

**GBL – 62 High Yield Soybean Project**  
*Brazil – 2015 crop season*

A - Paraná State, city of Ponta Grossa – image ID (IPNI2016EFR01-1078)

**1. Trial information**

- ✓ Trial was set up in Nov 2014, and harvested in Apr 2015.
- ✓ Treatments under evaluation

**Table 1.** Treatments under evaluation.

T#	Crop	Fertilization (kg/ha)	BS (%)	Phophogypsum (ton/ha)	Foliar (g/ha)	Extra (g/ha)
1	Maize	180(N) + 96(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 3(Zn)	60	0	-	-
2	Maize	190(N) + 120(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 54 (S) + 3(Zn)	75	2.5	2.5(Cu) + 40(Mn) + 25(Zn)	100(Mo)
3	Maize	190(N) + 120(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 54 (S) + 3(Zn)	60	0	-	-
4	Maize	180(N) + 96(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 3(Zn)	75	0	-	-
5	Maize	180(N) + 96(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 3(Zn)	60	2.5	-	-
6	Maize	180(N) + 96(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 3(Zn)	60	0	2.5(Cu) + 40(Mn) + 25(Zn)	-
7	Maize	180(N) + 96(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 3(Zn)	60	0	-	100(Mo)
8	Soybean	60(P <sub>2</sub> O <sub>5</sub> ) + 60(K <sub>2</sub> O) + 12(S)	60	0	-	-
9	Soybean	18(N) + 90(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 20(S)	75	0.5	7(Cu) + 63(Mn) + 21(Zn)	100(Mo)
10	Soybean	18(N) + 90(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 20(S)	60	0	-	-
11	Soybean	60(P <sub>2</sub> O <sub>5</sub> ) + 60(K <sub>2</sub> O) + 12(S)	75	0	-	-
12	Soybean	60(P <sub>2</sub> O <sub>5</sub> ) + 60(K <sub>2</sub> O) + 12(S)	60	0.5	-	-
13	Soybean	60(P <sub>2</sub> O <sub>5</sub> ) + 60(K <sub>2</sub> O) + 12(S)	60	-	7(Cu) + 63(Mn) + 21(Zn)	-
14	Soybean	60(P <sub>2</sub> O <sub>5</sub> ) + 60(K <sub>2</sub> O) + 12(S)	60	-	-	100(Mo)

- ✓ Parameters evaluated: soil test (0-10 and 10-20 cm), dry matter yield, grain yield, macronutrients uptake and removal, and seed weight
- ✓ Statistics: SAS, Tukey at 5% probability

## 2. Results for soybean

**Table 2.** Soybean dry matter yield (DMY) and nutrient uptake in response to treatments.

T#	DMY	Nutrient uptake						
		N	P	K	Ca	Mg	S	
		kg/ha						
1	3,160 a	172 a	13.4 a	58 a	14,7 a	6,1 a	8,1 a	
2	3,287 a	180 a	15.0 a	63 a	15,8 a	6,3 a	9,3 a	
3	3,214 a	182 a	14.4 a	60 a	15,4 a	6,5 a	8,5 a	
4	3,112 a	174 a	13.5 a	52 a	14,9 a	6,1 a	8,1 a	
5	3,198 a	176 a	14.0 a	59 a	15,5 a	6,5 a	8,8 a	
6	3,156 a	176 a	13.7 a	55 a	15,3 a	6,1 a	8,1 a	
7	3,194 a	176 a	13.8 a	55 a	15,5 a	6,2 a	8,6 a	
<b>Mean</b>	<b>3,189</b>	<b>177</b>	<b>14.0</b>	<b>57</b>	<b>15.3</b>	<b>6.3</b>	<b>8.5</b>	
CV(%)	2.5	3.0	6.9	10.8	9.1	7.0	8.8	
P>F	0.29	0.31	0.42	0.48	0.97	0.83	0.47	
DMS	229	15.0	2.7	17.8	4.0	1.2	2.1	

**Table 3.** Soybean grain yield (GY) and nutrient removal in response to treatments.

T#	GY	Nutrient removal						
		N	P	K	Ca	Mg	S	
		kg/ha						
1	3,573 a	48.7 a	4.8 a	45.8 a	38.3 a	22.5 a	3.1 ab	
2	3,718 a	52.7 a	5.4 a	49.5 a	40.7 a	23.1 a	4.5 a	
3	3,634 a	50.4 a	5.2 a	50.4 a	38.4 a	22.9 a	4.1 ab	
4	3,522 a	47.5 a	4.9 a	45.2 a	38.2 a	22.3 a	3.4 ab	
5	3,615 a	46.8 a	4.6 a	46.0 a	38.1 a	21.9 a	3.8 ab	
6	3,566 a	45.8 a	4.1 a	44.0 a	36.1 a	23.0 a	2.9 b	
7	3,617 a	47.9 a	4.5 a	44.3 a	35.8 a	21.5 a	3.0 ab	
<b>Mean</b>	<b>3,606</b>	<b>48.5</b>	<b>4.8</b>	<b>46.4</b>	<b>37.9</b>	<b>22.5</b>	<b>3.5</b>	
CV(%)	2.4	10.9	18.0	12.2	6.0	8.9	15.8	
P>F	0.25	0.73	0.63	0.73	0.23	0.94	0.02	
DMS	249	15.1	2.5	16.2	6.5	5.7	1.6	

