Productive Ability of Alternative Breeder Genotypes Under Extensive Grazing Conditions

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Feedback from South East (SE) Asian feedlotters in early 1990s indicated that there was an increasing problem with over-fattening at the completion of the feeding phase in young Brahman cattle sourced from northern Australia. SE Asian feedlot beef usually supplies the Asian 'wet' markets, which consider fat a less desirable component of the carcass. This problem of over-fattening can be combated by using cattle with a proportion of later maturing genes. However, the most productive animals in harsh tropical environments are those with the right balance of genes for growth potential (*Bos taurus*) and stress resistance (*Bos indicus*) (Frisch and Vercoe 1984) and animals which contain too high a proportion of later maturing genes have not performed well in northern Australia in the past. The aim of this experiment was to investigate the relative productive ability of alternative breeder genotypes to Brahman, in terms of breeding herd efficiency (BHE) ie. kg of calf weaned per annum per AE mated, under extensive grazing conditions in the Victoria River District (V.R.D.) of the N.T.

Four herds high grade Brahman (Bra), Droughtmaster (DM), 50% Charolais 50% Brahman bulls X Brahman cows (F1 bulls X Bra cows) and Brahman bulls X 50% Charolais 50% Brahman cows (Bra bulls X F1 cows) containing 113-130 head, grazed paddocks approximately 20km^2 in size and of similar land composition at Victoria River Research Station during 1997-2001. Breeders were mustered during May and October each year with calves being weaned down to 100kg. At each muster breeders were diagnosed for pregnancy, lactation status and body condition and liveweight was recorded. Bulls were continuously mated at 5%, fertility tested annually, vaccinated for vibriosis and culled for age at 10 years. Replacement heifers were selected at 2 years of age based on weight above 280kg and desirable body type. Replacement heifers were mated in January for 4 months and run separately from adult breeders. All animals were vaccinated against botulism strains C & D. Breeders were managed according to the "best bet system" for the V.R.D. (Cobiac, 2006).

Table 1. The breeding herd efficiencies of alternative herd genotypes from 1997 to 2000. Means with different letter superscripts are significantly different (P<0.05, ANOVA)

	Bra		DM		F1 bulls X Bra cows		Bra bulls X F1 cows	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
BHE (kg weaned / AE)*	140.0 ^{A}	(14.6)	160.0 ^{A}	(14.9)	151.5 ^{A}	(12.1)	142.7 ^{A}	(11.5)
Breeder Liveweight (kg)	416.9 ^{A}	(55.2)	422.5 ^{B}	(53.0)	418.9 ^{A}	(54.0)	450.7 ^{C}	(62.1)
Weaning Rate (%)	75.1 ^{A}	(3.1)	83.7 ^{A}	(7.1)	78.3 ^{A}	(3.2)	82.1 ^{A}	(6.9)
Weaner Liveweight (kg)	176.0 ^{A}	(43.7)	176.5 ^{A}	(39.0)	180.5 ^{A}	(42.5)	179.8 ^{A}	(39.4)

*AE, Animal Equivalent, refers to a 450 kg breeder.

These results show that there were no significant differences in either BHE or weaning rate between the different genotypes and indicates that genotypes with up to 50% "later maturing" genes can be as productive as Brahmans under extensive grazing conditions in the VRD. Breeders of all genotypes produced at least 140kg of weaner annually per AE mated when run under the best bet management system in the Victoria River District, NT.

Frisch, J.E. and Vercoe, J.E. (1984). *J. Agri. Sci. Camb.* **103**:137-153
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