

# FEEDLOT PERFORMANCE OF NGUNI CATTLE FROM THE EMERGING SECTOR

**Michiel M Scholtz**  
**Programme Leader : Beef, Dairy and Biotechnology**  
**ARC-Irene**

The Beef Profit Partnership (BPP) project aims at developing profitable business systems for previously disadvantaged farmers in South Africa. This project is jointly funded over 5 years (July 2001 to June 2006) by the ARC (Agricultural Research Council) and ACIAR (Australian Centre for International Agricultural Research). One of the project outcomes is to benchmark and develop the role of cattle from resource-poor farmer herds in commercial beef production systems.

In one of the trials, the growth performance, lean yield and meat quality of different cattle breeds sourced from communal farming systems, emerging farmers and commercial farmers were compared.

This article will only focus on the results obtained from Bonsmara (BoE), Brahman (BrE) and Nguni (NgE) cattle sources from emerging farmers, compared to Bonsmara (Bo) cattle sources from commercial farmers. Furthermore only the results after 92 days in the feedlot will be given.

The animals from emerging farmers were sourced by the ARC from the Limpopo and North West Provinces. The commercial Bonsmara cattle were sourced by a feedlot buyer. The animals were adapted to a feedlot diet and were fed individually (using Calan self-feeders) until the day of slaughter.

Basic information on the animals at commencement of the feedlot trial is given in Table 1.

**TABLE 1 : Means for some growth traits (92 days feedlot trial)**

| Trait                              | Bo   | BoE  | BrE  | NgE  |
|------------------------------------|------|------|------|------|
| Weaning weight norm <sup>(1)</sup> | 213  | 213  | 210  | 151  |
| Weight on Arrival                  | 220  | 178  | 178  | 169  |
| Initial Weight                     | 246  | 214  | 212  | 194  |
| ADG <sup>(2)</sup>                 | 1.87 | 1.81 | 1.59 | 1.62 |
| FCR <sup>(3)</sup>                 | 5.14 | 5.04 | 5.10 | 5.24 |

<sup>(1)</sup> Official 205-day weight as recorded by the National Beef Cattle Improvement Scheme (NBCIS)

<sup>(2)</sup> Average daily gain (kg / day)

<sup>(3)</sup> Feed conversion ratio (kg feed / kg weight gain)

The weight on arrival of the Bonsmara from commercial farmers corresponded well with the weaning weight from the NBCIS. In the case of the Bonsmara and Brahman from emerging farmers the weight on arrival was lower (20%) than the official weaning weight. However, in the case of the Nguni from emerging farmers the weight on arrival was 12% higher than the official weaning weight. In another study it was also found that the 205-day corrected weaning weight of Ngunis from emerging farmers was higher than that of the Seed Stock Industry.

Both Bonsmara groups had higher growth rates (ADG) than the Brahman and Nguni, whereas there was no difference in efficiency (FCR).

**TABLE 2 : Means for selected carcass characteristics (plus standard errors<sup>(1)</sup>)**

| Characteristic      | Bo                 | BoE               | BrE                | NgE                |
|---------------------|--------------------|-------------------|--------------------|--------------------|
| Slaughter weight    | 467 <sup>e</sup>   | 434 <sup>cd</sup> | 413 <sup>bc</sup>  | 391 <sup>b</sup>   |
| Cold carcass weight | 270 <sup>c</sup>   | 256 <sup>c</sup>  | 235 <sup>b</sup>   | 227 <sup>b</sup>   |
| Dressing %          | 57.8 <sup>bc</sup> | 58.9 <sup>c</sup> | 56.8 <sup>ab</sup> | 58.0 <sup>bc</sup> |
| Hide yield %        | 13.0 <sup>a</sup>  | 12.7 <sup>a</sup> | 15.7 <sup>a</sup>  | 13.3 <sup>a</sup>  |
| Bone yield %        | 16.4 <sup>a</sup>  | 16.4 <sup>a</sup> | 17.1 <sup>b</sup>  | 16.2 <sup>a</sup>  |
| Marbling %          | 1.43               | 1.62              | 1.46               | 1.53               |

(1) - Different superscripts denote significant differences between characteristics

Although the slaughter weight between all breed groups differed, the carcass weight between the Bo and BoE did not differ. Similarly the carcass weight between the BrE and NgE did not differ significantly.

