

Comparison of Nutritive Values of Tropical Pasture Species Grown in Different Environments, and Implications for Livestock Methane Production: A Meta-Analysis

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Table S1: Nutritive value (mean \pm standard deviation) of different tropical pasture species and cultivars

Cultivar Name	CP	ADF	NDF	OMD	Minerals	ME	¹ CH ₄
<i>Andropogon gayanus</i>	4.91 \pm 2.24	39.40 \pm 1.41	72.67 \pm 1.71	-	-	-	133.08 \pm 0.05
<i>Andropogon gayanus</i> cv Gamba	6.45 \pm 1.76	-	-	-	-	-	-
<i>Brachiaria brizantha</i>	11.17 \pm 3.20	47.02 \pm 6.34	66.48 \pm 7.81	-	11.49 \pm 1.33	-	132.89 \pm 0.23
<i>Brachiaria brizantha</i> cv Marandu	12.33 \pm 4.11	37.30 \pm 1.76	63.80 \pm 3.03	55.35 \pm 4.59	13.50 \pm 1.35	7.06 \pm 0.73	132.81 \pm 0.09
<i>Brachiaria brizantha</i> cv MG4	12.07 \pm 4.02	39.27 \pm 3.42	64.80 \pm 4.25	57.14 \pm 4.76	11.80 \pm 1.95	7.34 \pm 0.76	132.84 \pm 0.13
<i>Brachiaria brizantha</i> cv Piatá	12.53 \pm 4.82	42.27 \pm 5.84	65.57 \pm 2.98	57.00 \pm 6.35	11.77 \pm 1.46	7.32 \pm 1.02	132.87 \pm 0.09
<i>Brachiaria brizantha</i> cv Xaraes	11.85 \pm 2.98	38.17 \pm 2.42	65.77 \pm 1.53	55.38 \pm 5.11	11.93 \pm 1.15	7.06 \pm 0.82	132.87 \pm 0.05
<i>Brachiaria</i> cv CIAT BR02 / 1752	7.68 \pm 2.70	33.53 \pm 2.71	61.03 \pm 3.33	-	-	-	132.73 \pm 0.10
<i>Brachiaria</i> cv CIAT BRO2/1794	7.36 \pm 2.49	33.14 \pm 3.23	61.90 \pm 3.53	-	-	-	132.76 \pm 0.11
<i>Brachiaria decumbens</i>	10.80	41.70	71.70	-	-	-	133.05
<i>Brachiaria decumbens</i> cv Basilisk	11.48 \pm 5.10	41.07 \pm 2.14	67.77 \pm 3.71	54.61 \pm 6.96	11.30 \pm 2.50	6.94 \pm 1.11	132.93 \pm 0.11
<i>Brachiaria humidicola</i>	16.47 \pm 4.15	-	-	58.96 \pm 3.08	-	7.63 \pm 0.49	-
<i>Brachiaria humidicola</i> cv Llanero	12.55 \pm 4.41	40.60 \pm 0.20	67.23 \pm 1.27	56.97 \pm 5.43	11.60 \pm 0.62	7.31 \pm 0.87	132.92 \pm 0.04
<i>Brachiaria hybrid</i> cv Mavuno	11.00 \pm 1.41	-	61.50 \pm 2.12	64.75 \pm 2.47	-	8.56 \pm 0.40	132.75 \pm 0.06
<i>Brachiaria hybrid</i> cv Mulato	14.43 \pm 2.61	-	-	60.63 \pm 4.51	-	7.90 \pm 0.72	-
<i>Brachiaria hybrid</i> cv Mulato II	11.45 \pm 3.49	34.76 \pm 2.94	61.54 \pm 3.92	61.91 \pm 4.90	13.80 \pm 2.08	8.11 \pm 0.78	132.75 \pm 0.12
<i>Brachiaria hybrids</i>	11.56 \pm 4.45	45.33 \pm 4.62	64.61 \pm 3.01	57.96 \pm 7.79	8.61 \pm 2.23	7.47 \pm 1.25	132.84 \pm 0.09
<i>Brachiaria ruziziensis</i>	9.41 \pm 1.51	38.70	67.10	-	8.4	-	132.91
<i>Brachiaria ruziziensis</i> cv Kennedy	-	-	-	-	-	-	-
<i>Cenchrus ciliaris</i>	11.54 \pm 3.02	35.97 \pm 0.67	67.07 \pm 1.46	-	-	-	132.91 \pm 0.04
<i>Cenchrus ciliaris</i> cv Bilocla	6.10 \pm 2.96	-	-	-	-	-	-
<i>Cenchrus ciliaris</i> cv Gayndah	6.1 \pm 3.39	-	-	-	-	-	-
<i>Chloris gayana</i> cv ex-Tozi	7.00 \pm 2.65	48.10 \pm 2.33	72.87 \pm 0.81	44.56 \pm 10.23	8.80 \pm 0.62	5.33 \pm 1.64	133.09 \pm 0.02
<i>Chloris gayana</i> cv Callide	12.53 \pm 0.60	-	65.73 \pm 0.47	-	-	-	-
<i>Chloris gayana</i> cv. Katambora	7.25 \pm 4.17	-	-	-	-	-	-
<i>Cynodon dactylon</i>	10.86 \pm 5.86	31.00 \pm 3.17	70.34 \pm 7.54	57.50 \pm 2.52	5.92 \pm 1.50	7.40 \pm 0.40	133.01 \pm 0.23
<i>Cynodon dactylon</i> cv Jiggs	11.04 \pm 5.30	33.84 \pm 3.69	67.61 \pm 5.10	49.25 \pm 6.01	6.24 \pm 1.91	6.08 \pm 0.96	132.93 \pm 0.15

