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# CHANGES IN THE MILK AND CHEESE FATTY ACID PROFILE OF EWES FED EXTRUDED LINSEED

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EAAP

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# INTRODUCTION

- Oilseeds
  - ▣ C18:3n-3 and C18:2n-6
  - ▣ In ruminant diets increase milk:
    - C18:3n-3 and C18:2 c9, t11 (rumenic acid, RA)
- Previous reports
  - ▣ Effects of whole linseed, linseed oil or extruded linseed on milk fatty acid (FA) composition in ewes
- Extensive grazing conditions?

# INTRODUCTION

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- Chile (South America)
  - Sheep milk and cheese are gourmet products
  - Increasing demand
  - Diversified market
  - Bioactive foods

# RATIONALE

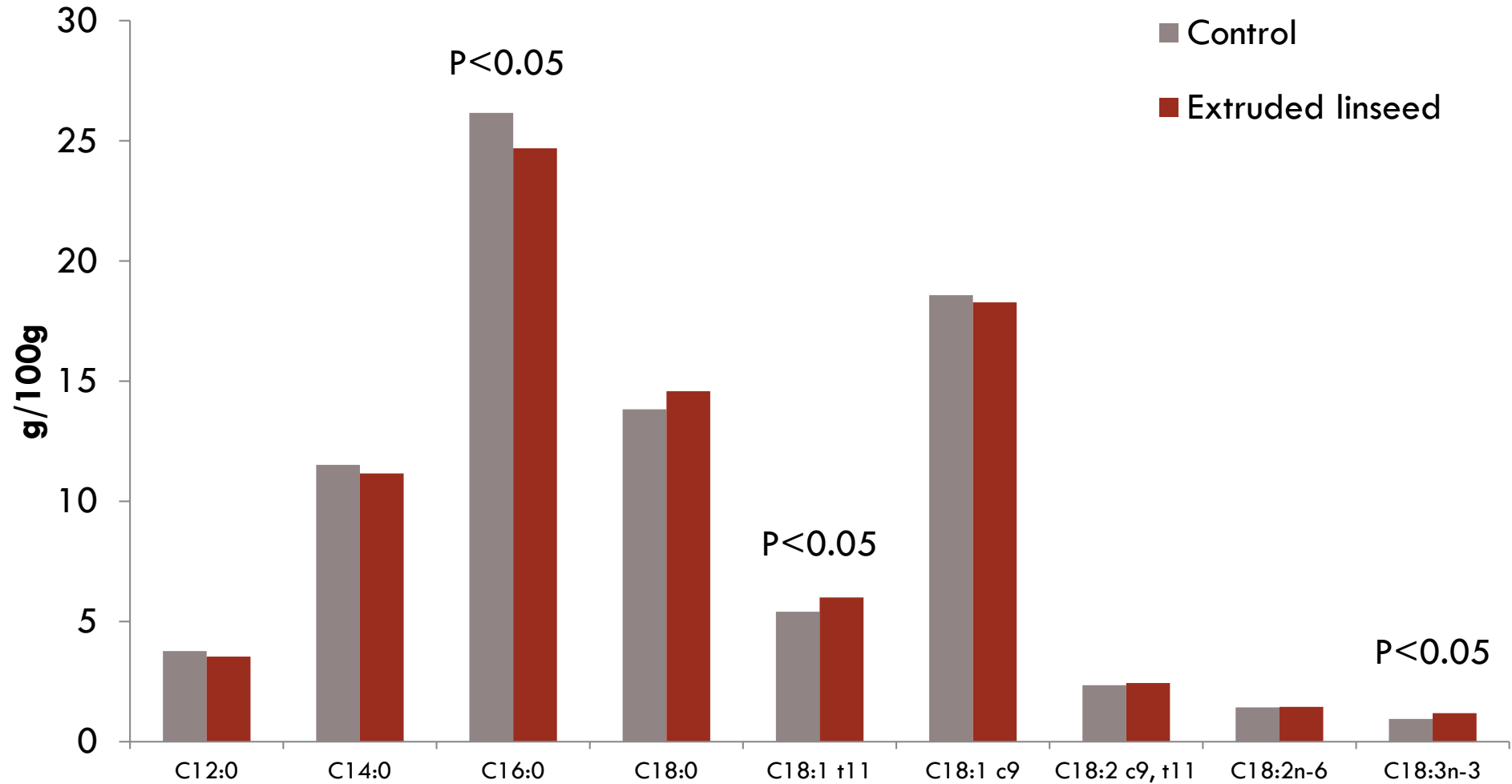
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- Enhance n-3 and RA levels in ewes' milk fat under field conditions (commercial farm) by dietary means (extruded linseed) in a short period of time
- Evaluate the effect of dietary supplementation of extruded linseed on milk and cheese FA profile of ewes under extensive grazing conditions