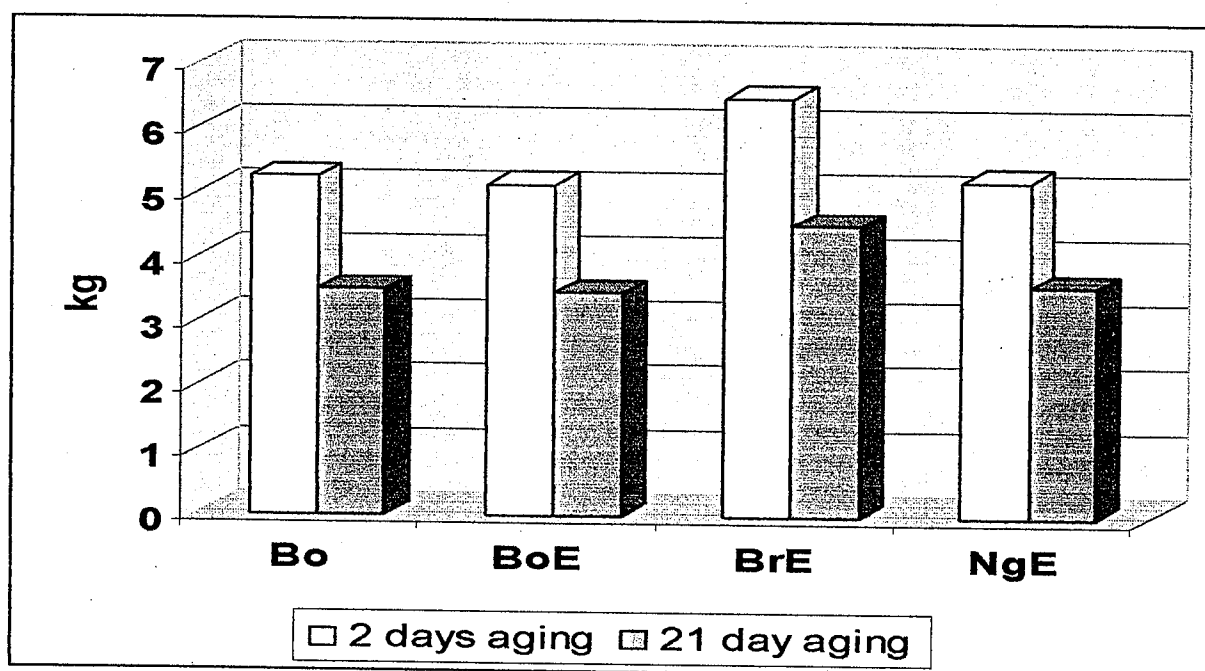
The BrE had significantly higher hide and bone yield percentages than the other breed types. This resulted in a significantly lower dressing percentage. There were no differences in marbling between the different breed types.

**TABLE 3 : Warner Braztler Shear Force (kg) as an indication of meat tenderness**

| Days          | Bo                 | BoE               | BrE               | NgE                |
|---------------|--------------------|-------------------|-------------------|--------------------|
| 2 days aging  | 5.24 <sup>ab</sup> | 5.13 <sup>a</sup> | 6.50 <sup>c</sup> | 5.23 <sup>ab</sup> |
| 21 days aging | 3.51 <sup>a</sup>  | 3.46 <sup>a</sup> | 4.53 <sup>b</sup> | 3.59 <sup>a</sup>  |

At two days post partum the meat from the BrE was approximately 1.3 kg tougher than that of the other breed groups. After 21 days the shear force of the BrE was above 4.5 kg, whereas that of all the other breed groups was below 3.6 kg. The results of Table 3 is also illustrated in Figure 1.

**FIGURE 1 : Warned Braztler Shear Force**



### CONCLUSION

- The differences in growth rates can be explained by the differences in breed / maturity type
- After 92 days feeding no significant differences in efficiency (FCR) were found. FCR is one of the main profit drivers of commercial feedlots. This is thus a positive result for the Nguni, and should open up the commercial feedlot market for Ngunis from both the commercial and emerging sectors
- The Brahman had a greater hide yield percentage and significantly tougher meat
- With few management (or breeding) interventions to increase the weight of Nguni calves at weaning, or back grounding them to increase their weight at feedlot entry, the Nguni can meet the requirements of commercial feedlots

### Note :

- 1) Information in this article was extracted from a report on "Characterization of cattle from communal, emerging and commercial origin with regard to growth performance, carcass and meat quality characteristics" by Drs Phillip Strydom and Lorinda Frylinck (May 2004)
- 2) This trial also included Nguni from communal areas, non-descripts from emerging farmers and Drakensberger and Tuli from commercial farmers. The performance of the latter two were similar to that of the Bonsmara

