

THE BELMONT

A: ORIGINS AND HISTORY

The Belmont blends the highly adaptive and productive traits of the Africander (the oldest recognised African breed) such as easy calving, parasite resistance, disease resistance, heat tolerance, hardiness, meat quality and fertility, with the productive traits, such as fertility, growth, carcass traits and meat quality of the British breeds. Genetically the Africander component distinguishes the Belmont from other "New" breeds derived from the Brahman, such as Santa Gertrudis, Droughtmaster, Braford, Brangus, Charbray etc. The Belmont Breed Society has based its standards of excellence on productive traits that can be objectively measured and are known to be heritable. In this respect the Belmont differs significantly from ALL other breeds.

Emphasis is placed on objectively measured traits:

- (a) Performance (growth, fertility, carcass yield, meat quality),
- (b) Adaptive (parasite resistance),
- (c) Managerial (temperament, polled), and
- (d) Structural soundness.

The Belmont is about a philosophy of breeding highly productive, easy care cattle, adapted to their environment, rather than the traditional notion of a breed.

B. RULES FOR ESTABLISHING BELMONTS

The Belmont can be established by grading up from any base cow herd through three generations of mating to registered Belmont bulls, the fourth crop being registrable as pure Belmonts. Any Belmont animal must be reared in a herd in which a system of performance recording approved by Council is adopted. Selection is based on accurate measurements of traits that are heritable and economically important in terms of beef production. Although the colour is predominantly red, no selection for this, or other aesthetic traits are made.

The Belmont Breed Society regulations specify the following genetic content:

1. African Genetics (Africander, N'Guni, Senepol or similar) - max. 1/2, min 1/4:
2. Temperate Genetics (British or European) - max. 1/2, min. 1/2.
3. Indian Genetics (Brahman, Sahiwal or similar) - max 1/4:

EVALUATION

The Belmont has undergone extensive scientific and commercial objective evaluations against many breeds in a wide range of environments, both domestically and overseas..

Cattle production under grazing conditions is affected by



Young bull

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environmental stress factors, such as level (quality) of nutrition, temperature and humidity, and parasite burdens.

These stresses vary across regions, and while some of them, under certain circumstances can be reduced by management, eg nutrition through supplementary feed and parasite burdens through dipping and drenching, others such as temperature and humidity cannot. Reducing environmental stress is always costly and in many circumstances cannot be economically or environmentally sustained e.g. tick control. The Belmont with its adaptability to stress, and its outstanding production performance and meat and carcass quality is therefore ideally suited for a range of environments.

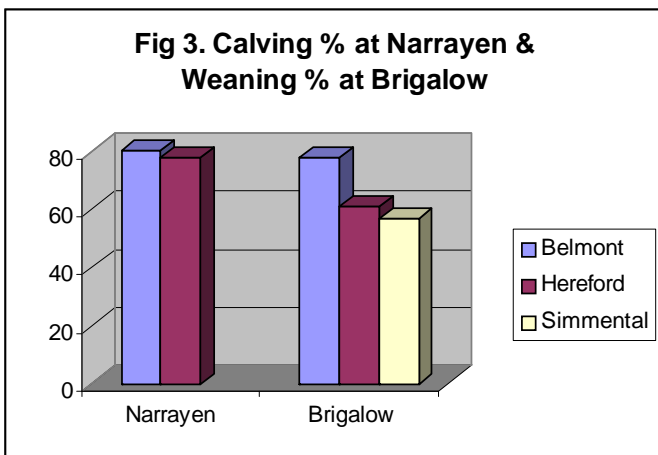
I. REPRODUCTION

At Mt Eugene, Central Queensland, in a Brahman-cross herd, pregnancy rates of daughters from Belmont bulls, were more fertile than those from Santa Gertrudis, Droughtmaster and Brahman bulls. The differences in fertility between the Belmont's and the Brahman derived breeds were due to the higher fertility in both the females and the bulls. The largest advantage in fertility in favour of the Belmont occurred in the 2 yo lactating heifers which conceived earlier than the other breeds.

Even in the milder environments of the Burnett (Narrayen

Research Station) and Callide Valley (Brigalow Research Station) regions in which ticks were controlled, calving weaning rates of Belmont's, were higher than Herefords and Simmentals. At the Brigalow Research Station, the higher weaning rates of the Belmonts reflected their much higher pre-weaning calf survival.

The much higher reproduction of the Belmont as compared to other breeds comes from a combination of shorter inter calving interval, lower lactational anoestrus, higher bull fertility, and higher survival of calves and adults.

