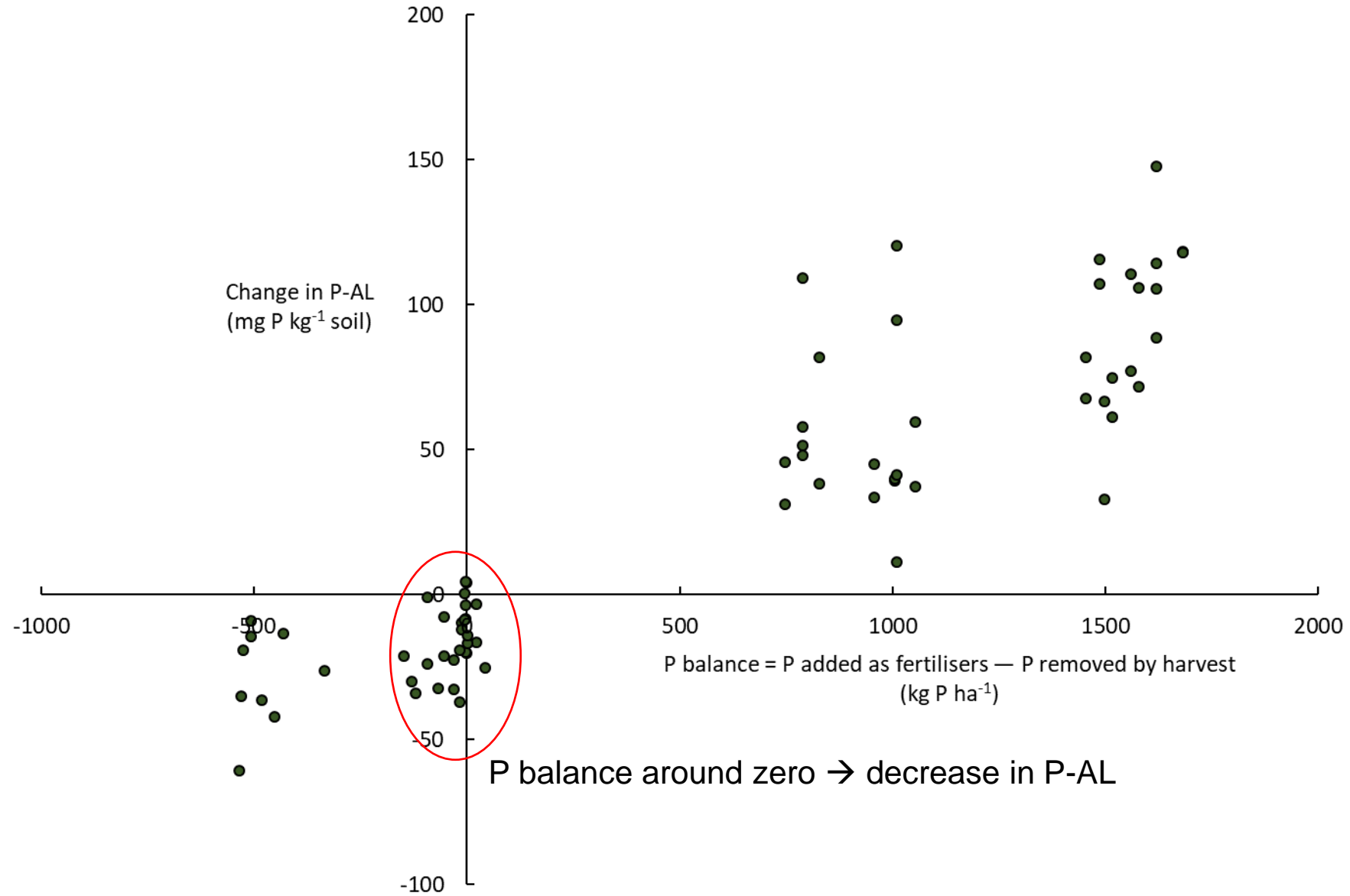
The Swedish long-term soil fertility experiments

- Experiments started between 1957-1966
- Soil P - Extraction with ammonium acetate lactate (P-AL)
- Two crop rotations
- Four N levels
- Four PK levels

		P	K
South	A	0	0
	B	Replacement	Replacement
	C	Replacement + 15	Replacement + 40
	D	Replacement + 30	Replacement + 80
Central	A	0	0
	B	Replacement	Replacement
	C	Replacement + 20	Replacement + 50
	D	Replacement + 30	Replacement + 80

