NGUNI®
Beestelersgenootskap
Cattle Breeders' Society

A WORD FROM OSWALD

PRESIDENT: NGUNI CATTLE BREEDERS' SOCIETY

15 March 2022

Dear Nguni partner,

For quite some time now there has been a difference of opinion within the Nguni community about whether Mashona cattle is an ecotype of Nguni or a separate breed. This resulted in the public questioning whether the Mashona is classified as a pure Nguni. To some people, it appeared that the Nguni Cattle Breeders' Society does not accept Mashona as part of the Nguni breed.

However, the Society has never made a statement like this, as far as we could determine.

To address the issue, the Council decided to conduct a restricted genomic study on the relationship between the Nguni and the Mashona. The results were fascinating. And definitive: the Mashona is an integral part of the Nguni breed.

We believe that the Nguni breed, the Mashona ecotype, and the breeders of these animals will greatly benefit from the results of the genomic study conducted by Dr. Bobbie van der Westhuizen and his team from the genetic and advisory services of SA Studbook.

This study investigated the Mashona breed at a genomic level to determine where the breed clusters when compared to the Nguni breed as well as other Sanga-type breeds (Mashona is categorised as a Sanga-type breed). Three different scenarios were analysed:

- First, the gene pools of 10 Mashona genotypes and 381 Nguni genotypes were compared using the Geneseek Genomic Profiler (GGP) array.
- In the second study, the gene pools of three other Sanga-type breeds were added to the study – 2,604 genotypes were analysed.
- For the final scenario, the Zebu-indicus breed was added to the study, resulting in the analysis of 3,062 genotypes.

In each scenario, researchers found that the Nguni and Mashona genotypes clearly clustered together. The fact that the two animals do not cluster separately is a clear indication that they share similar genetic makeup. What's more, neither of these breeds' gene pools clustered this closely with the other breeds investigated; this shows that while Nguni and Mashona share their ancestry with Sanga breeds, the genomes are closer related to each other than to the Zebu and other Sanga breeds analysed in this study.

This led to the conclusion that the Mashona is indeed an ecotype of Nguni and not an individual breed, as clearly illustrated in the below graphs.

Figures 1 & 2: Scenario 1 of only Mashona (black dots) and Nguni (light blue dots) breeds

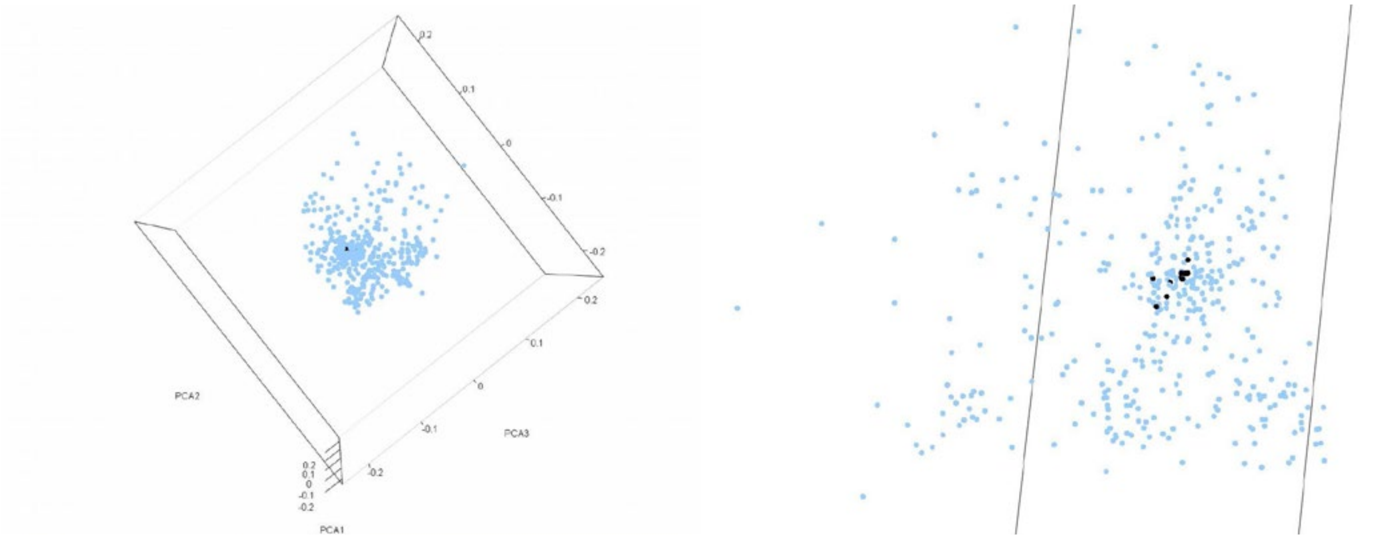


Figure 3: Clusters described in Scenario 2 (Sanga 1: green; Sanga 2: orange; Sange 3: red; Nguni: light blue; Mashona: black)

