Improved feeding management of Chinese Simmental male calves on the basis of energy and nitrogen utilization in Gansu Province, China

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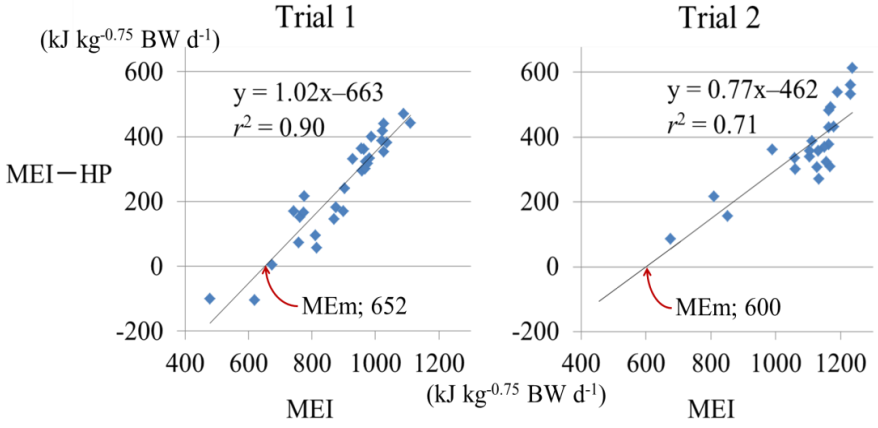
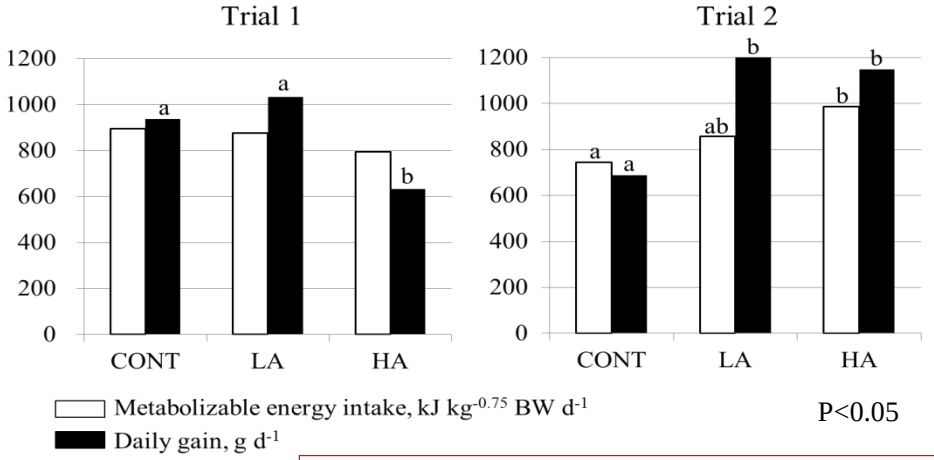
[Background & Objective]
Beef cattle production and consumption are increasing in China though livestock grazing is restrained. Feeding confined beef cattle with roughage produced on farm should be established.

So this study, by 2 feeding trials in the warm (T1) and cool (T2) seasons, evaluated the effect of alfalfa-hay (AH) feeding level on the body weight gain, energy/nitrogen utilization and feeding cost of growing Simmental calves in Gansu Province.

Energy for maintenance (MEm) calculated from ME intake (MEI) and heat production (HP)



Metabolizable Energy (ME) Intake and daily body weight gain (DG)



[Results] - No DG difference in T1 and DG increase in T2 between CONT and LA. DG decrease in T1 and no DG increase in T2 from LA to HA despite increase in ME intake.
- Economic feasibilities in LA less costly for 1kg DG than in the other groups.
- N retention higher in HA with expected DGs.
- ME for maintenance higher than reported.

[Conclusion]
- Low-level dietary substitution with AH would better be practiced in arid area in Gansu Province, from the aspects of DG and feed cost.
- Balanced feeding with consideration to ME and N intake is important.