



CONSERVATION AND ENHANCED UTILIZATION OF CHICKEN GENETIC RESOURCES IN EUROPE: INITIATIVES AND PERSPECTIVES

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Conservation initiatives and enhanced utilization of chicken genetic resources are reviewed to understand the importance of introducing conservation programmes in Europe. An inventory of chicken genetic resources based on published information pertaining to evaluation of some performance and genetic parameters is presented (Larivière and Leroy, 2009). Initiatives on molecular characterization and genetic diversity of chicken populations are summarized. Current strategies for genetic management of small populations to limit undesired effects of inbreeding are proposed. Factors considered in establishing cryobanks in Europe, the management of sanitary practices and current techniques in the cryopreservation of semen are discussed.

An extended inventory to date of traditional breeds, according to various sources of 34 countries, would reveal the existence of 238 different breeds. An important variability in performance and genetic parameters has been reported. Production performance varied greatly, generally showing a slow growth with high feed conversion ratio and moderate carcass yield. Reproductive performance varied considerably in egg output, fertility and hatchability. Some breeds have shown specific resistance to diseases and variable levels of fearfulness or stress. Estimated heritability values were high for body weight and egg weight, moderate for egg production and low to moderate for reproductive traits. Diversity studies have shown traditional breeds to have low to extremely high polymorphism levels. Semen from extreme genotypes and rare traditional breeds are preserved by few operating cryobanks. Other techniques applied for the cryopreservation of blastodisc and primordial germ cells present a potential use for the future.

In addition, perspectives are offered by exceptional features of some traditional breeds through their uniqueness and originality. These perspectives for enhancing the utilization of traditional breeds include: opportunity for research, socio-economic values, opportunity to respond to future market demands, economic enhancement, steps in qualification, regulation and protection of products, cultural and historical aspects. Disseminating information and providing an open and flexible framework to discuss scientific and technological aspects could result in a European-wide agreement to build a strategy for conservation of chicken genetic resources. The project could have a major impact on the preservation of European chicken genetic diversity, benefit both the scientific and industry communities, and provide tools for long-term coordination of poultry genetic resources.

Keywords: conservation, cryopreservation, chicken genetic diversity, initiatives, perspectives

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