

The role of Rumen and Intestine's Microbes in the environmental resilience of the Xizang sheep and goats: A comprehensive review

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Abstract

The Xizang plateau (Tibetan Region) is a world-class biogeographic area with diverse landscapes, altitudinal bands, and mountainous habitats as well as a vulnerable home to a diverse range of rare species. The Xizang sheep and goats can withstand the harsh climate due to the presence of rumen and intestine microbes. This study focuses on the unique symbiotic relationship of the host with the bacteria, revealing a complicated network of microbial communities as well as the crucial functions that rumen and intestine microorganisms play in the host's survival. Important factors such as environment and host genetics which impact the composition of gut microbiota have been hot topics of research recently because microbial ecology drives rumen and intestine development. In this review, the role of omics technology in understanding the mysteries of the microbiome and addressing environmental challenges is also discussed in detail. Moreover, the analysis concludes that focusing on the microorganisms that reside inside ruminants can guide sustainable practices, and nutrient usage management, and boost resilience in a variety of ecological contexts. This study comprehensively highlights the significance of the microbes in the rumen and intestine of the Xizang sheep and goats in environmental resilience.

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