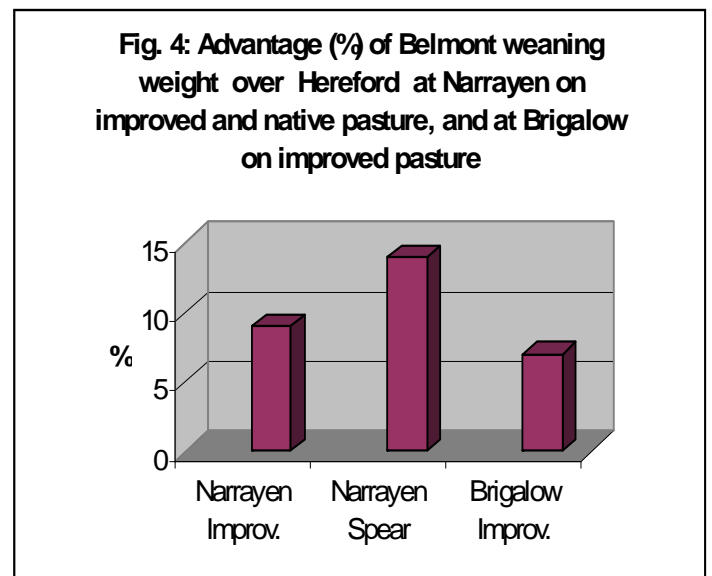


II. GROWTH

Weaning weights of Belmonts have been higher than those of Herefords on spear grass (poor nutrition) and improved pastures (good nutrition) at 'Narrayen' and 'Brigalow'. In Central Queensland weaning weights of Belmonts have been similar to those of Droughtmaster, Brahman-cross and Santa Gertrudis on commercial and research stations. At 'Brigalow' yearling (379d) weights of Belmonts were 13.5% heavier than Herefords. In 'Aus-Meat trials' (Average from 9 trials held in Queensland & New South Wales, 1988 - 1995): Weight gains of Belmonts were 4, 15 and 9 % higher than the trial average.

	Grain-fed Export	Grain-fed Domestic	Grass-fed Export
Belmont	1.74 kg/day	2.11 kg/day	110.6 kg
Trial Avg	1.67 kg/day	1.84 kg/day	101.3 kg

At "Narrayen" cow weights of Belmont's on Spear grass were heavier than Herefords by 25kg in October (post calving) and 17 kg in mid April (weaning), demonstrating the Belmonts ability to handle poorer quality feed better than the Herefords.



III. CARCASS

In the 'Aus-Meat trials' the saleable meat yield and market suitability of Belmonts exceeded the trial average for export and domestic markets from grain and grass.

	Saleable Meat Yield (%)			Market Suitability (points)		
	Grain		Grass	Grain		Grass
	Export	Domestic	Export	Export	Domestic	Export
Belmont	69.8	73.06	71.3	264.9	273.9	225.2
Trial Avg	69.4	72.47	70.9	223.1	270.4	205.0

Belmonts from commercial properties, Tremere, Emerald Pastoral College & Mt Eugene, dominated carcass competitions over many years, with wins in feedback and feedlot trials and carcass competitions Australia wide (250 - 400 entries).

All results have shown that Belmont's produced carcasses equal to British and European crosses and often surpass them. This has been achieved by better weight gains, higher carcass weights, larger eye muscle, optimum fat cover and higher dressing percentages.

IV. MEAT QUALITY

On Northern pasture Belmonts were the only tropical breed to achieve MQ4 scores and were second only to Angus, achieving better scores than other British, European, Santa and Brahman breeds. In Northern and Southern feedlots Belmonts achieved higher MQ scores than the other tropical breeds and similar to the British and European breeds.

Under Northern Pasture and Northern Feedlot conditions, Belmont's had the best marbling of all breeds (Angus, Hereford, Shorthorn, Charolaise, Limousin, Santa and Brahman). In the Southern Feedlots they were only marginally lower than Angus and Shorthorn, but better than all the other breeds.

Taste Panel test rated meat from Belmont's significantly more tender than that of Shorthorn, Brahman, and Brahman x Shorthorn steers raised in the Kimberly and slaughtered in Perth.

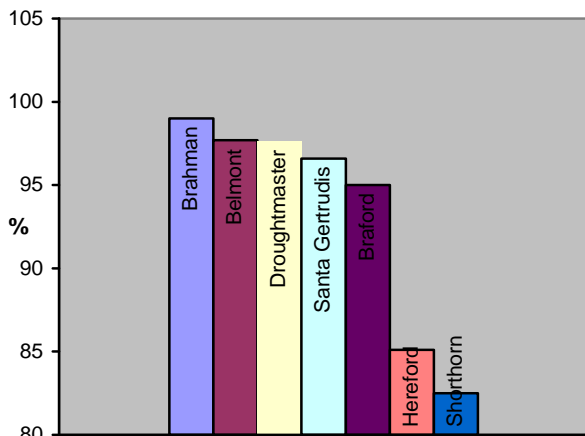
The excellent meat quality of the Belmont comes from its tenderness and high marbling.