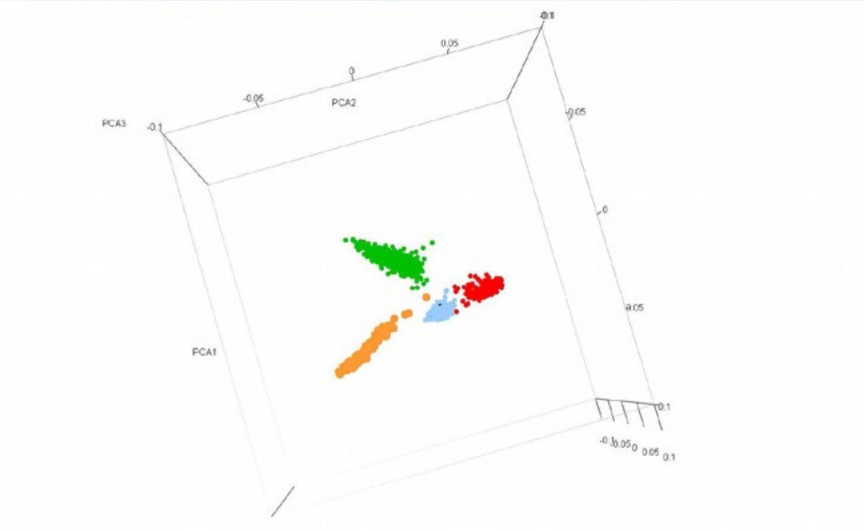
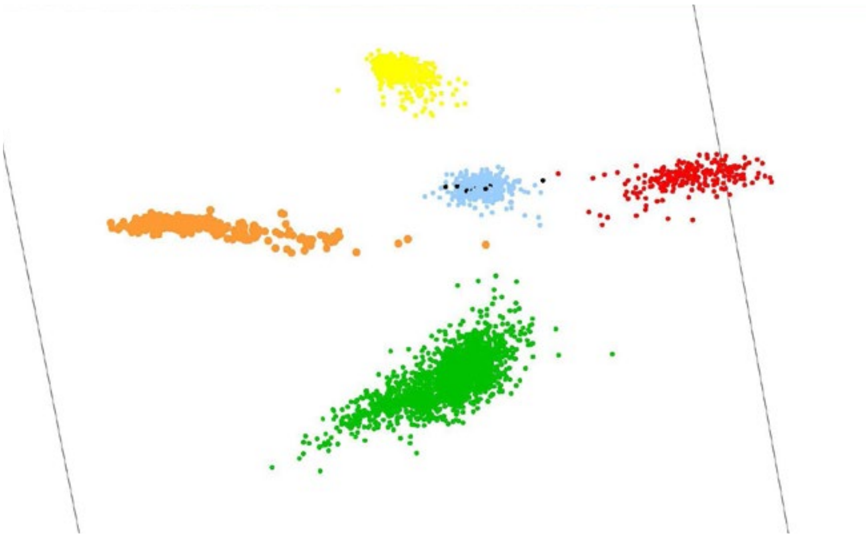


Figure 4: Scenario 3; colours represent the same breeds as in Figure 3, with the addition of the Zebu gene pool in yellow



Therefore, today, we would like to announce that the Nguni Cattle Breeders' Society accepts the Mashona ecotype as an integral part of the Nguni breed. As this is now our official policy and position, we sincerely apologize to any breeders affected if at any point council members of the Nguni Breeders' Society spread news to the contrary.

A detailed record of the study and its results is attached for further perusal.

I am excited to hear our fellow breeders' insights on this study and to see how it will impact Nguni cattle breeding in South Africa.

Regards,
Oswald Jannasch

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