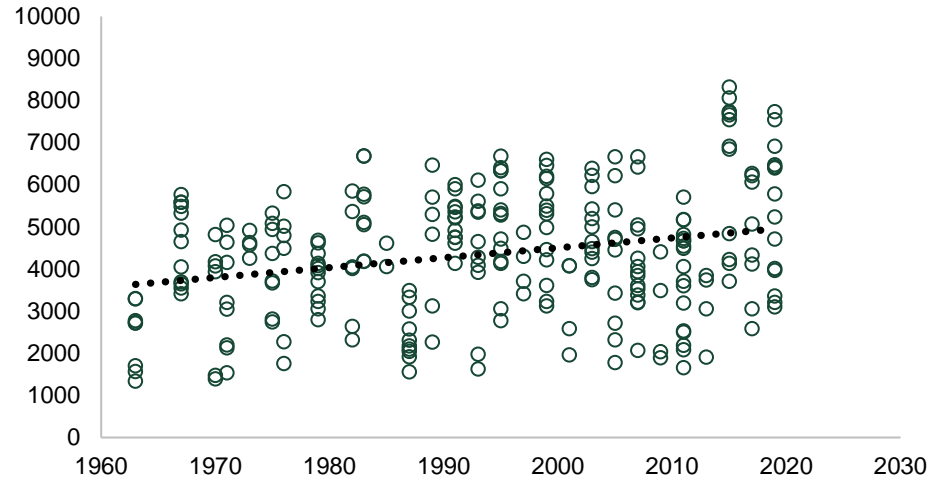


Change in soil P-AL content vs. P balance

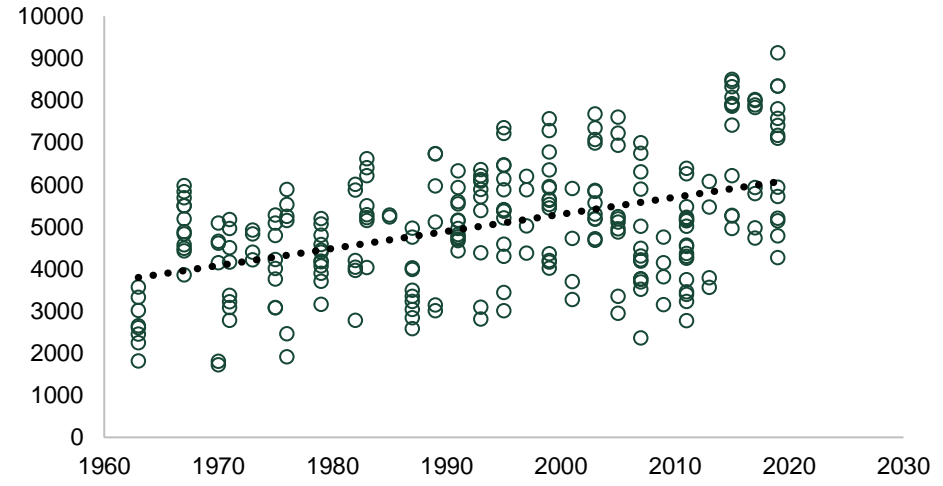


Grain yield (kg DM ha⁻¹)