<i>Cynodon dactylon</i> cv Russell	10.82±5.59	33.38±2.94	67.90±2.56	-	5.88±1.10	-	132.94±0.08
<i>Cynodon dactylon</i> cv Tifton 85	14.83±3.15	44.50±2.55	74.73±4.16	50.72±6.05	-	6.31±0.97	133.14±0.12
<i>Cynodon dactylon</i> cv Tifton 9	10.02±4.53	35.46±2.01	66.10±2.43	-	5.72±0.84	-	132.88±0.07
<i>Cynodon nlemfuensis</i>	-	32.84±1.14	74.20±1.46	54.68±2.31	-	6.95±0.37	133.13±0.04
<i>Cynodon nlemfuensis</i> cv Florona	-	-	-	45.05±3.82	-	5.41±0.61	-
<i>Eragrostis curvula</i>	6.95±3.74	-	-	-	-	-	-
<i>Hemarthria altissima</i> cv Floralta	-	-	-	50.68±4.95	-	6.31±0.79	-
<i>Imperata cylindrica</i>	10.67±1.05	-	-	-	-	-	-
<i>Panicum coloratum</i> cv Bambatsi	7.05±2.86	-	-	-	-	-	-
<i>Panicum maximum</i>	9.28±2.48	45.93±3.41	76.26±3.30	62.47±3.06	7.05±1.56	8.20±0.49	133.19±0.10
<i>Panicum maximum</i> cv Mombosa	7.12±3.23	42.30±2.80	68.63±2.92	-	-	-	132.96±0.09
<i>Panicum maximum</i> cv Tanzania	7.13±1.13	40.80±1.88	68.73±1.46	-	-	-	132.96±0.04
<i>Paspalum atratum</i>	5.60±1.37	38.73±1.61	66.56±1.87	-	-	-	-
<i>Paspalum notatum</i>	-	35.48±1.32	74.92±0.68	51.92±2.22	-	6.51±0.35	133.15±0.02
<i>Paspalum notatum</i> cv Argentina	9.84±5.41	34.16±2.27	65.24±3.27	-	6.12±1.08	-	132.86±0.10
<i>Paspalum notatum</i> cv Pensacola	9.82±4.37	35.66±1.76	67.02±2.35	51.80±2.02	5.68±0.94	6.49±0.32	132.91±0.07
<i>Pennisetum purpureum</i>	10.79±3.22	42.97±4.71	67.99±7.27	59.70±6.38	9.12±3.61	7.75±1.02	132.94±0.22
<i>Pennisetum purpureum</i> cv 3rd generation	16.27±1.75	-	-	65.44±1.33	-	8.67±0.21	-
<i>Pennisetum purpureum</i> cv Dwarf	11.46±1.06	-	-	-	-	-	-
<i>Pennisetum purpureum</i> cv ILRI 16791	10.23±2.07	38.93±2.61	54.70±0.10	63.23±3.67	13.17±0.78	8.32±0.59	132.54±0.00
<i>Pennisetum purpureum</i> cv India	16.35±2.01	-	-	65.84±0.22	-	8.74±0.04	-
<i>Pennisetum purpureum</i> cv King	10.46±2.01	42.42±4.05	70.93±5.20	-	-	-	133.03±0.16
<i>Pennisetum purpureum</i> cv Kobe	17.00±2.45	-	-	67.34±0.75	-	8.98±0.12	-
<i>Pennisetum purpureum</i> cv Mott	13.83±1.64	36.08±2.37	63.36±1.97	67.18±4.22	-	8.95±0.68	132.80±0.06
<i>Pennisetum purpureum</i> cv NB 21	15.75±0.52	-	-	-	-	-	-
<i>Pennisetum purpureum</i> cv Red	15.25±2.57	-	-	69.34±2.61	-	9.30±0.42	-
<i>Pennisetum purpureum</i> cv Taiwan	15.60±2.31	-	-	66.19±0.35	-	8.79±0.06	-
<i>Pennisetum purpureum</i> cv TaiwanA25	10.60±1.83	-	-	-	-	-	-
<i>Pennisetum purpureum</i> cv Zanzibar	16.70±3.86	-	-	66.44±2.30	-	8.83±0.37	-

