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Scholtz, M.M. Lombard, P.E. & Roux, C.Z.

Terminal cross-breeding as a breeding strategy for beef cattle in Africa.

Livestock Prod. Science, 1-16

RefID 1859

Notes: Terminal cross-breeding, using two cattle breeds indigenous to Southern Africa (Nguni, Afrikaner) as dam and three European breeds : Charolais, Simmentaler, Chianina as sire has been investigated. Calving difficulties were limited and birth mass was restricted to the mid-parent value by Afrikaner cows and to 13% below the mid-parent value by Nguni cows. Furthermore, cross-breeding had no negative effect on cow performance such as mass change and fertility, while productivity (weaning mass of calf at birth) increased from 49% to 57%.

Schoeman, S.J. 1989

Recent research into the potential of indigenous cattle with special reference to the Sanga.

S.Afr.J. Anim.Science. 19 (2) All : 55-61

RefID 450

Notes: A review based on recent research is presented on the production of Sanga (Nguni) cattle in South-Africa. The high calving rate of Sanga cattle (89,6 %) compared to an average of 77,4 % of four other breeds was the most outstanding feature. Nguni heifers reached puberty much earlier (349,9 days) than Bonsmara (419,0 days) and Drakensberger (407,2 days) breeds. Low calving losses were evident in an early mating system (12 months). Indigenous cattle breeds are more tick resistant and may possibly be more efficient in production than exotic breeds. Evaluation of indigenous breeds in cross-breeding systems owing to their outstanding maternal performance is recommended.

Ramsay, K.A. 1999

Phenotypic Selection of Nguni Cattle in different environments in Southern Africa.

Paper. Information Sheet : 1-2

RefID 1404

Notes: Although the origin of the Nguni is discussed at virtually every Nguni field day or gathering, it is important to take note of the migratory routes of the Sanga cattle and their owners to appreciate the fact that, although the breed has adapted perfectly to its environment, these environments differ radically as far as climate and veld is concerned and that these differences have influenced the size of the Nguni/Sanga.

Scholtz, M.M. & Roux, C.Z. 1984

Improving fertility by emulating natural selection.

SA Cattleman, August : 8-27

RefID 1389

Notes: The Nguni has the shortest calving interval of all beef breeds in South Africa and a likely explanation is natural selection.

Traditionally, both sexes of the Nguni were until recently reared together, with all bulls being kept in tact, up to three or four years of age. The most fertile or sexually early maturing bulls, therefore, served the largest proportion of the females.

Natural selection on fertility was thus allowed full play with a highly fertile breed as result. This explanation is supported by the knowledge that the same hormones control the ovaries and the testes. Hence intense selection for fertility in males will also be effective for females. There is evidence from sheep that highly fertile animals have higher levels of gonadotropic hormones at a young age than lower fertile animals. This in turn, can advance sexual maturity. The idea that selection for early fertility can increase life-time fertility is illustrated with results obtained by a Brahman breeder. For the last decade he mated his heifers at a young age and selected only those that calved early. This practice has led to a dramatic decrease in calving interval and in age at first calving. Besides providing evidence about the efficiency of natural selection, these gains illustrate that the ability of a breeder to identify genetic superior animals accurately and as early as possible can improve selection progress drastically.

Lepen, J.M. & Ramsey, K.A. 1999

Production and reproduction potential of Bartlow Nguni cows older than 14 years.

Paper Unknown : 1-2

RefID 1409

Notes : Eleven 15-year old, seven 16-year old and eight 17-year old Nguni cows (total 26) were evaluated for productivity and reproductive performance on the Bartlow Combine in Northern Kwa-Zulu Natal in order to determine the Nguni's potential for a long productive life and whether this trait could be incorporated into the selection programme for dam-lines. The average calving interval for the three groups was 387,9 days, 392,9 days and 390,8 days. The average 205-day corrected progeny mass progeny was 161,158 and 160 kgs respectively thus supporting the theory that the Nguni cattle have the potential for a long reproductive and productive life.

