

Agronomic evaluation of corn hybrids in 2012/2013 harvest in Guarapuava - PR

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Introduction In Brazil, the most used crop for making silage is corn, because it is easy for cultivation, high dry matter yield, high nutritional value and have great acceptance by ruminants (Oliveira et al., 2007). There are a large number of corn hybrid varieties for silage production in the market, so it is important to evaluate the agronomic performance of the regions indicated (Lupatini et al., 2004). The aim of this study was to compare the plant height, corn-cob height, number of leaves per plant, the production of green biomass, the production of dry biomass and grain yield from the different hybrids evaluated for silage.

Material and methods The experiment was conducted in the premises of the Animal Production Center (NUPRAN), at Agricultural and Environmental Sciences Department of the Midwest State University (UNICENTRO) in Guarapuava, PR, evaluating the following variables: height of the first corn-cob insertion, number of senescent leaves, green biomass production, dry biomass and grain yield from the following corn hybrids: SG YG 6030, PRO LG 6036, LG 6038 PRO, BRAS 3010, PL 6880 and PL 1335. Final production of green biomass, dry matter and grain as plant height, corn-cob height of insert and senescent leaf number was determined on the silage production time (dough stage R4). The experiment was conducted according to a completely randomized design with four replications, and six treatments (SG 6030 YG, LG PRO 6036, PRO 6038 LG, BRAS 3010, PL 6880 and PL 1335). The collected data for each parameter were submitted to analysis of variance with average comparison at the significance level of 5% by Tukey test, through SAS (1993).

Results and discussion Table 1 shows the mean values of plant height, height of corn-cob insert, number of senescent leaves, production of green biomass, dry biomass and grain yield of corn hybrids evaluated during 2012/2013 harvest in Guarapuava – PR. From the collected data it is evident that there was no statistical difference in plant height, corn-cob height of insert and number of leaves per plant on the different hybrids. But when comparing the variables: biomass production, dry biomass and grain yield an statistical difference is evidenced, and the hybrids LG PRO 6038, PRO 6036 LG and SG 6030 YG reached the highest averages, which were superior from the other tested materials.

Gralak (2011) had an plant height average of 2.4 meters and corn-cob height average of 1.43 meters, the dry matter yield average of 18383 kg ha⁻¹, green biomass average production of 68680 kg.ha⁻¹ and grain yield average of 10104 kg ha⁻¹ this values were lower than those found in this work, emphasizing that the experiments region was the same in both works. Neumann (2006), in an experiment with hybrid P-30S40, located in Guarapuava PR in 2004/2005 crop year also showed values lower than those obtained in this study.

Table 1 Mean values of plant height, first corn-cob height, number of senescent leaves, production of green biomass, dry biomass and grain yield of evaluated corn hybrids (Crop 2012/2013, Guarapuava-PR).

Hybrids	Plant height (m)	Corn-cob height (m)	Number of senescent leaves	Green biomass production (kg ha^{-1})	Dry biomass production (kg ha^{-1})	Grain production R6 (kg ha^{-1})
LG 6038 PRO	2.57 a	1.46 a	3.00 a	87588 a	29457 a	12360 a
LG 6036 PRO	2.54 a	1.49 a	3.25 a	85888 a	28089 a	11426 a
SG 6030 YG	2.59 a	1.57 a	2.75 a	79663 a	25609 a	11405 a
BRAS 3010	2.40 a	1.38 a	3.17 a	68748 b	21721 b	9117 b
PL 6880	2.46 a	1.48 a	2.17 a	70688 b	23456 b	8338 b
PL 1335	2.46 a	1.39 a	3.17 a	65780 b	22171 b	9498 b
Average	2.51	1.46	2.93	76392	25084	10357
P>F	0.1309	0.3840	0.2179	0.0075	0.0170	0.0501
CV, %	4.13	9.23	21.94	10.98	12.75	18.01

Means in the same section followed by different letters for each variable differ by Tukey test at 5%.

CV: Coefficient of variation.

Conclusion The highest values of plant height, corn-cob height and number of leaves per plant were statistically similar among the six hybrids, but the production of dry matter, green biomass and grain were higher in three specific hybrids: PRO LG6038, LG PRO 6036 and SG 6030 YG.

References

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