Steer

V. ADAPTATION

a. Tick Resistance. (fig 6.)



Belmonts resistance is 98%, which means that only 2 of 100 seed ticks complete their lifecycle, while 82% resistance of the Shorthorn means that 18 out of 100 seed ticks survive. The Belmont is therefore 9x more resistant than the Shorthorn. Using the Belmont is therefore an effective and sustainable method of controlling ticks.

At "Brigalow" it required four to six less dippings to control cattle tick on Belmonts than for the Herefords and Simmentals. At the time of that study chemical costs were 30 cents per head and represented a saving of \$1350 to \$2030 for a herd of 1000 adult equivalents. This did not include the value of labour which could be directed towards income earning tasks. In present day terms these figures would be significantly higher.

Belmont's are also relatively resistant to the most important blood parasite causing tick fever, *Babesia argentina*, but not to *Babesia bigemina*.

The superior heat tolerance of Belmonts as compared to British are largely due to higher sweating capacity and sleeker coats. Heat stress raises body temperature and respiration rates, and depresses food intake, so that production is severely affected. Under hot conditions the more heat tolerant Belmonts grow 25% faster than British cattle

In drought years mortality rates of adult cows rose from 2.4% to 5.6 % in the British, 0.4 to 2.0% in Belmonts and 0.6 to 1.5% in Brahman-cross at "Belmont". Also, Belmont and Brahman-cross heifers lost less weight during the drought and gained weight faster than the British when conditions improved. During the same period weight changes in dry pregnant cows were; British -33 kg, Belmont's -8.7kg, and Brahman-cross +5.8kg.

At "Belmont" Pink Eye (bovine infectious keratoconjunctivitis) infections at 8m of age in the Belmont's was 4.2%, Brahman-cross 5.7% and British 52.5%. Also the infection was much more severe in the British

The lifetime survival of Belmonts is the highest of all the breeds at "Belmont". The high lifetime survival of Belmonts gives them an economic advantage over other breeds.

- Mortality rates at "Belmont"

	Perinatal (0 - 7d)	Pre-wean	Wean to 15 months	Adult (annual)	Predicted survival Birth - 6 yrs
Belmont	3.5	1.5	1.1	0.4	92.1
Brahman cross	5.2	2.4	1.2	0.6	88.7
British	5.5	3.0	2.7	2.4	79.0

At "Brigalow" calf losses from pregnancy to weaning were Belmonts 6%, Herefords 9% and Simmental 12%. In addition cost of calving supervision to avoid excessive cow and calf deaths and for animal welfare considerations, was nil for Belmonts but high for Herefords and very high for Simmental. Death rates in the breeding cows was; Belmont's 0.30%, Herefords 0.62% and Simmental 1.03% i.e. less than half of Herefords and 1/3 that of Simmental. In the other classes of stock mortalities were; Belmont's 0.25%, Herefords and Simmental 0.44%. At "Narrayen" cow mortalities of Belmonts (0.8%), was half that of Herefords (1.8%).

At "Belmont" 5% of Belmonts, 6% of Brahman-cross and 16% of British were affected by lantana poisoning. Of the affected animals, 10% of Belmont's, 11% of Brahman-cross and 50% of British died. The fact that the British were more stressed may have caused more of them to eat Lantana and also contributed to their high death rates.

VI. CROSSBREEDING



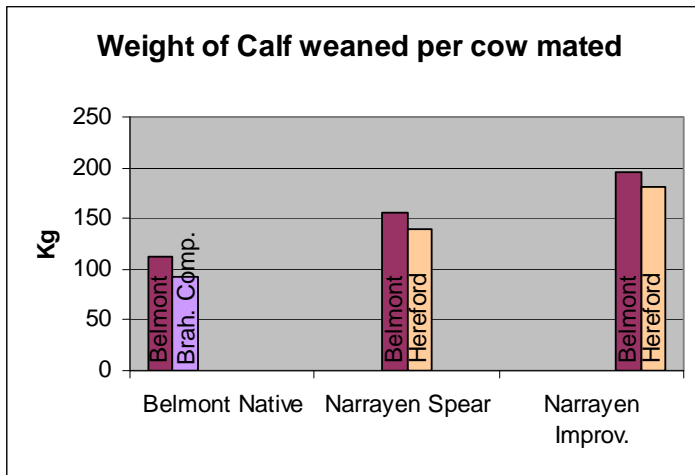
Yearling Heifers

In research, feedlot, and feedback trials, on grass and grain, growth rates of Belmont Crosses have been consistently 14% above the average. Carcase yields and Meat Quality have been equal to British breeds and always better than Brahman or its Composites. In north west plains of NSW, at Moree a crossbreeding programme to evaluate, Aquitaine d'Blond, Main Anjou, Chianina, Limousin x Shorthorns, Simmental x Herefords, and Belmont and Brahman x F1 Brahman/Shorthorn, weight per day of age of Belmont crosses were better than pure Shorthorns (17%), Simmental x Hereford (12%), Brahman x F1 Brahman/Shorthorn (4%) and Limousin (1%). The Belmont crosses were about 10% lower than the Aquitaine d'Blond, Main Anjou, and Chianina.