<i>Urochloa mosambicensis</i>	7.80±2.96	-	-	-	-	-	-
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(Nutrient metrics are CP = crude protein, NDF = neutral detergent fibre ADF = acid detergent fibre, OMD= organic matter digestibility, DMD = dry matter digestibility, ME = metabolisable energy , ADL = acid detergent lignin, minerals, , OM = organic matter. ¹methane gas production estimated using CH₄ (g CH₄ animal⁻¹ day⁻¹) = 17.0 (±0.99) × DMI + 0.03 (±0.01) × NDF.

Table S2: References of the studies included in the meta-analysis.

Reference	Country	Climate
[1]	Thailand	Tropical/ equatorial
[2]	Thailand	Tropical/ equatorial
[3]	Ethiopia	Arid/ dry
[4]	Ghana	Tropical/ equatorial
[5]	Thailand	Tropical/ equatorial
[6]	Philippines	Tropical/ equatorial
[7]	Ethiopia	Warm temperate
[8]	USA	Warm temperate
[9]	Ethiopia	Tropical/ equatorial
[10]	Brazil	Arid/ dry
[11]	USA	Warm temperate
[12]	Malaysia	Tropical/ equatorial
[13]	Vietnam	Tropical/ equatorial
[14]	Brazil	Arid/ dry
[15]	Brazil	Arid/ dry
[16]	Ghana	Tropical/ equatorial
[17]	Brazil	Tropical/ equatorial
[18]	Brazil	Warm temperate
[19]	Rwanda	Tropical/ equatorial
[20]	Venezuela	Tropical/ equatorial
[21]	USA	Warm temperate
[22]	USA	Warm temperate
[23]	Cameroon	Tropical/ equatorial
[24]	Vietnam	Tropical/ equatorial
[25]	USA	Warm temperate
[26]	USA	Warm temperate
[27]	Australia	Warm temperate
[28]	Thailand	Tropical/ equatorial
[29]	Thailand	Tropical/ equatorial
[30]	Mozambique	Arid/ dry
[31]	Sri Lanka	Tropical/ equatorial
[32]	Brazil	Tropical/ equatorial
[33]	Kenya	Tropical/ equatorial
[34]	Kenya	Warm temperate
[35]	Kenya	Tropical/ equatorial

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