

ANIMAL SCIENCE IN AUSTRALIA



Proceedings of the Australian Association of Animal Sciences

Volume 34

Anchoring knowledge – exploring the animal science ecosystem

34th Biennial Conference



Pullman Cairns International Hotel, Cairns, Queensland

5–7 July 2022

Improving Lao goat production when resources are limited

L. Olmo^{A,D}, A. Phengvilaysouk^B, A. F. Colvin^B, P. Phengsavanh^B, J. Millar^C and S. W. Walkden-Brown^B

^ASchool of Environmental and Rural Science, The University of New England, NSW 2351, Australia.

^BNational Agriculture and Forestry Research Institute, Vientiane, Lao PDR.

^CInstitute for Land, Water and Society, Charles Sturt University, NSW 2640, Australia.

^DCorresponding author. Email: luisa.olmo@une.edu.au

Lao People's Democratic Republic (Lao PDR) is a small and developing nation in South-east Asia. Agriculture is its lifeblood, employing 61% of the labour force in 2019, compared to 2.6% in Australia (The World Bank 2021). Small family farms are predominant, relying on rice and crop cultivation to feed the household and generate surplus for income. Livestock are essential for providing manure, consuming non-edible plants and household waste, and serving as a bank account, to be sold when cash is needed. While these systems are vital for human survival, as a tool for household economic growth, there is room for improvement. Goats are gaining popularity among Lao farmers due to their strong export potential. Neighbouring Vietnam is a major importer of Lao goats which receive a price premium of 30% over Vietnamese crossbred goats and Lao farmers keep approximately 70% of the slaughter value (Gray *et al.* 2019). The objective of this study was to assess the current level of inputs to understand the scope to improve goat production.

A structured survey was conducted of 70 smallholder farmers raising goats in the main goat raising province of Savannakhet in central Lao PDR and was approved by University of New England Human Ethics Committee (HE19-218). The survey was conducted in the local language, responses were recorded using mobile acquired data software CommCare® (Dimagi Ltd. Cambridge, MA, USA), and descriptive statistics were generated.

Farm capital was limited, with a low annual income (AU\$1558/year, range = AU\$249–6981), a dependence on family labour, and participation in a diverse range of enterprises to ensure household resilience to shocks. This meant there would be trade-offs to high-input investments in goat raising. Farmers reported limited access to animal health services and most relied on neighbours (67%) and family (57%) for information. Farmers had reasonable access to water and land (3.6 ha, range = 0–20 ha). Most farmers (64%) depended completely on free grazing of communal land for goat nutrition and grazed goats for 6 h/day in the wet season and 8 h/day in the dry season. This was predominantly unsupervised. This illuminated increasing grazing duration as a possible low risk intervention to boost nutrition. Uncontrolled breeding resulted in year-round kidding which coincided with low nutrition availability for goats in the late dry and early and late wet seasons (Fig. 1). Increased cropping activity likely reduced grazing duration and nutrition available for goats in the late wet season. Growing forages utilising available land with strategic feeding and/or fodder conservation were recommended.

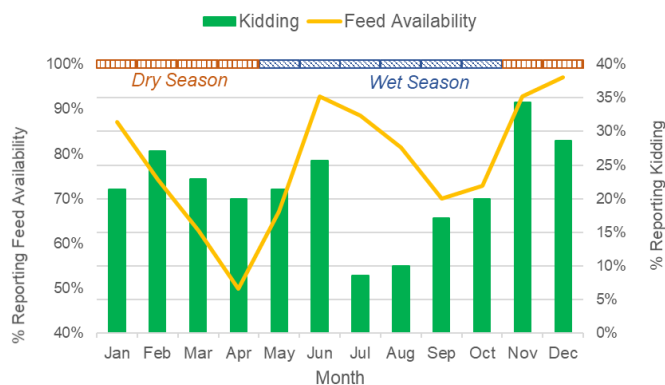


Fig. 1. Proportion of farmers ($n = 70$) reporting month of kidding compared to the proportion reporting months when there were no goat feed shortages (feed availability) in Savannakhet Province, Lao PDR.

Most farmers viewed disease as the main constraint to production, particularly facial lesions (most likely Orf; 87%) and diarrhoea (57%). Disease management was reactive and unregulated, with 61% of farmers responding by opting for drugs to treat illness, and when asked how they obtained them, 74% purchased them themselves from stores. Increasing farmer disease knowledge through participatory training sessions and explanation of low-cost, accessible and practical treatments are being implemented to directly empower farmers as animal health services are limited. Improving goat house hygiene is one of the low-input preventive strategies that are also being pursued.

These data reflect a low-input system with limited capital. A project has commenced optimising current inputs to maximise productivity outputs while maintaining a low-input system. Social and lifestyle benefits are also being monitored as they are required to motivate households to adopt new management strategies when resources are limited.

References

Gray D *et al.* (2019) Final Report of Project LPS/2016/027. Australia Centre for International Agricultural Research, Canberra.
The World Bank (2019) Available at <https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=KH> [Verified 20 April 2020]

We gratefully acknowledge The Australian Centre for International Agricultural Research for funding this work.