The exceptional Fertility and Docility of the Belmont is also passed on to the Crossbred progeny, leading to large productive and management advantages.

VII. HERD PRODUCTION AND PROFITABILITY

A. Cow production



In the harsh "Belmont" environment, Belmonts produced 20kg of weaning weight more than the Brahman Composite, and at "Narayen" 15kg more than the Herefords on both pasture types.

b. Earning Capacity.

Economic analyses of data collected at the Brigalow Research Station demonstrated that the Belmont herd produced 20% more income than the Hereford herd and 12% more than the Simmental herd.

c. Economic Value.

An economic analysis by CRC showed that replacing Brahmans in the Northern herds with a highly adapted Composite with high fertility, high carcass and meat quality, and docility like the Belmont would increase gross margins by up to \$24 per adult equivalent when grass fed, and up to \$76/adult equivalent when grain finished. In contrast crossbreeding would only increase gross margins by \$7.

VIII. SUBJECTIVE PERCEPTIONS: CONFORMATION AND TYPE

The Belmont has come in for harsh criticism about its appearance from the highly traditional Cattle Industry. The criticism has mainly centred on its perceived poor conformation, specifically that it was light in the hind quarter and generally lacked in beef conformation. Other common remarks are that it is light boned, and that it had an ugly head. Characteristics that have absolutely nothing to do with production!

Somehow, all the facts contradict this perception. The Belmont has enjoyed unprecedented success at all the carcass trials, and evaluations, both commercially and scientifically against all breeds, including the traditional British breeds renowned for their carcass and meat qualities.

In South Africa analyses of conformation and type scores given to Belmont and Bonsmara bulls by the Bonsmara breed association Inspectors showed that

- The most important factors affecting conformation was body condition (degree of fatness) and age. (It is often said; "the best conformation is FAT" and this confirms this observation.)
- There were large differences between the Inspectors. That is, the score given is highly dependant on who was doing the judging.
- Breed was the least important factor in determining the conformation score. That is, Belmonts and Bonsmaras were, in general, very similar.

Possible reasons for this perception are that the main showcase for Breeds are at the Agricultural Shows. Cattle are prepared for these events from birth in a totally artificial environment on extremely high energy and protein diets. The cattle are therefore very large and obese, even at



IX. SUMMARY AND CONCLUSIONS

- The Belmont has undergone more rigorous and exhaustive evaluations than any other breed. It has been compared in its own right and in crossbreeding trials to traditional British, European, Brahman and Brahman derived breeds in Tropical and temperate environments. All the results have proven beyond doubt that it has by far the best ability of all breeds to produce beef efficiently under a wide range of environments.
- It has been shown that the Belmont has many advantages over the British and European breeds as a sire breed in crossbreeding programmes with the Brahman and breeds derived from it in the North. The Belmont confers all the production and beef quality benefits of temperate breeds, but because of its adaptation, using Belmont bulls does not require special treatment as would temperate breed bulls (Angus, Charolaise, Hereford etc.)
- Of particular interest, are the CRC findings that using a composite like the Belmont, would result in \$17 per adult equivalent higher gross margin than a crossbreeding programme based on Brahman herds. In addition to this there is the advantage of managing a simple straight breeding programme in contrast to a complex crossbreeding programme.
- Predicted Climate change indicates that large areas of temperate and sub-tropical Australia in which British and European breeds are currently being run, will become more harsh i.e. hotter and drier, making them less suitable for temperate breeds. The Belmont possessing all the production, carcass and meat quality traits, in addition to heat, drought, disease and parasite tolerance, makes them the logical replacement for temperate breeds in the regions that are or will be adversely impacted by climate change.
- What is abundantly clear, and has been conclusively proved, is that although the Belmont is a tropical breed, it is also equal to or better than the temperate breeds in the temperate environments for all the important production traits viz. Fertility and Growth, and Carcass and Meat quality traits. In addition it has all the traits required for easy and efficient management such survival, ease of calving, disease resistance, and heat tolerance. It can therefore replace many existing breeds in the temperate regions and improve productivity without any risk at all.
- All results from scientific and commercial trials prove conclusively and beyond doubt that the breed is;
 1. Highly Fertile,
 2. Very Docile,
 3. High Weight gains,
 4. High yielding Carcasses
 5. High quality Beef in feedlots and on pasture in the northern and temperate environments.
 6. Adapted to a wide range of environments.

