Maternal supply of fatty acids during late gestation on offspring’s growth, carcass characteristics and energy metabolism in sheep

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INTRODUCTION

Growth is an important factor that drives animal production; and it can be manipulated through maternal nutrition. In ruminants, previous studies suggested that maternal nutrition during late gestation with polyunsaturated fatty acids (PUFA) altered growth, energy metabolism, muscle development, and body composition of the offspring. The effect of PUFA on health, development, and body composition is of interest due to their potential health benefits. The current study aimed to evaluate the effect of supplementing different sources of fatty acids (FA) to ewes during late gestation on offspring growth, feed intake (FI), carcass composition, and glucose and insulin metabolism by conducting a glucose tolerance test (GTT).

AIM

Evaluate the effect of supplementing different sources of fatty acids (FA) to ewes during late gestation on offspring growth, feed intake (FI), carcass composition, and glucose and insulin metabolism by conducting a glucose tolerance test (GTT).

METHODS

Fifty-four ewes (n=18/treatment) were blocked by age, and BW; and within each block randomly assigned to one of three treatments supplemented from day 100 gestation until lambing. Dam treatments:

- No supplementation (CONT, NF)
- Monounsaturated FA supplementation (MUFA) -> 1% FI (EnerGiIL, Virtus Nutrition)
- PUFA supplementation (PUFA) -> 1% FI (Artila G113, Virtus Nutrition)

RESULTS

No differences in feed intake

- There was no FA/Day/Sex, or FA/Day/Sex*Sex interactions

Growth performance

- No differences in feed intake
- There was no FA/Day/Sex, or FA/Day/Sex*Sex interactions

Carcass characteristics

- Carcass characteristics:
  - Lamb body weight (lbs)
  - P = 0.06
  - Days after mating
  - P = 0.08
  - Sex
  - P = 0.04

CONCLUSIONS

Maternal FA supplementation during late gestation modified growth, insulin sensitivity, and HCW in lambs; these changes depended on the FA unsaturation degree of the supplement and lamb sex.

BIBLIOGRAPHY


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