British Journal of Nutrition (2007), **98**, 657
doi: 10.1017/S0007114507727460

Letter to the Editor

Methane production by cattle in the tropics

The data of Kurihara *et al.* (1999) have been used in estimating emissions of CH_4 of tropical cattle consuming warm season grasses. These data, obtained using Brahman crossbred cattle fed *ad libitum* on hays of the grasses *Dichanthium aristatum* (Angleton grass) and *Chloris gayana* (Rhodes grass), or a grain-based diet, indicated that CH_4 yield per intake of gross energy was higher than for cattle eating temperate forages.

CSIRO has now discovered a systematic error of +17 % in calculation of these CH_4 emission values as a result of an algorithm which used an incorrect chamber volume. The error does not apply to O_2 or CO_2 data, as these were corrected from gas exchange data resulting from combustion of a known amount of ethanol.

Because of the use made of the data of Kurihara *et al.* (1999) in the Australian greenhouse gas inventories of greenhouse emissions (e.g. National Greenhouse Gas Inventory Committee, 2006), I consider it necessary to correct the public record on behalf of CSIRO. Accordingly recalculations of the pertinent data are presented in Table 1.

The relationship between methane production (y, g/d) and dry matter intake (x, kg/d) for the two tropical grasses depicted in Figure 2 of Kurihara *et al.* (1999) becomes:

$$y = 34{\cdot}9x - 30{\cdot}8 \quad (r\,0{\cdot}97,\ P < 0{\cdot}001,\ \text{SE}\ 17{\cdot}7)$$

These corrections do not alter the validity of conclusions of Kurihara *et al.* (1999): " that the relationships between CH_4 production, energy utilization and live-weight change of cattle fed on tropical forages differ from those of cattle fed on diets based on temperate forages".

This communication has been approved by all authors of the original publication.

Table 1. Methane production by cattle according to diet

	Angleton grass	Rhodes grass	High grain	SEM	Statistical significance of difference between means
Methane production					
g/d	94·5[a]	215[b]	134[a]	15·0	$P<0{\cdot}01$
g/d DOMI	63·2[a]	54·2[b]	27·0[c]	2·31	$P<0{\cdot}05$
g/kg live-wt gain	*	420[a]	107[b]	63·8	$P<0{\cdot}01$
MJ/MJ GEI	0·087[a]	0·096[a]	0·056[b]	0·0058	$P<0{\cdot}01$
MJ/MJ DEI	0·171[a]	0·161[a]	0·081[b]	0·0109	$P<0{\cdot}01$

DOMI, digestible organic matter intake; GEI, gross energy intake; DEI, digestible energy intake.
* Not calculated, as cattle experienced live-weight loss.
[a,b,c] Mean values within a row not sharing a common superscript letter were significantly different, $P<0{\cdot}05$.

R. A. Hunter

CSIRO Rendel Laboratory
PO Box 5545
Rockhampton Mail Centre
QLD 4702
Australia
email Bob.Hunter@csiro.au

References

Kurihara M, Magner T, Hunter RA & McCrabb GJ (1999) Methane production and energy partition of cattle in the tropics. *Br Jnl Nutr* **81**, 227–234.

National Greenhouse Gas Inventory Committee (2006) *Australian methodology for the estimation of greenhouse gas emissions and sinks 2004: Agriculture*. Canberra: Dept. Environment and Heritage.