Lepen, J.M. Schoeman, S.J. & Venter, H.A.W. 1991

Die invloed van voedingspeil op pubertiteitsbereiking by Nguni, Bonsmara en Drakensbergerse.

SA. J. Anim. Science 21 (1) : 43

RefID 831

Notes : The effect of feeding level on puberty development in Nguni, Bonsmara and Drakensberger heifers. The growing interest in the Nguni and the need for reliable data on the breed led firstly to an investigation of puberty development in Nguni, Bonsmara and Drakensberger heifers. Secondly puberty development was also studied in Nguni heifers under extensive conditions. Nguni heifers reached puberty at a highly significant ($P < P.O$) earliest age (349,91 days) and lower mass (238,23 kg) as compared with Drakensberger and Bonsmara heifers. The Drakensberger and Bonsmara heifers : The Drakensberger heifers were slightly younger (407,21 days) and higher (298, 71 kg) than the Bonsmara heifers which were 418, 96 days old and with a mass of 394,39 kg. The Bonsmara, Drakensberger and

Nguni heifers gained 1 080, 870 and 760 g per day, respectively, from weaning to the attainment of puberty. Nguni heifers consumed significantly less feed (326,8 kg) compared to the Drakensberger (780,27 kg) and the Bonsmara heifers (1 151, 27 kg). At puberty the Nguni heifers were the smallest. The Drakensberger and Bonsmara heifers had approximately the same stage of conformational development. The group of Nguni heifers which were under intensive feeding conditions, maintained a highly significant ($P < 0,01$) higher ADG, attained puberty at a highly significant ($P < 0,01$) earlier age (344,51) versus 399, 89 days and on a slightly, though non-significant lower mass (237,27 vs 234,85 kg) than the group under extensive conditions.

Lepen, J.M. Schoeman, S.J. & Venter, H.A.W. 1993
Influence of first calving age and nutrition on the performance of early Nguni heifers.
S-Afr Tydskrif Veek. Vol 23 (5/6) : 204-206
 RefID 1818

Notes : The effect of early mating on the production and reproductive ability of Nguni heifers was investigated. One group (MN group) of heifers ($n = 15$) was stall fed from weaning and mated at approximately 13 months. The second group (CN group) ($n = 30$) was reared on veld and first mated at approximately 15 months of age. Calving percentages of 73,3 and 75,9 were achieved, while the weaning percentages were found to be 66,7 and 69,0 in the two groups, respectively. Reconception rates were 83,3 and 78,3 % for the MN and CN groups, respectively. Body mass of the MN and CN heifers differed significantly ($P < 0,01$) only after calving (268,3 kg v 315,9 kg). Birth and weaning mass of calves did not differ significantly between the two groups. Cow efficiency indices were significantly ($P < 0,05$) higher in the MN group compared to the CN group (2,4 vs 2.0). It was concluded that even with a restricted mating period of 42 days, Nguni heifers could be successfully mated at the age of 13 to 15 months. No dystokia problems were experienced.

Bachmann, D.M. 1999 Highlight of the Nguni Cattle.
Paper (Allerton) All DATA BASE : 1-3
 RefID 1379

Notes : Nguni cattle collectively display the following traits, all of which have considerable potential for economic exploitation. All the traits taken together make Ngunis a unique breed with an important role to fill in the raising of beef in the extensive ranching areas of Southern Africa. Because the breed is young, considerable variation exists between individual cattle. Hence the need for objective selection in herds and the need for performance evaluation of cattle. All the traits that follow have been objectively measured and the claims made here can be objectively quantified from available data relating to the breed and the data collected by numerous ranchers and researchers.

