

ABSTRACT

After standard rearing, seventy eight (78) male Holstein calves were weaned at eight weeks and offered one of three concentrate meals incorporating coconut meal, brewers' grains, wheat middlings, molasses, soyabean seed meal, tallow, vitamins and minerals at 1.8 kg per head per day. Fresh cut grass was fed ad lib. Meals 1, 2 and 3 contained 16.5, 17.9 and 22.0 per cent C.P. and 4.48, 4.73 and 4.88 M cal GE per kg DM, respectively. Differences in liveweight gain at twenty-four weeks of age were non-significant.

A special study was made using four animals per treatment one from each being slaughtered at the start. The others were slaughtered at twenty-four weeks ^{of} age and fresh weights of stomach compartments recorded. With compartment weight expressed as a percentage of total stomach weight only abomasal differences were significant. Evaluated by half carcass dissection differences in fat, lean, bone and connective tissue percentage and muscle:bone ratio were non-significant. Fat content was highest on the high energy meal where muscle:bone ratio was the lowest.

Significant differences were observed in average daily intake of forage DM and DM intake of Meals 1, 2 and 3. ^{Estimated} average daily DE intake was 6.26, 3.30 and 4.51 M cal ($P < 0.001$) respectively and average DCP intake was 191.6, 141.8 and 183.6 g ($P < 0.05$). The tallow energy supplement in Meals 2 and 3 depressed intake and digestibility of DM, CP and Energy. Chromic oxide studies with calves

showed digestibility of DM was 62.8, 45.4 and 51.3 per cent, digestibility of CP was 59.2, 53.9 and 56.6 per cent and digestibility of energy was 62.7, 40.6 and 52.5 per cent, respectively. Animals on the low-energy, low-protein meal consumed more DDM, DCP and DE per day.

Growth rates were related to DCP and DE intake throughout the study and it was concluded that generally ARC (1965) DCP requirements were the same for temperate animals reared in the Tropics. Published DE requirements appear higher than necessary.

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