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Effect Of Birth Weight On Efficiency Of Beef Production

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Birth weight (BW) is related to calving difficulties (CD), calf mortality (CM) and infertility carry-over effects. Calving difficulty is a most serious problem facing efficient beef production, and though many factors are involved in CD, the dystocia level increased linearly with BW (Smith et al, 1976). Few producers are aware of the relative magnitude of the monetary losses resulting from calf wastage (Martin et al, 1976). Presently, losses are being exacerbated by the unskilled use of the large continental breeds for more lean and less fat in beef. Rejection of fatty meat at home and abroad is decisive, and incompatabilities between dam and lean beef progeny must be alleviated. So, the purpose of the research was to determine how to lower BW for ease of calving yet maintain, or enhance if possible, livability of the calf and postnatal growth for desirable end product.

Tauras, indicus taurus, "lean beef" taurus, lean beef indicus and indicus genotypes at the AMRC (U.Q.10) 128 cow unit facility at the Queensland Agricultural College (QAC), generated the data for this report (Dowling, 1974). The procedure is to artificially inseminate the cows and to calve in yards so calf is weighed forthwith. Records are computerised.

Selection was made for factors eg. for low birth weight (22 kg) of indicus Sahiwal with the extant taurus Shorthorn (BW 31 kg) to develop hybrids (BW 25 kg). At the other extreme, the Chianina was selected for livability and carcass factors. The progeny (BW 29 kg) produced high yielding carcass (360 kg; 19% fat at 20 months).

The indicus taurus hybrid dam is fitter and bigger than the beef taurus but has a calf with a lower BW. The BW of ¾ "Lean Beef" progeny out of the indicus hybrids is significantly lower for a superior carcass, than those from the lean beef on taurus dams (39 kg). Conversely the backcross to indicus (¾) resulting in a highly significantly ($P < 0.01$) lighter (26 kg) calf out of the large lean beef hybrid dams, with postnatal growth lower but not significantly different from the ¾ "lean beef" crosses.

Thus carcass characters can be combined with optimal BW and resistance for efficiency. Importantly, the use of a "lean beef" factor from the large European breeds permitted high indicus content (¾ indicus, ¼ lean beef) to breed "no dip" resistant cattle which were efficient for beef. There may be no better low-cost solution.

Hence, it could be tragic for the industry in Australia if misuse of "lean beef" breeds, precipitating high BW and CD, delayed their use advantageously.

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