

Chapter 8

Genetic Improvement of Local Goats

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Abstract Genetic improvement of domestic animals through selection of the breeding stock, including small ruminants like goats, has been acknowledged as a powerful tool. It has been used by mankind for the supply of the most varied products, and for increasing productivity and global yields. During the next decades, genetic improvement of goat populations can be a key factor for livestock in extreme conditions, being resistant to conditions resulting from climate change, and diseases, and providing good quality products in many regions of the globe. In a general program of genetic improvement and selection of goats, it will be fundamental to monitor the genetic progress and make the right choices of future breeders to achieve the genetic improvement of a herd. A selection plan should have well-defined improvement objectives, which will obviously differ according to whether the systems are for producing goat meat, dairy, dual purpose, or other more specific products (e.g., wool). Techniques and methodologies of selection have evolved at a remarkable rate, from individual selection to best linear unbiased prediction (BLUP) and genomics, allowing us to obtain ever more efficient and precise results when we combine different methodologies and information sources. The aim of this chapter is to present and discuss the breeding goals and selection strategies used in genetic improvement programs of goat populations and local breeds.

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