Els, J.F. Bester, F.V. Jessen, P.T. & Reed, E.R. 1999
The Sanga. Namibia : Ministry of Agric, Water and Rural Development.
 RefID 1246

Notes : Sanga is a collective noun for all indigenous cattle breeds of Southern Africa. (Nguni, Pedi, Tuli, Afrikaner and the different

Namibian types) Due to the absence of a suitable name for the indigenous cattle of Namibia, they are in general referred to as Sanga cattle. They have developed in Africa and will in future not be known as *Bos indicus* but as *Bos Taurus afrikanus*, for the cattle breeds of Africa differ from the other types of breeds (*Bos Taurus* vs *Bos indicus*) For many decades the indigenous cattle breeds of Africa were seen as inferior animals due to their small size. Extensionists, scientists and foreign consultants alike promulgated the use of the bigger exotic beef and dual purpose for beef production. This has led to the situation where some indigenous breeds have become extinct. It was only during the past twenty years that scientists began realizing the actual potential of and the role that these small indigenous animals could play in beef production in both the sub-tropics and the semi-arid regions. Contents: Chapter 1. Introduction Chapter 2. Breed Standards of Sanga Cattle Visual Appraisal. Chapter 3. General Management practices. Chapter 4. Diseases in indigenous cattle breeds of Namibia. Chapter 5. Range Management Principal and practises; References.

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Scholtz, M.M. Lombard, P.E. & Enslin, C.B. 1991
A note on the early calving of beef heifers.
S.A. Tydskrif Veekunde, Vol.21 (4) : 206-209
 RefID 420

Notes : The Nguni. The smallest beef breed in S.A. was used to investigate the advantages of mating beef heifers early. A group of 43 heifers was mated at 13-15 months of age, in contrast to the normal practice of mating heifers at 25-27 months of age. No significant differences were found in calving percentage, fecundity percentages or mature cow mass between the two groups. However, there were significant differences in birth mass (24,8 vs 26,0) and weaning mass (156,3 vs 174,4) of the progeny produced by the two groups during the entire experiment. The main reason for the differences in weaning mass seems to be a lower milk production in the early calving group due to reduced udder development. (Informal)

Collins Lusweti, E. 2000
The performance of the Nguni, Afrikaner and Bonsmara cattle breeding developing areas of South Africa.
S.A.J. Anim. Science Vol 30 Supplement 1 : 28-29
RefID 155

Notes: The importance of indigenous livestock rests both in their local availability and abundance. Among the characteristics attributed to the indigenous African cattle, especially tolerance of heat, genetic adaptations to poor quality forages and resistance to pest and diseases. As a result of natural selection, indigenous cattle (Sanga breeds) which evolved in this part of Africa have become adapted to the prevailing conditions and have a most important role in a successful animal agriculture in developing areas in Southern Africa (Maree & Casey, 1993) The paper is a report of a study on the Nguni, Afrikaner and Bonsmara breed performance in developing areas of Southern Africa during the long 1989 -1992 period.

Ramsay, K.A. 1998
Adding value to the Nguni Breed by capitalising on its unique characteristics.
Nguni Publications, Course Given.
RefID 2000

Notes: The future of any breed of farm animals depends on its commercial value and its ability to meet specific needs through sometimes unique traits. Anybody who believes that a breed will survive indefinitely amongst a group of stud breeders is living in a fool's paradise. In recent years, Global animal agriculture has seen the virtual disappearance of a number of early breeds mainly because they were unable to 'compete' with improved breeds and composites. These are being kept going by enthusiasts & conservationists who are aware of the importance of maintaining as much biological diversity as possible who are also aware of the fact that many have often unique traits that are becoming increasingly important in a modern breeding, long-term conservation of farm animals. Genetic resources will depend on any traits that will make a breed an economically viable alternative to more modern breeds and composites.

Reed, D.D. 1999
Comparative study of plasma urea (N) levels in cattle.
Paper All DATA BASE.
RefID 1380

Notes: Nguni cattle seem to have a remarkable ability to utilize poor quality roughage with little or no supplementary feed or lick. Recent studies by Lingington and Osler (1992) of A.D.S.R.I.: Irene have shown that Nguni cattle compared to Brahman and Bonsmara cattle in the Pietersburg area have significantly higher plasma (blood) urea nitrogen levels. See table of results below.

