

## *CHAPTER 5*

# *CONCLUSIONS*



## CONCLUSION

### 5.1. Genetic variation and differentiation in the Africanis breed

The first aim of this study was to determine the genetic variation in the endemic Africanis breed and this variation was shown to differ significantly ( $P < 0.05$ ) from levels present in other dogs used in this study (see Chapter 4 – *Discussion*). Furthermore, the genetic diversity in the Africanis dogs was demonstrated to be different from those of the more common, Western dogs breeds. The Africanis and Saluqi breeds exhibited the lowest genetic diversity compared to the other mixed groups studied (SPCA and Jericho), as can be deduced from the low **H** and **P** values for these two populations. Average heterozygosities varied from 0.106 (Africanis population) to 0.159 (Jericho group), with an average value of 0.130 for all the populations analysed in the present study (Table 5). The Africanis breed has the lowest **H** value, which, interestingly enough, is also the closest to reported values for natural populations of other families of Carnivora (e.g. Allendorf *et al.*, 1979; Hamilton and Kennedy, 1987; Manlove *et al.*, 1980; Simonsen, 1982; Wathen *et al.*, 1985). As explained earlier (see Chapter 4 - *Discussion*), this has been interpreted as a genetic characteristic probably derived from the Africanis' rural, almost natural lifestyle, which has implications for the conservation of these animals.

The higher **H** values exhibited in the SPCA and Jericho groups is indicative of a higher level of genetic diversity, which is expected as these groups represent mixed breed populations where one would find more diversity.

The loci **AK-1**, **-2**, **Hb** and **P-Tf** can be used to define the present groups studied, as significant ( $P < 0.05$ ) genotypic differences were detected with pair-wise comparisons (Table 4). Apart from the fact that only Africanis showed the presence of alleles **CK\*B** and **PA-2\*C**, which, granted, could be attributed to the relatively small sample size of some of the other populations (see Chapter 4 - *Discussion*), this breed also exhibited a possible distinctiveness at the **P-Tf** locus. The allele combination A-C was found in much larger numbers here than in any of the other groups. All of this is indicative of a unique breed, however subtle the differences may be.

It was evident that the Africanis breed and Saluqis share similar genetic characteristics, when comparing the genetic variation and differentiation levels between these two breeds. This similarity not only suggests a close relationship between the breeds, but also gives insight into the origin and development of the Africanis breed. The hypothesis that this endemic African dog breed originated from the Middle East when trading between the African continent and the Middle East introduced these dogs to Africa, is therefore now not only supported by archaeological evidence, but also by this genetic data.

## **5.2. Implications for conservation of the Africanis dogs**

The Rhodesian Ridgeback was the only dog breed from southern Africa that enjoyed the registered recognition from the Kennel Union of South Africa (KUSA) up until recently. It is therefore important to protect and preserve the Africanis breed by starting

conservation and registration programmes in association with the KUSA and other interested parties. This has been done with the formation of a conservation society, specifically set up to protect the identity and expand public awareness of this endemic southern African breed. This group, “The Africanis Society of southern Africa”, was initiated by Johan Gallant, Dr. Udo Küsel (archaeologist and previous director of the National Cultural History Museum) and other interested parties and inaugurated on the 11<sup>th</sup> of October 1998. These dogs are now registered and the breed name has been assigned as “Africanis”. The objectives of the society are stipulated as follows:

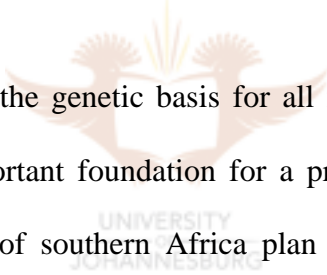
- a) to promote the well-being of the early domesticated dogs of southern Africa;
- b) to foster and encourage the study of these dogs and develop a body of knowledge about them; and
- c) to conserve these dogs by promoting the breeding and rearing of the dogs in keeping with the standards, guidelines and code of ethics as determined by the society.



The society is controlled and run by its management committee and membership to the society is open to individuals and organisations. The management committee is in control of approving the standards for the Africanis breed and lay down the requirements for registration. This committee is responsible for the registration of dogs and also oversees and encourages owners of Africanis to let natural breeding take place, i.e. have minimal or no interference from humans when it comes to mating. The females should have the choice of mating partner and although these mates can be “planned” by the

owners, no forced mating is allowed by keeping the two prospective parents together in isolation.

Since the foundation of the society in October 1998, it has grown considerably. The first registration and selection of these dogs for breeding purposes was held at the Willem Prinsloo Agricultural Museum, outside Pretoria. Here 18 animals were selected and the first litter made its appearance in the following winter. The sales of these dogs went fairly well and they seemed to be a favoured breed, especially amongst farmers and game reserve owners, mainly due to their rugged nature and ability to deal well with problem animals.



This study can be used as the genetic basis for all future studies pertaining to this breed and is therefore an important foundation for a proposed “blood bank” for these dogs. The Africanis Society of southern Africa plan to have a blood sample of all registered members of this Africanis breed, primarily for identification purposes, but also for possible breeding analyses.

Although the Kennel Union of South Africa has already acknowledged the Africanis breed as an individual, unique breed and has thereby given it the recognition of a registered breed, this study supports and confirms their action. Apart from behavioural studies done on these dogs by Johan Gallant for the past 15 years or so, the genetic information gained from this study will also help in supporting the individuality of this breed.

