

広島大学大学院統合生命科学研究科

学位論文発表会

Doctoral Dissertation Defense (Presentation)

February 14th (Monday), 2022 14:00-15:00

MS Teams online: URL information is below

Jade Dhapnee Zarate Compendio

(Program of Food and AgriLife Science)

Morphological and phylogenetic studies on the genetic diversity and origin of Philippine red junglefowl

(フィリピンにおけるセキショクヤケイの遺伝的多様性およびその起源に関する形態学的かつ分子系統学的研究)

Red junglefowl (RJF) is considered as the ancestor of today's domestic chickens. Although RJFs still exist in the Philippines (PH), their morphology, possible maternal origin, genetic diversity, and evolutionary relationship with the RJFs from other Asian countries remains uncertain. Thus, an in-depth morphology and molecular study utilizing the mitochondrial DNA (mtDNA) was conducted.



Shank color, eclipse plumage, spur length and body length were identified as important RJF identification indices. In contrast to previous findings, the genetic analysis result of this study suggested that earlobe color should not be used for subspecies identification. The phylogenetic analysis of this study revealed multiple maternal origins of the PH RJFs based on its haplotype sharing with the domestic chickens from China, Laos, India. The close evolutionary relationship of the Philippine and Indonesian RJFs was also elucidated. Though PH RJFs were confirmed to be of wild chicken ancestry, its haplotype sharing with the commercial chicken is of biodiversity concern.

Furthermore, this study highlights the genomic advantage of mtDNA in determining the matrilineal ancestry and phylogenetic diversity of PH RJFs as a basis in biodiversity conservation, leading to the sustainability of life of land (SDG 15).



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