



Management of local genetic resources by in situ and ex situ methods for research and breeding purpose: the case study of the local Creole goat of Guadeloupe

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Management of local genetic resources by *in situ* and *ex situ* methods for research and breeding purpose: the case study of the local Creole goat of Guadeloupe. *M.J. Naves*, Arquet R., Farant A., Quenais F.X., Alexandre G., Mandonnet N. INRA UR 143 Unité de Recherches Zootechniques, Antilles-Guyane, Duclos, 97170 Petit Bourg, Guadeloupe. Email: michel.naves@antilles.inra.fr

Very few studies are implemented towards the management of local genetic resources specifically in the tropics, although there is an urgent need for preservation and breeding improvement of these hardy genotypes. The Creole goat of Guadeloupe derives from Spanish and African goats, imported in the Caribbean during the history. This breed is of great interest for research and breeding purpose, as it obtains a high productivity and presents a natural genetic variability for resistance to gastrointestinal strongyles.

In Guadeloupe, INRA is conducting researches on the characterisation and preservation of this breed. Their purpose is mainly a better understanding of the immune response of the animal to the parasites, and the implementation of a sound genetic improvement program for both production and adaptation traits.

An experimental flock of about 250 goats (1000 heads), constituted in the 70', is managed as a closed nucleus herd, in 12 families, and the complete genealogy is known on about 12 generations on average. The mean inbreeding coefficient is about 2.3 %, and breeding is rationally performed to maintain the consanguinity at a level lower than 3 %.

Cryopreservation is also implemented. A total of 256 freezed embryos from 16 donors are stored by the French National Cryobank, and 2800 doses of semen from 36 bucks are stored in local facilities. A biological resource centre has also been equipped in order to conserve biological material from the local breeds of ruminants and pig.

Genetic researches are also conducted, and a collection of DNA and other biological samples (blood, cells and tissues) has been initiated for molecular genetics studies. 6500 samples are currently stored in december 2009, with an increment of 800 samples per year. A set of 70 animals representative of the diversity have been characterised for a panel of microsatellites. Other genetic studies are undertaken, as the research of QTL for production and adaptation traits, by microsatellites or SNP analysis within 10 halfsibs family.

Through these activities, combining *in situ* and *ex situ* methods for research and breeding purpose, INRA is highly committed in the characterization, preservation and improvement of a local genetic resources valuable for the humid tropics.