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Short Communication**Biotechnology in the Poultry Breeding and Farming****Peter C. Wynn***Department of Biotechnology & Animal Sciences, Centre Medical Universitaire, Geneva, Switzerland***ARTICLE INFO***Article history:*

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ABSTRACT

Since the 1990s, molecular genetics has infused improvements in poultry breeding. Though, the world has consumed egg and meat for substantial time now, it was not until 1992 that the world saw an accelerated consumption of eggs and meat.

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According to sources from the World Poultry Trends, nearly 85 million tonnes of meat and eggs were consumed in 1992 and in 2000, the consumption rate increased to 117 million tonnes. The dawn of 21st century saw improvement in the genetic performance of birds. Chicken accounts for nearly 85 percent of the overall poultry meat production with turkey at 7 percent and duck at 4 percent. Breeding Generations Before the 20th century, there were no known popular poultry breeding methods. But by the beginning of the 20th century scientists was able to find many technologies to breed meat poultry. Today, meat broilers are a cross of threeway or fourway pure breeding lines. There are four phases between the pure breeding line and the final meat broiler. The first phase, also called first generation, is the pure breeding line. Each poultry breeding company has many broiler products to maintain at least nine to ten pure breeding lines. The second phase or generation is the great grandparent stock. This function is under the total control of the poultry breeding company. This generation multiplies pure lines in large numbers required to produce the great grandparent stock. The

third generation is the grandparent stock. This generation offers the first crossbreeding generation with A males and C males with B females and D females making the total grandparent flocks. These flocks are later distributed to numerous local facilities that produce or distribute parent stock. The fourth generation is the parent stock. This generation is responsible for the second generation of hybrid crossbreeding where AB males mate with CD females. Parent stocks are usually owned by the broiler production companies. The last generation is broilers. These birds are grown and processed for large scale production of chicken meat. Breeding Technologies are three known breeding technologies namely reproduction, breeding value evaluation, and DNA based. Reproduction technologies involve cloning, i.e., increase in reproductive capacity, by multiplication. The DNA based technology is the most innovative and promising among the three technologies. This is due to the advancement in chicken genomics that has relatively enhanced DNA genotyping. The impact of this technology is huge on chicken genomics since it makes the trait selection easy unlike the traditional genetic evaluation technology.

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Additionally, the DNA based technology also offers a new dimension in poultry meat breeding. Potential of Poultry Farming Poultry performance in the last five decades has been huge. As per data, egg production per hen rose from 176 in 1925 to 309 in 1998. As for meat production days, half kilogram live weight decreased from 120 days in 1925 to 33 days in 1998. There are three parameters deciding the meat output namely: growth, feed conversion and the effectiveness of the breed. Since the early 1990s, meat production per breeder has grown dominant thereby indicating growth in terms of reproduction and growth. The improvement in both basic and applied poultry science has immensely contributed to biomedicines. Chicken breeds have provided a wide array of selection opportunity for various purposes. The only remaining challenge is the conservation of the genetic reservoirs for the existing poultry populations that are required for future research and poultry meat production needs. Genetic variants in poultry species such as goose, turkey and chicken have a worldwide distribution. The primary objective of maintaining animal genetic resources is for the conservation of the ever changing needs of human and animal production. The present genetic reservoir forms the base for all future economic, environmental, socio-cultural, and scientific opportunities. Future of Poultry Meat Breeding Apart from serving as a great resource for biological study modern meat production stocks, especially chicken meat, contribute largely to the worldwide production of meats and eggs. Farm birds belonging to the elite lines are selected based on their performing traits to create either the grandparent lines or parent lines that create poultry meat populations for world market. To achieve better performance in the growth of the broilers and egg production requires a controlled and a stable environment, which the 20 th century seems to offer in abundance. Though certain concerns are raised poultry meat breeding has touched new heights.