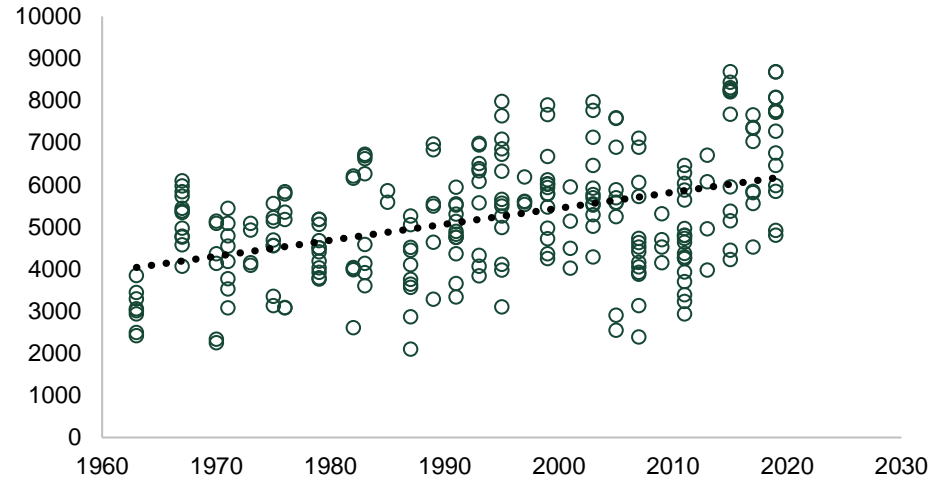
No PK



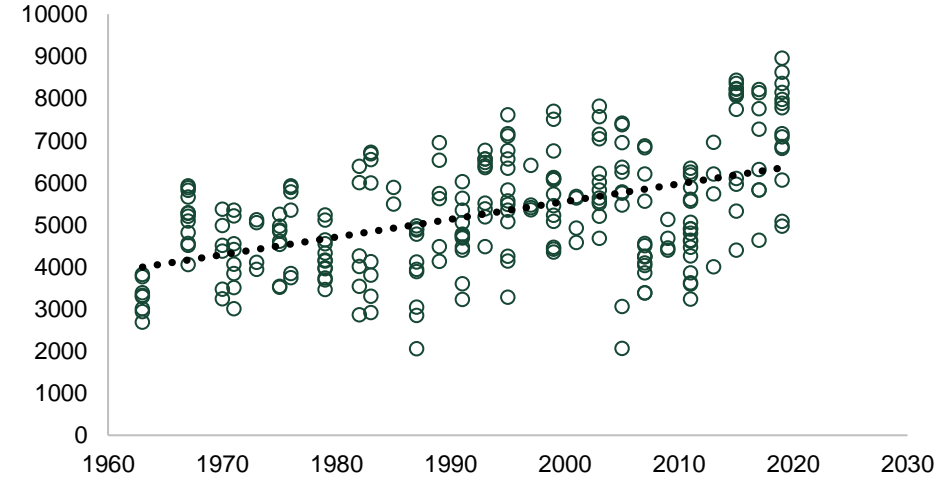
Replacement PK



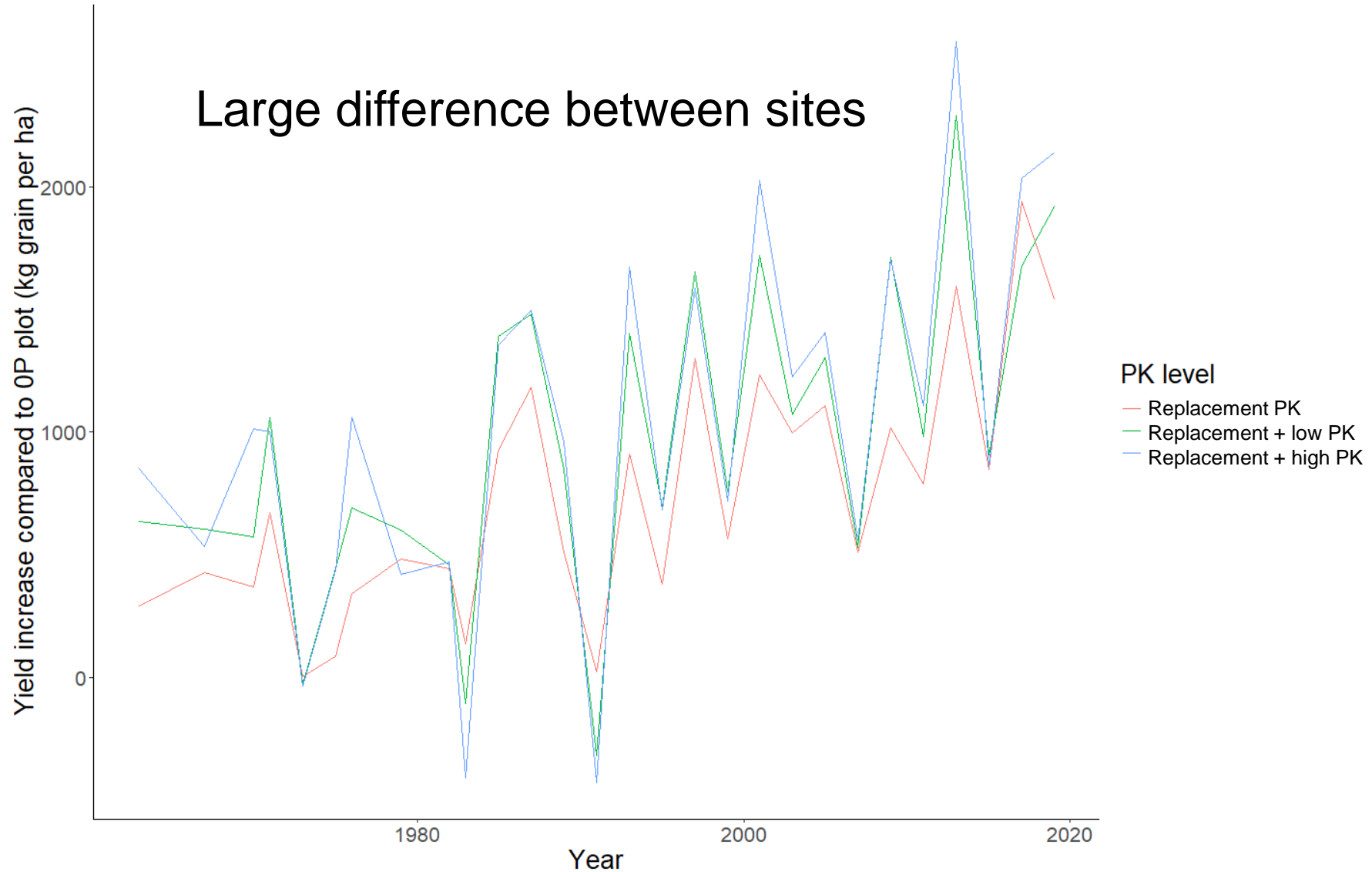
Replacement + low PK



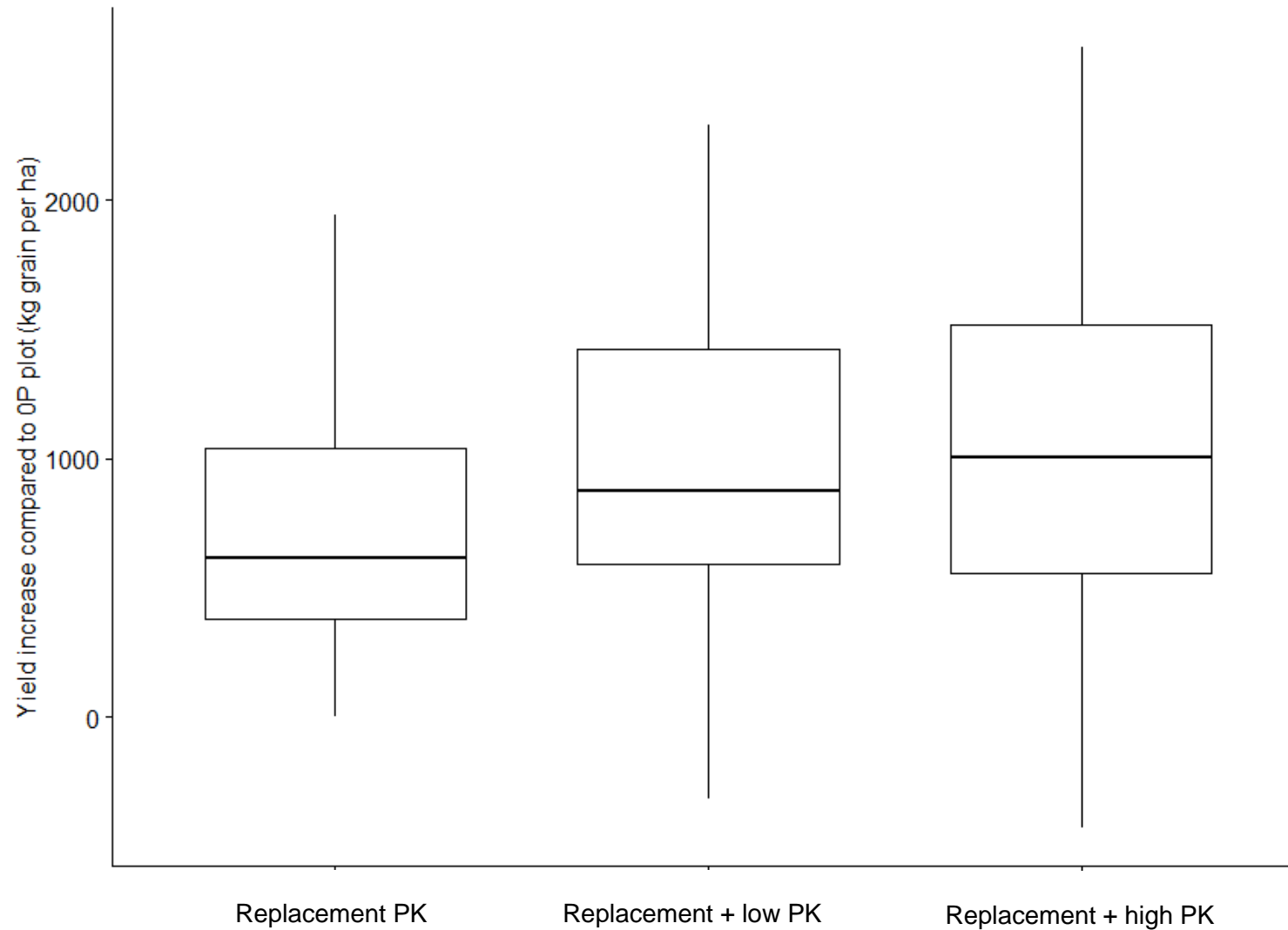
Replacement + high PK



Average increase in winter wheat grain yield compared to the yield in the 0 PK treatment



No statistically significant difference in wheat grain yield increase



Conclusions

- Soil P-AL declines when P is “in balance”
- Yields are slightly lower when P is “in balance”
 - Difference not statistically significant
 - Large variation between locations
- Even with no P added for >50 years, yields does not decline over time





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