

Chemical composition and calculated nutritive value of commonly available feedstuffs for ruminants in Burundi

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Burundese domestic ruminants usually consume overday grasses from limited natural grasslands and rest overnight in stabulation. Their productions may be partially improved by supplementary feeding during stabulation. However, nutritive value of available feedstuffs used in small farms are not well known, leading to present work.

Samples of natural grass (feedstuff 1), cultivated grasses (2 to 5) or legumes (7, 8), grass silage (6) and agro-industrial residues (9 to 15) were chemically analyzed, using classical procedures for dry matter (DM), crude protein (CP), fat, ash, Ca, P, and Kurschner's method for crude fibre (CF). Net energy (UFL, UFV) and intestinal digestible protein (PDIN, PDIE) content were calculated according to Demarquilly *et al* (1978, *in* : Alimentation des ruminants, INRA ed, Versailles, 469-584) and

Xandé *et al* (1989, *in* : Pâturages et alimentation des ruminants en zone tropicale humide, INRA ed, Paris, 21-30).

Chemical composition of feedstuffs 2 to 5, 8 to 15 and nutritive value of feedstuffs 3, 9 to 12 and 15 were similar to those reported respectively by Rivière (1991, *in* : Alimentation des ruminants domestiques en milieu tropical, IEMVT ed, Maisons-Alfort, 437-508) and Demarquilly *et al* (1978). PDIE-value of all analyzed grasses was higher than PDIN-value, as reported by Xandé *et al* (1989). Overall, nutritive value of *Setaria sp*, the best grass, is similar to the proposed tropical reference forage (Xandé *et al*, 1989), however with a lower daily voluntary intake (57 versus 71 g DM/kg BW^{0.75}). These preliminary results already allow to propose *Setaria sp* as the Burundese reference forage.

Feedstuff ¹	n ²	DM	CP	CF	Fat	Ash	Ca	P	UFL	UFV	PDIN	PDIE
		(%)			(% of DM)				(UFL or g		PDI/kg	DM)
<i>Eragrostis olivacea</i> K. Schum, H/WS	25	33.8	7.5	37.0		4.2	0.13	0.11	0.56	0.45	54	67
<i>Panicum maximum</i> , P/WS/2-mo	7	26.2	8.3	32.9		16.1	(0.66)	(0.30)	0.65	0.58	59	74
<i>Pennisetum purpureum</i> , P/WS/3-mo	7	19.8	6.9	37.9		12.4	(0.28)	(0.09)	0.57	0.47	49	64
<i>Setaria sp</i> , H/WS/AEH/1-mo ³	23	15.9	10.0	30.2		12.9	0.30	0.18	0.67	0.59	72	82
<i>Tripsacum laxum</i> , H/WS/AEH/12-mo	25	28.3	7.2	33.8		8.2	0.22	0.12	0.61	0.52	51	68
<i>Tripsacum laxum</i> , silage, H	21	22.6	5.4	41.5		8.8	0.18	0.10	0.60	0.51	34	49
<i>Calliandra calothyrsus</i> , H/12-mo	7	35.4	20.6	58.9		4.8	0.56	0.15	0.42	0.29	147	113
<i>Leucaena leucocephala</i> , P/WS/3-mo	7	24.4	32.2	20.9		7.7	(1.30)	(0.18)	0.93	0.86	230	183
Cottonseed expeller meal, P	21	90.7	45.5	7.2	8.7	6.5	0.18	1.12	1.13	1.09	346	298
Palm-kernel expeller meal, P	16	90.9	14.6	26.0	18.7	3.6	0.20	0.51	0.63	0.56	114	130
Rice bran, P	13	88.7	11.7	10.5	13.0	13.1	0.05	0.95	1.05	1.02	88	109
Wheat bran (imported wheat)	24	88.3	15.3	9.2	4.3	5.2	0.09	1.06	1.03	1.00	103	102
Banana tree trunk, H	5	7.0	3.0	29.6	(0.7)	12.6	0.21	0.06	0.68	0.60	21	54
Dwarf beans haulms, H	7	91.3	11.6	(21.4)	(4.4)	9.4	1.20	0.15	0.88	0.82	83	97
Manioc chopped dried roots, P	18	88.0	1.5	2.4	0.8	2.8	0.06	0.07	1.10	1.11	11	71

¹ Samples collected : in highlands (H), in plain (P)/during the wet season (WS)/from anti-erosive hedges (AEH)/after 1-, 2-, 3- or 12-mo (month) regrowth. ² Number of samples analyzed. ³ Daily voluntary intake of 25-kg local sheep = 57 g DM/kg BW^{0.75} ; organic matter digestibility = 66 % ; metabolizable energy = 2,004 Mcal/kg DM (Deswysen *et al*, 1995 : in present Symposium). Data in brackets are from Rivière (1991).