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“Development on the margin”

An Assessment of Genetic Potential of Vietnamese Local Pig Breeds for Sustainable Use of Pig Genetic Resources in Vietnam

NGO THI KIM CUC

National Institute of Animal Science, Animal Breeding and Genetics Department, Vietnam

Abstract

In Vietnam, national programs on conservation of the Vietnamese local animal genetic resources have been initiated since 1990. Thanks to these programs, many local breeds are being conserved and developed. Local pigs are the country's most important meat source and play an integral role in the smallholder farming systems. There are 12 Vietnamese local pig breeds (<http://dad.fao.org>) which are kept throughout the country from the North to the South. They present a high diversity of phenotypes. They are assumed to be adapted with the local harsh environment and their meat is tasty. However, research on genomic variation and major genes with relevance to their special traits is limited. Beside phenotypic characterisation, assessment of genetic characterisation of Vietnamese local pig breeds is a prerequisite for the purpose of sustainable use of animal genetic resources. Following the national animal genetic resources conservation programs, Vietnamese government has funded a project to assess genetic potential of Vietnamese local pig breeds. Three traits (growth, litter size and meat quality) of local pigs will be analysed at both levels which are an evaluation of genetic parameters and an analyse of candidate genes. Modern animal breeding and selection which is based on genetic evaluation using Henderson's Mixed Model Methodology (MMM) to estimate the estimated breeding value of the individual will be used. Three genes of topituitary-specific transcription factor⁻¹, myogenin and gene heart fatty acid BP related to growth rate, two genes of estrogen receptor and prolactin receptor linked to litter size, and two genes of Halothan and Rendement Napole connected to meat quality will be determined. This comprehensive study combining two methods will provide valuable information for sustainable conservation, use and exploitation decisions of Vietnamese local pig genetic resources.

Keywords: Genetic potential, Vietnam, vietnamese local pig