
Senegal Dairy Genetics

Karen Marshall¹, Stanly Tebug¹, Jane Poole¹, Isabelle Baltenweck¹, Miika Tapio², Jarmo Juga³, Ayao Missohou⁴

¹International Livestock research Institute (ILRI), P. O. Box 30709 Nairobi 00100, Kenya

²MTT Agrifood Research Finland, Biotechnology and Food Research, Jokioinen FI-31600, Finland

³Department of Agricultural Sciences, University of Helsinki, P.O. Box 28, 00014 Helsinki, Finland

⁴Inter-state School of Veterinary Science and Medicine of Dakar (EISMV), P.O. Box 5077, Dakar (Fann), Senegal E-mail: k.marshall@cgiar.org

Abstract

The FoodAfrica work-package Senegal Dairy Genetics aims to improve the productivity and profitability of small to medium scale dairy enterprises in Senegal, leading to improved food and nutrition security, enhanced livelihoods, and a more sustained environment. In addition, the project aims to build the capacity of various stakeholders in dairy, including young researchers, dairy-farmers, service providers, extension agents, educators, and policy-makers. The work-package is a collaboration between four research institutions based in Senegal, Finland and Kenya (the Interstate School of Veterinary Science and Medicine of Dakar, The University of Helsinki, AgriFood Research Finland, and the International Livestock Research Institute), and has involved students from a number of West and Central African countries, as well as Finland.

The particular focus of Senegal Dairy Genetics is to examine the trade-offs, in terms of both benefits and costs, of keeping different breeds or cross-breeds of dairy animals. These include indigenous breeds, such as Zebu Gobra and Zebu Maure, which have been raised by Senegalese livestock keepers over the centuries and are well adapted to the harsh environmental conditions, and crosses of these with newly introduced breeds, such as the Guzerat, Montbelliard and Holstein-Freisian, which produce more milk but require additional inputs in terms of health-care, feed and labour to survive and produce. To examine these trade-offs, Senegal Dairy Genetics has partnered with 239 dairy farming

households located in two sites in Senegal. These households range from the very traditional (such as those from the Fulani ethnic group) to the more innovative, and together keep more than 3500 dairy animals of numerous breed and cross-breed types. Productivity and economic information on these dairy animals is being collected over an 18 month monitoring period, resulting in an extremely valuable and unique database on dairy in Senegal. In addition, the breed-type of the animals will be determined using advanced DNA based approaches, ensuring this information is accurately known in the absence of recorded pedigree. On completion of the data collection period, the data will be analysed with feedback on the benefits and costs of keeping different breeds or cross-breeds of dairy animals disseminated to a broad range of stakeholders, resulting in enhanced capacity and better decision-making on this key issue. Further, Senegal Dairy Genetics is working towards ensuring farmers can better access the dairy breed-types of their choice, by building the capacity of local stakeholders to strengthen the dairy germplasm supply system.

Keywords:

Dairy cattle, Senegal, breed, genetics, food and nutrition security, capacity