Spickett, A.M. de Klerk, D. Enslin, C.B. & Scholtz, M.M. 1989
Resistance of Nguni, Bonsmara and Hereford cattle to ticks in the bushveld region of S.A. Onderstepoort J. Vet. Res. 56 : 245-250.
RefID 417

Notes : Counts of engorged female ticks on naturally infested cattle over a 2-year period, showed that indigenous Nguni cattle harboured significantly fewer *Amblyomma hebraeum*, *Boophilus decoloratus* and *Hyalomma* spp. during periods of peak abundance than either Bonsmara or Hereford cattle.

Fewer abscesses, associated with tick bite, were also present in the Nguni cattle. Individual tick resistance indices, determined after artificial tick infestation in the field, could not be correlated with hair length, skin thickness or conglutinin titres. The consistently large percentage of Nguni cattle showing high tick resistance according to index determinations indicates a superior level of natural immunity in this breed. The relative incidence of individuals in high, medium and low resistance reflected an increase in resistance with exposure to ticks and the selection within all 3 breeds. (Informal)

Hammond, D. 1999
The pure Nguni.
Refuge for Endangered Species, Big Game Parks, Kingdom of Swaziland.
RefID 372

Notes : Mkhaya Game Reserve. Legend has it that the Swazi Nguni is smaller than other Ngunis because in times of trouble when enemies raided, the Swazis retreated with their herds into caves in the mountains. It is also said that tribal people place greater store on numbers than on size and that because greater numbers of smaller animals could fit into caves these were selected first, leaving the larger animals to take their chances as spoils for the marauding raiders. How valid this is, is questionable because Swazis did their own share of raiding and herd appropriation and there were few adversaries who were able to withstand them. Whatever was the reason it is true that the Swazi cattle are small animals. Perhaps they are purer than others.

Scholtz, M.M. 1999
A Review of some of the Research on Nguni cattle undertaken by the Animal and Dairy Research Institute. Review 1-2
RefID 1406

Notes : The Sanga cattle originally found along the east of Southern Africa are called the Nguni. They are still kept wherever the descendants of the original groups of the Nguni tribe settled (Swaziland, Zululand and Mozambique). The east coast is climatically one of the most trying and disease-ridden cattle areas in Southern Africa. The Ngunis' survival, after many years of exposure to infectious diseases attests of an acquired tolerance to these disease conditions. The calving percentage of the Nguni is normally high and milk production is good. Nguni cattle show a great range of colours

Nguni

and colour patterns. In recent years there has been a revived interest in the Nguni and in August 1983 the Nguni was recognized as a breed under the Livestock Improvement Act (No 25 of 1977). There are about 3 000 Nguni females in a few, relatively well-managed, herds. At present, approximately 35 farmers are interested in the breeding of registered Nguni cattle.

Ramanyimi, N.M. Nesamvuni, A.E. Mulaudzi, J. & Taylor, G.J. 2000

Adaptive and reproductive traits in Nguni type breed under communal conditions.

S.A. Soc. of Animal Science, 25-27 July, 103 : Congress 38, 103-104
RefID 1906

Notes : Fertility is regarded as the most important trait for profitability in the beef enterprise (William et al, 1990) Body condition score (BCS) has been implicated as the most important factor influencing the reproductivity performance of beef cows such as post-partum interval to oestrus (Wegner et al, 1988). Poor BCS is generally associated with reduced conception rates and longer intervals. Furthermore, the condition of breeding cattle has a marked influence on the success at mating

(Nicholson et al, 1987). Scrotal circumference (SC) measurements are associated with testis development, total sperm production and quality (Williams et al, 1991) It is a potentially useful indicator of reproductive potential in beef cattle and therefore plays a role in the breeding soundness examination. The objective of this study was to evaluate the adaptive and reproductive traits of beef cattle under communal management conditions.

