

## Growth and carcass characteristics of cattle and buffalo breeds reared on a dry zone pasture in Sri Lanka

Beef cattle production may be important and profitable in some areas of tropical countries where, for instance, the precipitation is scarce or the rainfall is seen only in a limited period of the rainy season and irrigation facilities are not well developed.

This paper deals with a study of growth rates and carcass characteristics of three *Bos* breeds and two *Bubalus* (buffalo) breeds carried out at a dry zone pasture in Sri Lanka. In this country beef constitutes approximately 60% of the total meat consumption and cattle for beef are found mainly in the dry zone where the rainy season is limited to only three months of a year, October, November and December.

The breeds involved in this experiment were two Ceylonese native breeds, Sinhala cattle and local buffalo, two Indian breeds, Red Sindhi and Murrah buffalo, and a temperate breed, Friesian. A total of 31 steers from the five breeds were used for the growth trial on a pasture of 8.4 ha for a period of 48 weeks from March 28, 1973 to February 27, 1974. Initial age of animals ranged from 7.0 months to 9.0 months except for the local buffaloes. Their age was about 13 months at the start of the experiment. The average maximum and minimum temperatures recorded on a farm nearby were 31.5°C

and 26.5°C respectively.

The growth rate was highest for the two breeds of buffaloes followed by Red Sindhi and then by Sinhala (Table 1). Friesians showed the lowest growth rate. The higher growth rates of buffaloes might be partly due to their larger body size at maturity<sup>1,2</sup>. On the other hand, the growth rate of Sinhala reflects their small mature size<sup>3</sup>. Hematocrit values measured approximately bimonthly by the microhematocrit method showed that values for the two native breeds, Sinhala and local buffalo, were always above 30% and those for the two Indian breeds ranged between 25% to 30%, while Friesians were anemic with hematocrit values always below 25% (Fig. 1). Since the normal value for healthy cattle is known to be around 34–38% with slight variations depending on age and breed<sup>4,5</sup>, the above results suggest that there is some difference of adaptability to the dry zone conditions

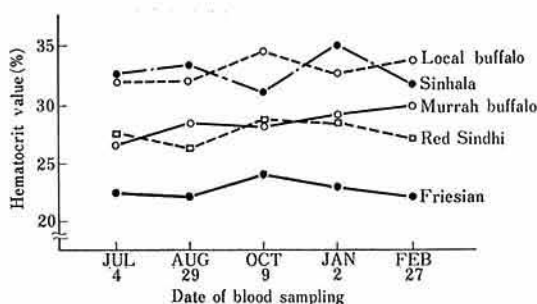


Fig. 1. Hematocrit values of cattle and buffalo breeds reared on a dry zone pasture in Sri Lanka

Table 1. Growth and carcass characteristics of cattle and buffaloes reared on a dry zone pasture in Sri Lanka

Breed	Final wt., kg	Average Daily Gain, kg	Dressing %	Percentage in the carcass			Muscle: Bone Ratio
				Muscle	Bone	Fat	
Sinhala	160	0.27	53.6	71.3	22.8	5.9	3.13
Red Sindhi	182	0.30	50.2	69.5	25.3	5.1	2.76
Friesian	167	0.13	47.6	70.7	26.5	2.8	2.73
Murrah buffalo	215	0.36	49.7	67.2	25.8	7.0	2.62
Local buffalo	278	0.37	53.4	70.8	23.2	6.1	3.07

among native, Indian and temperate breeds.

Sinhala and local buffaloes had the highest dressing percentage followed by the two Indian breeds and Friesians ranking last. Percentages of muscle and bones in the dressed carcass were not significantly different among breeds, while percentage fat in the carcass was significantly less for Friesians (Table 1). The amount of omental fat given as percentage to body weight was also least for Friesians. The results, along with the results obtained from blood analysis and growth trial, indicated that Friesians are least adapted to the dry zone conditions. Muscle: bone ratios were also highest for the two native breeds.

No significant breed difference was found for Warner-Bratzler shear force values (meat tenderness) both for the longissimus dorsi and the semitendinosus muscles cooked to an internal temperature of 70°C. Palatability scores by a taste panel showed no significant difference between *Bos* (Red Sindhi and Friesian) and *Bubalus* (Murrah) meat. These results demonstrate that if buffaloes are killed young, their meat can compare equally with cattle meat with regard to eating quality.

In this experiment the growth rate of

buffaloes was highest and their meat was comparable to cattle meat regarding eating quality. However, as buffaloes are said to be inferior to cattle in reproductive efficiency<sup>6)</sup>, further research needs to be undertaken before an assessment of overall efficiency could be made.

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