Production of green biomass and dry biomass of silage made from wheat (cv. BRS Umbu) subjected to a regime of cuts in Guarapuava - PR

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Introduction The use of silages of wheat plants is not traditional in Brazil, however, occur in regions where adverse weather during the winter season, the cultivated off-seasons corn becomes unavailable, being lost if they occur early frosts. Keeping this in view, the use of winter cereals is being preferred by farmers searching for making silage in the winter, as the wheat in many situations has good nutritional values (Bumbieris Jr. et al., 2011) . The use of wheat for dual purpose, both for grain production and yield of silage or grazing animals is presented as an alternative for avoiding large expanses of territorial idle. The existing genotypes have long vegetative period, with good capacity to forage and short reproductive phase, keeping productive stability in terms of yield and quality of grain (Wendt et al., 2006). To obtain whole plant silage winter cereal quality is recommended that the plants are harvested at mature grain in soft, allowing to obtain higher biomass volume, ensuring a good preservation of desirable nutrients route fermentation (Fontaneli and Fontaneli, 2009). In this work, we report results of different biomass yield green and dry matter of silage made from wheat cultivar BRS dual purpose umbu (EMBRAPA), in a regime of cuts in the region of Guarapuava - PR.

Material and methods The experiment was conducted at the Center for Animal Production (NUPRAN), Department of Agricultural and Environmental Sciences of the State University Midwest (UNICENTRO), in Guarapuava - PR, located in the subtropical zone of Paraná, in the geographical coordinates 25º23'02" south latitude and 51°29'43" west longitude. The planting was realized on May 13, 2011. The fertilizer used was 400 kg ha^{-1} of 04-20-20 chemical fertilizer formula. Besides the basic fertilization, were realized 2 split applications of urea, totaling 280 kg ha^{-1} N. The experimental design was a randomized block design with three treatments (without cut – just one harvest for silage; with one cut – one forage harvest and one silage harvest; with two cuts - two forage harvest and one for silage) and five replications, totaling 15 plots, each plot contained an area of 15 m², with planting carried out on spacing 17 cm between rows, sowing rate of 220 seeds / m² and planting depth of 4 cm. Cultural practices were carried out during the experiment, such as herbicide-based *metyl metsulfuron* (Ally® commercial product: 6.6 g ha^{-1}), based insecticide of *Thiamethoxam + lambdacyhalothrin* (commercial product ENGEO pleno®: 150 ml . ha^{-1}) and the base fungicide *Epoxiconazole + pyraclostrobin* (Opera® commercial product: 1 l.ha^{-1}). Were harvested when the plants were 30 cm high, lowering it to 8 cm of soil. Each plot had an area of 8 m² evaluated, discarding the borders. With the collected material was estimated production of green biomass per hectare and production of dry biomass, by drying in an oven

at 55 °C until the samples reach a constant weight. Data were subjected to analysis of variance and means were compared by Tukey test at 5% probability.

Results and discussion Table 1 described the yield of green biomass and dry biomass production of silage made from wheat plants cv. BRS umbu that were submitted to three different management systems (without, with one cut and two cuts). It is evident that the management where we got higher productivity ($P < 0.05$) the system was that there was no cut forage, yielding higher values of green biomass and dry biomass note also that the largest number of cut occurs decrease of the yield both green biomass as dry biomass similar results were found by (Meinerz et al., 2011), where wheat BRS umbu regime without cuts totaled 10,577 kg ha^{-1} of dry biomass. On the other hand, Fontaneli et al. (2009) obtained lower values, equivalent to 6,017 kg ha^{-1} of dry biomass for wheat BRS umbu when silages were made from plants that have been cut.

Table 1 Production of green biomass and dry biomass at the time of silage production wheat BRS umbu under different management systems

	Biomass yield, $kg.ha^{-1}$	
Treatment	Green	Dry
Without cut	21913 a	10927 a
With one cut	14625 b	7989 b
With two cuts	5294 c	3364 c
Average	13944	7476
CV %	9.24	11.94
Probability	< 0.0001	< 0.0001

Conclusion With this study it can be concluded that the cultivar studied has great productive potential regarding both the production of green biomass as dry biomass, observing differences in production occurs when the management of cuts aimed at the utilization of forage.

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