Casey, N.H. Swanepoel, J. De Bruyn, J.F. & Naude, R.T. 1990.
Meat Studies of Southern Africa cattle. LI. Textural evaluation of ribcut samples from carcasses of Afrikaner, Nguni and Pedi bulls fed intensively.

Suid Afrikaanse Tydskrif Veekunde 20(4):188
RefID 827

Notes: Textural evaluations were conducted on the longissimus thoracis muscles from carcasses of young Afrikaner, Nguni and Pedi bulls fed extensively and slaughtered at 160, 290, 340 and 390 kg. Carcasses were stimulated electrically (500 V, 12,5 Hz) for 2 min and chilled for 19h at 0 - 5 degrees C. Ribcut samples (11, 12 AND 13th ribcut) were removed 24h post slaughter and evaluated by a taste panel for tenderness, juiciness, flavour and residue on an unstructured five point scale, ranging from least to most acceptable. Shear tests were performed on an Instron apparatus. Percentage cooking loss and free water were measured. The Afrikaner was found to be slightly more tender and flavoursome with less residue than the Nguni ($P < 0,10$). The Pedi did not differ from the Afrikaner or the Nguni. No breed differences occurred in juiciness, cooking loss, free water or shear force. Mass affected juiciness ($P < 0,05$), residue ($P < 0,01$) and free water ($P < 0,01$). Shear force correlated highly with tenderness (- 0,61**) and residue (, 74 **). Juiciness correlated negatively with percentage cooking loss (- 0,57**), though poorly with percentage free water (0,28). Compared with published results of textural evaluation of steer meat, the meat from the young Afrikaner, Nguni and Pedi bulls fell into a superior category.

Reyneke, J. Joubert, D.M. & Bonsma, J.C. 1963
Aspekte van groei en voortplanting by Nguni beeste.

Proc.S-Afr.Soc.Anim Prod., 107-110

RefID 1499

Notes: Ofskoon heelwat basiese inligting reeds verkry is oor die inheemse Afrikanerbees, is betreklik min aandag gewy aan 'n studie van Ngunis. Nguni beeste word aangetref in 'n wydverspreide gebied wat hoofsaaklik die oostelike dele vd Laeveld insluit. Vir verder besonderhede oor die streek en die verspreiding van die ras Bonsma et al (1951) en Brown (1959). Ofskoon Faulkner (1947) Barnard (1951) en Bonsma et. al (1951) die Nguni reeds goed beskryf en die geskiedenis van d ras deur Brown (1959) behandel is, bestaan daar 'n bepaalde leemte t.o.v. eienskappe soos geboortegewig, speengewig, volwasse gewig en dragtigheidsduur. Die doel van hierdie ondersoek was meer bepaald om inligting oor die Nguni-ras te bekom en om die gegewens met die Afrikanerras te vergelyk. Die data is verkry van die Nguni-kudde wat sedert 1949 op die Messina proefplaas aangehou word onder veldbeesplaastoestande. Die proefplaas is geleë op die 22 grade 16' suiderbreedte en op die 29 grade 54' lengtegraad met 'n gemiddelde jaarlikse temperatuur van 22,1 grade C en 'n gemiddelde reënval van 320 mm. Nadere inligting word verstrek deur Bonsma, van Marle & Hofmeyr (1953)

Brown, D.L. 1960 The Nguni breed of cattle. II.
Mortality, grazing behaviour and beef production.
Empire Journal of Experimented Agriculture 28, No 109: 44 -52
RefID 176

Notes : Mortality. Of all calf deaths at Mpisi (1946 - 1950), most were caused by heartwater, 'poverty', and sweating sickness, followed by plant poisoning, pneumonia, snake-bites and redwater. Nguni calf mortality was approximately 7% of all births. Of a total of 1000 Ngunis at Mpisi, 8,1% died compared with 13,8% of a total of 94 crossbreds. Grazing behavior. Animal behaviour observations were conducted on five cows (with calves) each on a different day, and on a group of four cows (and calves) for periods varying from 7 - 11 hours. A sense of smell appears to play a part in grazing and an apparent selectivity was noticed while grazing in long grass. No relationship between wind direction and grazing direction was apparent.