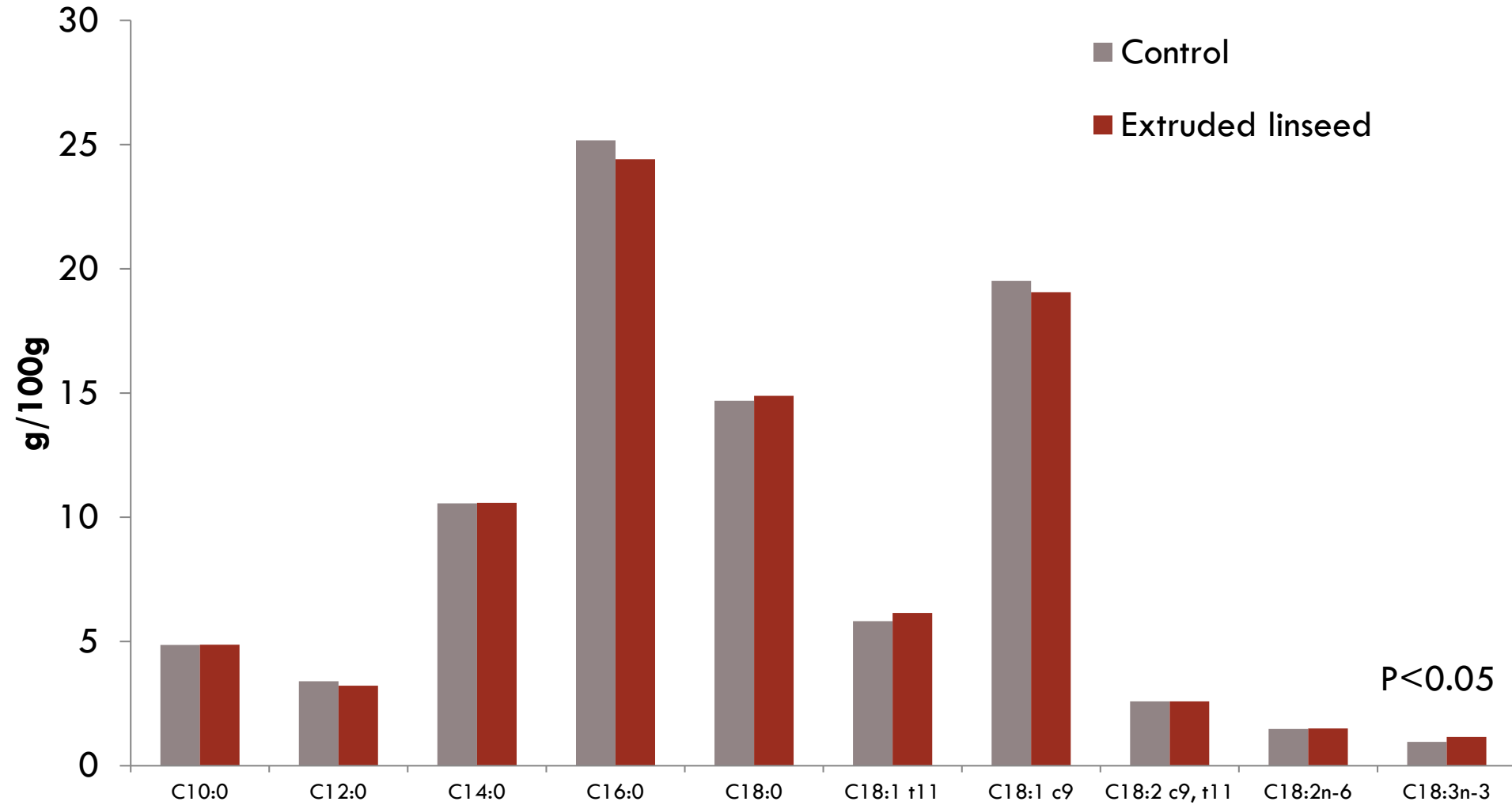
# MATERIALS AND METHODS

- Lactating ewes (Latxa × Milchaf × Corriedale)
- Extensive grazing conditions
- Milked twice a day
- First 6 days (control; TC)
  - 50% corn + 50% oats (1000 g/ewe/d)
- Day 7 to 20 (extruded linseed; TEL)
