Technical Bulletin

Evaluation of boron doses on soybeans in two Paraguayan soils

To aid in understanding the response of soybeans to applications of different doses of boron, Zabini (2021) conducted field experiments comparing doses of B in two different types of soils in different locations in Paraguay. The fertilizer *Granubor*® (15% B), which is a granular sodium tetraborate pentahydrate, was tested. The experiments were carried out in the locations of Santa Rosa del Monday (Alto Paraná) and Dr. J.E. Estigarribia (Caaguazu), Tables 1 and 2. The experimental design used randomized blocks with four repetitions. The experiments received the same amounts of NPK fertilizers, that is, 107 kg/ha of MAP in the furrows and 100 kg/ha of KCl in top dressing.

Table 1: Chemical and physical characteristics of the soil in the areas used for experiments before the implementation of the experiments. Santa Rosa del Monday (Alto Paraná) (crop 2020-2021)

pH Water	Clay	OM	Ca	Mg	K	Al	H+Al	t	T
	%	%	cmolc/dm³						
5.04	42.23	2.63	4.23	1.9	0.12	0.53	5.18	6.37	11.02
V	m	P	P rem	S	B	Cu	Fe	Mn	Zn
%		mg/dm³	mg/L	mg/dm³					
52.99	8.32	28.12	37.30	6.40	0.70	4.05	35.05	136.68	3.69

Table 2: Chemical and physical characteristics of the soil in the areas used for experiments before the implementation of the experiments. Dr. J.E. Estigarribia (Caaguazu) (crop 2020-2021).

pH Water	Clay	OM	Ca	Mg	K	Al	H+Al	t	T
	%	%	cmolc/dm³						
5.30	12.00	1.13	1.49	0.36	0.15	0.11	3.17	2.11	5.17
V	m	P	P rem	S	B	Cu	Fe	Mn	Zn
%		mg/dm³	mg/L	mg/dm³					
38.68	5.21	35.52	46.38	3.69	0.25	1.62	87.37	88.86	2.63

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GRANUBOR®

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Results

At the Dr. J.E. Estigarribia (Caaguazu) site, where the soil texture is sandy, there was an increase in productivity of 532 kg/ha (8.87 bags/ha) in the soybean crop compared to the control, with application of 14 kg/ha of *Granubor* (2 kg/ha of boron).

At the Dr. Santa Rosa del Monday (Alto Paraná) site, where the soil texture is clayey, there was an increase in productivity of 408 kg/ha (6.8 bags/ha) in the soybean crop compared to the control, with application of 14 kg/ha of *Granubor* (2 kg/ha of boron).

Figure 1: Response of soy to the application of *Granubor* in increasing doses (0; 1; 2 and 4 kg/ha). 2020/21 crop, Santa Rosa del Monday (2021).

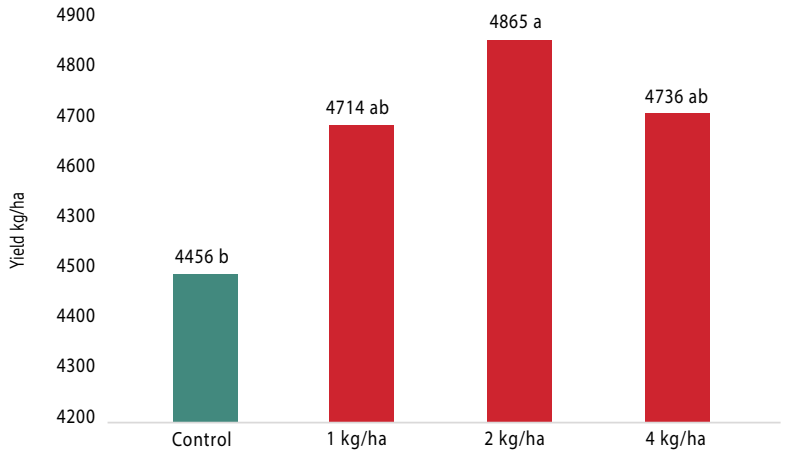
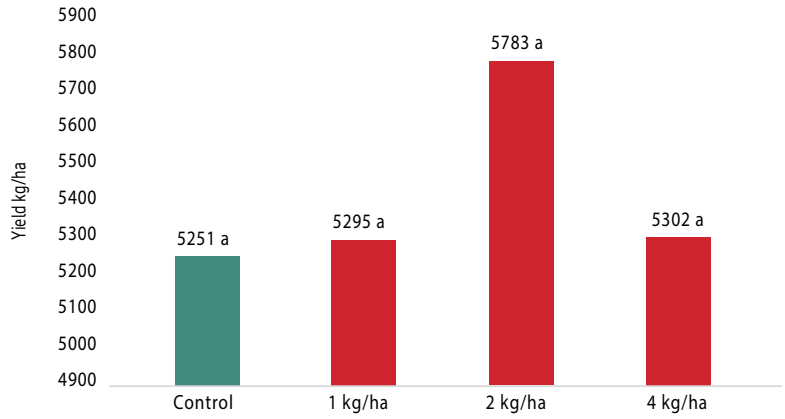


Figure 2: Response of soy to the application of *Granubor* in increasing doses (0, 1, 2, and 4 kg/ha). 2020/21 crop, Dr. J.E. Estigarribia (2021).



Reference

Andre Zabini, 2021. Agronómico Investivagación Agricola.