Whether there was a large or small group of cows, the individuals comprising the group would remain in close proximity. Defecation and urination in watering places was noticeable especially when temperature was over 80 degrees F. Suckling ensued once daily while in the camp and maternal affection is strong. It is concluded that with not less than four cows and their calves a herd-grazing pattern is manifest. Water consumption per cow and calf varied from 3 and a half gallons (overcast max. atmospheric temp 68 degrees F) to 5 gallons daily (max atmospheric temperature 82,5 degrees F.) Beef production. Seventy five Nguni oxen were sent to Johannesburg for slaughter. Forty eight of the carcasses were graded as Prima, twenty six as grade 1 and one as Super. The grader's reports indicated that the cattle lacked fullness in the hindquarters and were deficient in fleshing qualities in the forequarters. It is concluded that these characteristics are primarily attributable to the genotype rather than the environment and that a breeding policy with selection for beef quality and early maturity, coupled with improvement in grazing management and watering. Nguni oxen could be marketed at under 4 years old and still obtain the better grades. But in the native areas the chief limiting factor is

adequate provision of nutrients and water and the level to which the beef potential of the oxen can be usefully raised by breeding is determined by the degree of improvement in feeding and management.

Scholtz, M.M. & de Bruin, D.S. 1998
Statistics of the Nguni herd at Loskop.
Nguni Publications, Course Given : 12
 RefID 1998

Notes : Mass Growth Rate (average 3 years). 140-Day feedlot test at Irene. Calving interval and sex ratio. Preliminary results on milk production and composition. Loskop-Suid Nguni Herd. All research has been conducted on the farm Loskop-Suid (25 degrees 18' 29 degrees E) situated in a bushveld region, south-east of Groblersdal, in the Province of Mpumahlanga. Acocks (1975) classified the veld type as a tree savannah consisting of fairly dense bush with sour grass types as the main grazing component. Rainfall varies between 350mm and 650mm per year.

Nesamvuni, A.E. Mulaudzi, J. Ramanyimi, N.D. & Taylor, G.J. 2000.
Estimation of body weight in Nguni-type cattle under communal management conditions.
S.A. Soc. Of Animal Science 25 27 July : Congress 38, 11-14.
 RefID 1898

Notes : Body measurements of beef cattle are used for several purposes, including prediction of growth rate, body condition,

conformation and carcass traits. (Brown et al. 1973 Gosey, 1984 Doren et al 1989, Wilson et al)

Though, live weight (LW) is an important economic trait in beef cattle, it is seldom measured in rural areas due to lack of scales. This is despite the frequent marketing of animals occurring in the villages. Bhadula et al (1979) indicated that the best method of weighing animals occurring without a scale is to regress LW on certain body measurements that can be measured readily. The objective of this study was to derive prediction equations for LW and scrotal circumference (SC) using heart girth (HG) and wither (WH). Material and methods : Various body measurements were collected from predominately Nguni-type cattle at Muledzhi Dipping Tank located 50 km north of Thohoyandou. Data was collected from September to December 1999. A total of 879 animals were measured constituting, 862 LW, 725 HG, 732 WH, 763 condition scores (CS) and 140 SC. Correlation co-efficients between LW and other body measurements were determined within sex, age and months groups. Regression of LW and SC on each of the independent variables sex, age and months groups, regression of LW and SC on each of the independent variables was performed using the regression procedure of SAS (1989). Linear, quadric and cubic effects of the independent variables were considered. Also, LW and SC were regressed to the contamination of HG and WH.

Nguni Clubs

Seated l.t.r
Archie du Plessis
- Central
Marli Stegman
- Northern
Giel van Niekerk
- KwaZulu

t.l.t.r
Vernon Sparks
Eastern Cape
Trenly Spence
- Karoo
Clive Biggs
- A.Z.A.
Herman Nel
- Highveld