  - 25% corn + 25% oats + 50% extruded linseed (1000 g/ewe/day)
- From day 21 to 26 the ewes were fed TC

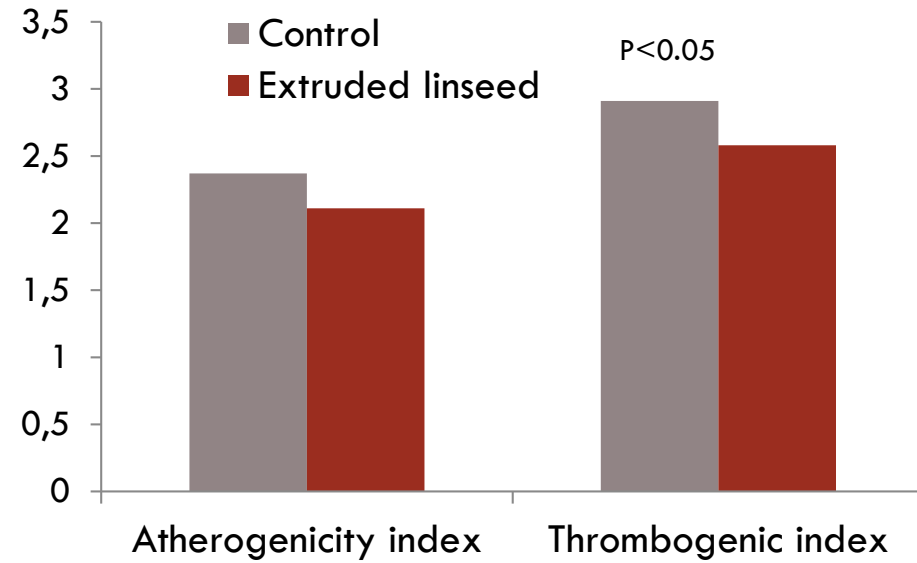
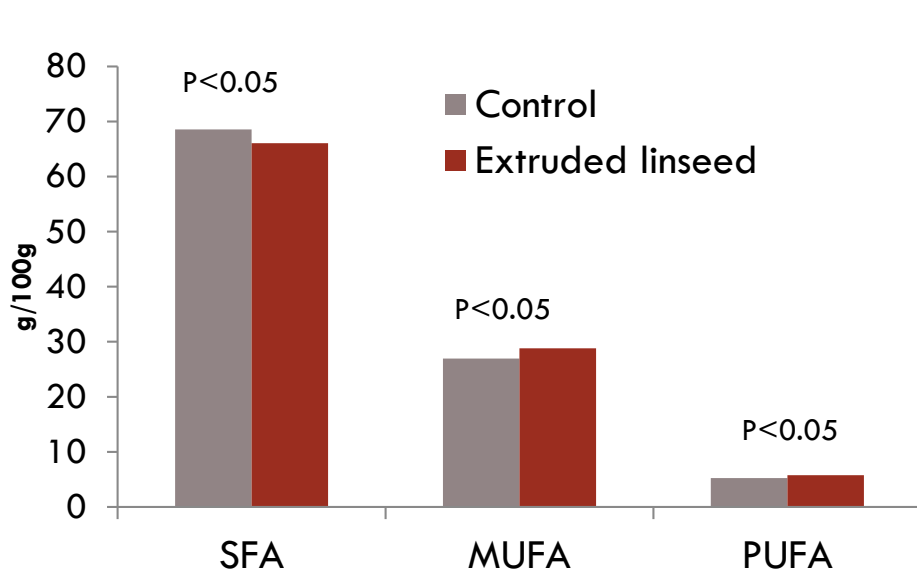
# Milk fatty acid profile from ewes supplemented with extruded linseed