### 3. Results for maize

**Table 4.** Maize dry matter yield (DMY) and nutrient uptake in response to treatments.

T#	DMY	Nutrient uptake						
		N	P	K	Ca	Mg	S	
		kg/ha						
1	20,196 a	247 a	29 a	189 a	46 a	40 a	14.7 a	
2	20,918 a	279 a	37 a	214 a	53 a	48 a	18.7 a	
3	20,794 a	272 a	35 a	213 a	51 a	45 a	17.2 a	
4	19,989 a	252 a	29 a	192 a	45 a	37 a	13.7 a	
5	20,072 a	248 a	32 a	185 a	46 a	41 a	15.3 a	
6	20,153 a	260 a	33 a	196 a	43 a	37 a	14.8 a	
7	20,065 a	251 a	33 a	188 a	44 a	38 a	15.6 a	
<b>Mean</b>	<b>20,312</b>	<b>258</b>	<b>33</b>	<b>197</b>	<b>47</b>	<b>41</b>	<b>15.7</b>	
CV(%)	9.0	12.8	19.2	12.0	12.3	21.7	16.6	
P>F	0.99	0.83	0.70	0.63	0.33	0.69	0.35	
DMS	5,221	94.7	17.9	67.5	16.6	25.4	7.5	

**Table 5.** Maize grain yield (GY) and nutrient removal in response to treatments.

T#	GY	Nutrient removal						
		N	P	K	Ca	Mg	S	
		kg/ha						
1	10,152 a	113 a	19.3 b	35 a	4.2 a	9.1 a	7.7 a	
2	10,250 a	125 a	21.9 a	38 a	3.9 a	9.7 a	8.7 a	
3	10,226 a	123 a	21.7 a	37 a	4.0 a	9.3 a	8.0 a	
4	10,158 a	116 a	19.1 b	34 a	3.9 a	8.7 a	7.9 a	
5	10,199 a	117 a	19.0 b	34 a	3.9 a	8.6 a	7.8 a	
6	10,156 a	112 a	19.3 b	36 a	3.8 a	8.4 a	7.6 a	
7	10,165 a	117 a	18.7 b	34 a	3.8 a	8.4 a	7.8 a	
<b>Mean</b>	<b>10,187</b>	<b>117</b>	<b>19.9</b>	<b>35</b>	<b>3.9</b>	<b>8.9</b>	<b>7.9</b>	
CV(%)	4.2	5.1	3.8	7.3	7.7	6.7	5.1	
P>F	0.99	0.13	0.01	0.34	0.67	0.14	0.07	
DMS	1,222	17.2	2.2	7.4	0.9	1.7	1.2	

B – Mato Grosso State, city of Itiquira – image ID (IPNI2016EFR01-1079)

**1. Trial information**

- ✓ Trial set up in Nov 2015. Not harvested yet.
- ✓ Treatments under evaluation.

**Table 6.** Treatments under evaluation.

T#	Crop	Season	Fertilization (kg/ha)	Foliar (g/ha)	BS (%)
1	Soybean	Summer	60(P <sub>2</sub> O <sub>5</sub> ) + 72(K <sub>2</sub> O)	135(Mn)	50
	Maize 2 <sup>nd</sup> crop	Fall	70(N) + 52(P <sub>2</sub> O <sub>5</sub> ) + 40(K <sub>2</sub> O)	180(Zn)	50
2	Soybean	Summer	19(N) + 90(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 19 (S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	65
	Maize 2 <sup>nd</sup> crop	Fall	140(N) + 50(P <sub>2</sub> O <sub>5</sub> ) + 50(K <sub>2</sub> O) + 22(S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	65
3	Soybean	Summer	19(N) + 90(P <sub>2</sub> O <sub>5</sub> ) + 90(K <sub>2</sub> O) + 19 (S)	135(Mn)	50
	Maize 2 <sup>nd</sup> crop	Fall	140(N) + 50(P <sub>2</sub> O <sub>5</sub> ) + 50(K <sub>2</sub> O) + 22(S)	180(Zn)	50
4	Soybean	Summer	60(P <sub>2</sub> O <sub>5</sub> ) + 72(K <sub>2</sub> O)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	50
	Maize 2 <sup>nd</sup> crop	Fall	140(N) + 50(P <sub>2</sub> O <sub>5</sub> ) + 50(K <sub>2</sub> O) + 22(S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	50
5	Soybean	Summer	60(P <sub>2</sub> O <sub>5</sub> ) + 72(K <sub>2</sub> O)	135(Mn)	65
	Maize 2 <sup>nd</sup> crop	Fall	140(N) + 50(P <sub>2</sub> O <sub>5</sub> ) + 50(K <sub>2</sub> O) + 22(S)	180(Zn)	65

- ✓ Parameters evaluated: soil test (0-10 and 10-20 cm), dry matter yield, grain yield, macronutrients uptake and removal, and seed weight
- ✓ Statistics: SAS, Tukey at 5% probability