

Crop nutrition and grain yield as affected by phosphorus fertilization and continued use of phosphogypsum in an Oxisol under no-till management

Eduardo Fávero Caires, Vanderson Modolon Duart, Giovanna Ludmila Alves Rodrigues and Angelo Rafael Bini

Supplemental material

Table S1. ANOVA *F*-test probabilities for the effects of phosphorus, phosphogypsum and their interaction effects on crop grain yields.

Source	Soybean yield (2018–2019)	Wheat yield (2019)	Soybean yield (2019–2020)	Black oat yield (2020)	Soybean yield (2020–2021)
			<i>F</i> probability		
Phosphorus (P)	0.038	0.001	<0.001	0.091	0.041
Phosphogypsum (PG)	0.006	0.004	0.006	0.012	0.206
P × PG	0.127	0.691	0.250	0.020	0.051
			CV (%)		
Main-plot	13.1	14.1	5.7	20.9	11.2
Subplot	7.5	13.3	8.9	14.3	8.0

CV, coefficient of variation.

Table S2. ANOVA *F*-test probabilities for the effects of phosphorus, phosphogypsum and their interaction effects on extractable P (Mehlich-1) and exchangeable Ca²⁺ concentrations at different soil depths.

Depth	Source	P (Mehlich-1)	Exchangeable Ca ²⁺
m		<i>F</i> probability	
0–0.10	Phosphorus (P)	<0.001	0.835
	Phosphogypsum (PG)	0.015	0.006
	P × PG	0.764	0.792
0.10–0.20	Phosphorus (P)	0.004	0.443
	Phosphogypsum (PG)	0.804	<0.001
	P × PG	0.529	0.857
0.20–0.40	Phosphorus (P)	0.366	0.652
	Phosphogypsum (PG)	0.093	<0.001
	P × PG	0.906	0.399
0.40–0.60	Phosphorus (P)	0.249	0.072
	Phosphogypsum (PG)	0.304	<0.001
	P × PG	0.315	0.422
		CV (%)	
0–0.10	Main-plot	32.9	10.7
	Subplot	34.5	12.7
0.10–0.20	Main-plot	48.8	13.1
	Subplot	50.7	13.3
0.20–0.40	Main-plot	75.7	17.9
	Subplot	72.0	18.1
0.40–0.60	Main-plot	80.9	8.8
	Subplot	91.8	16.5

CV, coefficient of variation.