

Effects of cassava byproducts in total mixed ration on feed intake and rumen fermentation in native cattle

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Problem statement

Livestock production systems in Cambodia play an important role in agricultural sector; however, it remains largely traditional (Morm et al., 2025a; McKinley et al., 2026). It is characterized by extensive grazing, limited feed supplementation, low genetic potential, and inadequate health management, which results in low productivity and increased vulnerability to diseases (MMorm et al., 2024b; Assefa et al., 2024). However, due to declining disease and environmental pollution, feed quality and quantity are the most significant factors. While cassava byproduct-supplemented yeast can improve digestibility and methane mitigation as well (Oloo RD et al., 2023; Morm et al., 2025a). In addition, the integration of locally available agro-industrial by-products, improved forage cultivation, and balanced ration formulation can enhance feed efficiency and animal performance. Moreover, adopting sustainable livestock management practices, including improved manure management and climate-smart feeding strategies, can help reduce environmental impacts while increasing production efficiency.

The solution/Innovation



Key results/impacts

Category	Key Benefit
Productivity	Shorter fattening periods and higher carcass weight.
Finance	Lower feed costs through local by-product integration.
Environment	Reduced carbon footprint and effective waste recycling.
Social	Improved food security and rural livelihood stability.
Policy marker	Direct alignment with MAFF's Strategic Plan for 2024–2028 , specifically supporting the "Circular Economy in Livestock" and "Climate-Resilient Agriculture" pillars of Cambodia.



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Scalability and regional relevance

The intervention can be easily scaled across regions by utilizing local product resources such as cassava by-products and yeast supplements. Since cassava is widely produced in Cambodia and other Southeast Asian countries, the approach remains cost-effective and accessible for smallholder farmers. The technology requires minimal infrastructure and can be integrated into existing livestock production systems. Through farmer training, extension services, and demonstration farms, the intervention can be replicated in different communities. Furthermore, feed formulations can be adapted using locally available agro-industrial by-products and forage resources, ensuring regional relevance and long-term sustainability.

Partners and donors involved

- National University of Battambang (NUBB)
- International Livestock Research Institute (ILRI)

