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_2O_5) + 90(K_2O) + 3(Zn)	60	0	-	-
2	Maize	190(N) + 120(P_2O_5) + 90(K_2O) + 54 (S) + 3(Zn)	75	2.5	2.5(Cu) + 40(Mn) + 25(Zn)	100(Mo)
3	Maize	190(N) + 120(P_2O_5) + 90(K_2O) + 54 (S) + 3(Zn)	60	0	-	-
4	Maize	180(N) + 96(P_2O_5) + 90(K_2O) + 3(Zn)	75	0	-	-
5	Maize	180(N) + 96(P_2O_5) + 90(K_2O) + 3(Zn)	60	2.5	-	-
6	Maize	180(N) + 96(P_2O_5) + 90(K_2O) + 3(Zn)	60	0	2.5(Cu) + 40(Mn) + 25(Zn)	-
7	Maize	180(N) + 96(P_2O_5) + 90(K_2O) + 3(Zn)	60	0	-	100(Mo)
8	Soybean	60(P_2O_5) + 60(K_2O) + 12(S)	60	0	-	-
9	Soybean	18(N) + 90(P_2O_5) + 90(K_2O) + 20(S)	75	0.5	7(Cu) + 63(Mn) + 21(Zn)	100(Mo)
10	Soybean	18(N) + 90(P_2O_5) + 90(K_2O) + 20(S)	60	0	-	-
11	Soybean	60(P_2O_5) + 60(K_2O) + 12(S)	75	0	-	-
12	Soybean	60(P_2O_5) + 60(K_2O) + 12(S)	60	0.5	-	-
13	Soybean	60(P_2O_5) + 60(K_2O) + 12(S)	60	-	7(Cu) + 63(Mn) + 21(Zn)	-
14	Soybean	60(P_2O_5) + 60(K_2O) + 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	
Mean	**3,189**		**177**		**14.0**		**57**		**15.3**		**6.3**		**8.5**		
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	
Mean	3,606		48.5		4.8		46.4		37.9		22.5		3.5		
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	
Mean	**20,312**		**258**		**33**		**197**		**47**		**41**		**15.7**		
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	
Mean	10,187		117		19.9		35		3.9		8.9		7.9		
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_2O_5) + 72(K_2O)	135(Mn)	50
	Maize 2nd crop	Fall	70(N) + 52(P_2O_5) + 40(K_2O)	180(Zn)	50
2	Soybean	Summer	19(N) + 90(P_2O_5) + 90(K_2O) + 19 (S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	65
	Maize 2nd crop	Fall	140(N) + 50(P_2O_5) + 50(K_2O) + 22(S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	65
3	Soybean	Summer	19(N) + 90(P_2O_5) + 90(K_2O) + 19 (S)	135(Mn)	50
	Maize 2nd crop	Fall	140(N) + 50(P_2O_5) + 50(K_2O) + 22(S)	180(Zn)	50
4	Soybean	Summer	60(P_2O_5) + 72(K_2O)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	50
	Maize 2nd crop	Fall	140(N) + 50(P_2O_5) + 50(K_2O) + 22(S)	7(B) + 7(Cu), 78(Mn) + 13(Mg) + 4(Mo) + 21(S) + 40(Zn)	50
5	Soybean	Summer	60(P_2O_5) + 72(K_2O)	135(Mn)	65
	Maize 2nd crop	Fall	140(N) + 50(P_2O_5) + 50(K_2O) + 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