

Composition of wheat plants cv. BRS Umbu subjected with two conservation systems and two levels of nitrogen fertilization

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Introduction The yield of silage winter cereals should be stimulated by maximizing the use of the land during winter to forage production as well as to reduce of the risk of lack of forages by bad weather, and minimize the competition areas by planting corn for silage in the summer, allowing the use of grain for marketing ensuring increased income (FONTANELI and FONTANELI, 2009). The objective of this experiment is demonstrate the results of the botanic composition of wheat plants cv. BRS Umbu dual purpose, subjected with two conservation systems and two levels of nitrogen fertilization.

Materials and Methods: The project was conducted on the Center of Animal Production (NUPRAN) of the Department of Agricultural and Environmental Sciences of the Midwest University - UNICENTRO in Guarapuava - PR, located in the subtropical zone of Paraná. The sowing of wheat was held on May 13, 2011 with spacing of 17 cm sowing depth of 04 cm and seeding rate of 220 seeds / m². The planting fertilization was 400 kg ha⁻¹ of 08-30-20 formulation. The covering fertilization was done with urea (45-0-0). In the treatments with 120 kg ha⁻¹ nitrogen, coverage was performed in a single application 30 days after emergence. In the treatment with 180 kg ha⁻¹ nitrogen coverage was performed 30 and 60 days after emergence at rates of 120 kg ha⁻¹ and 60 kg ha⁻¹ respectively. The total experimental area was 312 m², and each plot had 9.75 m². The experiment design was a randomized block with 8 treatments and 4 repetitions. The cuts for silage and hay were carried out in stages of dormancy, flowering and mealy grain. After the cuts, the material was separated in stem, dried leaves, green leaves and sheath the material was dried in a forced air oven at a temperature of 55 ° C and evaluated after weight stabilization of the dry biomass. The results were submitted to analysis of variance and the averages were compared by Tukey test at 5% probability.

Results and Discussion: Table 1 describes the botanic composition of wheat plants cv. BRS Umbu subjected to two systems of conservation, silage and hay, under two levels of nitrogen fertilization. There was no significant differences ($p>0.05$) for the botanic components of the plant, except for the sheath. This could be explained, in agreement with Soares and Restle (2002) that evaluated the nitrogen fertilization, in despite of the benefic effects, can result in the prejudice for the grains, and, in consequence for the sheath.

Table 1 Botanic Composition of wheat plants cv. BRS Umbu subjected with two conservation systems and two levels of nitrogen fertilization

Conservation system	Fertilization levels		Average
	120 kg.ha ⁻¹	180 kg.ha ⁻¹	
	Stem in % Dry Matter		
Silage in pre-flowering stage	41.4	39.6	40.5 ab
Silage in mealy grain stage	36.0	36.3	36.1 b
Haying in pre-flowering stage	41.7	42.3	42.0 a
Haying in mealy grain stage	40.8	44.0	42.3 a
Average	39.9 A	40.5 A	
	Dried leaves, in % Dry Matter		
Silage in pre-flowering stage	4.6	7.0	5.8 a
Silage in mealy grain stage	4.3	4.5	4.3 a
Haying in pre-flowering stage	4.1	5.3	4.7 a
Haying in mealy grain stage	5.0	4.5	4.7 a
Average	4.4 A	5.3 A	
	Green leaves, in % Dry Matter		
Silage in pre-flowering stage	38.0	39.2	38.6 a
Silage in mealy grain stage	11.8	11.8	11.7 b
Haying in pre-flowering stage	37.0	37.2	37.1 a
Haying in mealy grain stage	8.8	11.0	9.8 b
Average	23.8 A	24.7 A	
	Sheath in % Dry Matter		
Silage in pre-flowering stage	16.0	14.2	15.1 c
Silage in mealy grain stage	47.5	47.5	47.5 a
Haying in pre-flowering stage	17.2	15.2	16.2 c
Haying in mealy grain stage	45.5	40.5	43.0 b
Average	31.5 A	29.3 B	

Averages followed by capital letters in the row differ by F test at 5%.

Averages followed by lower case letters in the column differ by Tukey test at 5%

Conclusion: There were no significant differences in the botanic composition of wheat plants with except for the sheath at different levels of nitrogen fertilization.

References

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