

Genomic regions associated with adaptive and productive traits in Tibetan and Poll Dorset sheep

Project Title: P725 - Activity 1.1.1: Livestock Landscape Genetics

Description of the innovation: Via genomic studies on Tibetan (White Tibetan Oula) and Poll Dorset sheep, selection signatures relating to hypoxia responses, meat traits, disease resistance and coat colour were identified. Quantification of blood physiological parameters also revealed higher levels of mean corpuscular hemoglobin measurement and mean corpuscular hemoglobin concentration in Tibetan than Poll Dorset sheep, suggesting a greater oxygen-carrying capacity and adaptation to high-altitude hypoxia in the Tibetan sheep.

New Innovation: Yes

Stage of innovation: Stage 1: discovery/proof of concept (PC - end of research phase)

Innovation type: Genetic (varieties and breeds)

Geographic Scope: Regional

Number of individual improved lines/varieties: 1

Region:

- Asia

Description of Stage reached: The identification of genome-wide selection signatures can provide insights on the mechanisms of natural and/or artificial selection and uncover genes related to biological functions and/or phenotypes. The research provides a greater understanding of genome diversity and variations associated with adaptive and production traits in sheep.

Name of lead organization/entity to take innovation to this stage: CAAS - Chinese Academy of Agricultural Sciences

Names of top five contributing organizations/entities to this stage:

- ICARDA - International Center for Agricultural Research in the Dry Areas
- CAAS - Chinese Academy of Agricultural Sciences
- ILRI - International Livestock Research Institute

Milestones: No milestones associated

Sub-IDs:

- 12 - Increased conservation and use of genetic resources

Contributing Centers/PPA partners:

- ICARDA - International Center for Agricultural Research in the Dry Areas
- ILRI - International Livestock Research Institute

Evidence link:

Deliverables associated:

- D32098 - Genome-wide comparative analyses reveal selection signatures underlying adaptation and production in Tibetan and Poll Dorset sheep (<https://cgspace.cgiar.org/handle/10568/114369>)

Contributing CRPs/Platforms:

- Livestock - Livestock