

The biodiversity of local poultry breeds: characterisation of two Tuscany breeds to save them from extinction

F. Mannelli¹, I. Galigani¹, L. Versino¹, M. Biagi Arroyo¹, L. Fantechi¹, M. Daglio¹

¹ Università degli Studi di Firenze, Dipartimento di Scienze e Tecnologie Agrarie, Alimentari, Ambientali e Forestali (DAGRI), Piazzale delle Cascine, 18, 50144 Florence, Italy

The safeguarding and valorization of local poultry breeds may contribute to the sustainability of animal production. The characterization of morphological and productive traits is the preliminary step for the preservation of biodiversity and utilization of marginal lands. The Mugellese chicken is a dwarf breed with a medium neck, broad shoulders, long and horizontal wings, wide, and well-developed breast (especially in the hen) with a typical brooding capacity. On the contrary, the Valdarnese Bianca breed is considered the only original Italian meat-type breed of the national genetic heritage with a long neck, broad shoulders, long and horizontal wings, and long legs and shanks. Both these breeds show frugality, resilience, and resistance to diseases and are particularly suitable for free-range farming. Throughout a 1-year observation, the Mugellese and Valdarnese bianca breeds were characterized for morphological, productive, and reproductive traits and at the end of the trial, for caecal microbial community profile. Data confirmed the morphology of both breeds and their good egg production and growth performances. The main characteristic traits detected were: egg deposition for Mugellese that lay 65.75% of the egg during March–April and the remaining 51.86% in August–September; and growth performance for Valdarnese Bianca that showed a final weight of 1911.33 ± 231.44 g with a feed conversion ratio of 5.62 ± 0.24 . The characterization of the caecal microbial community by high-throughput sequencing of the 16S rRNA gene suggested that the composition of gut microbiota is different in the two breeds.