# Cheese fatty acid profile from ewes supplemented with extruded linseed

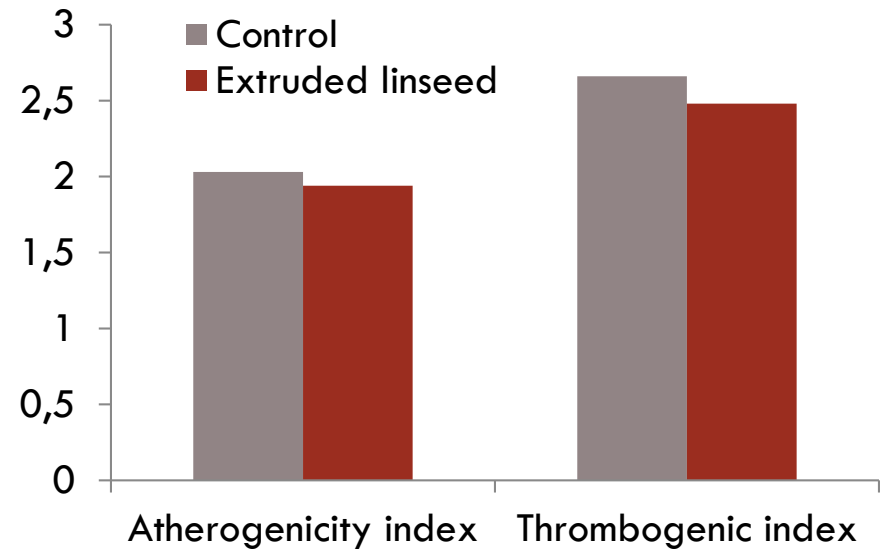
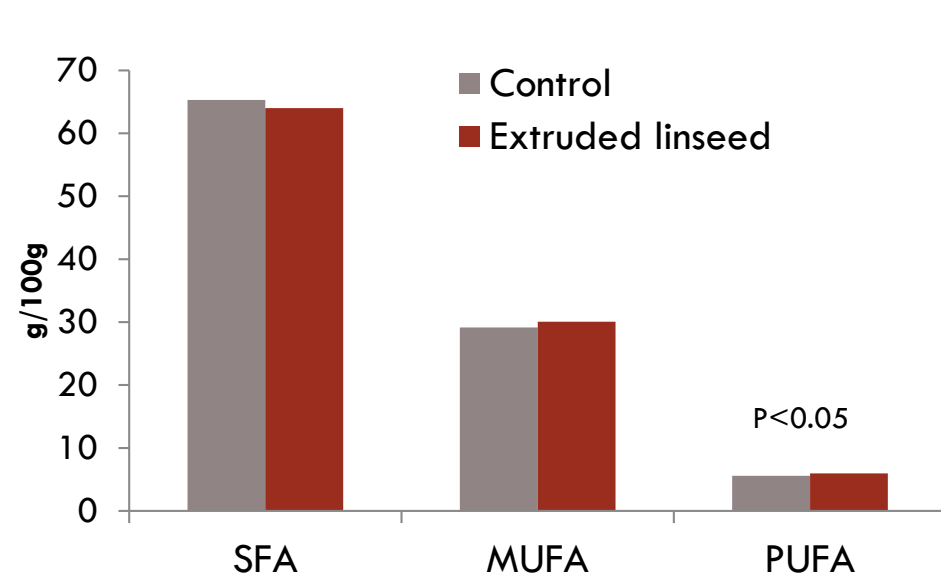


# Fatty acid composition in milk from ewes receiving a diet supplemented with extruded linseed

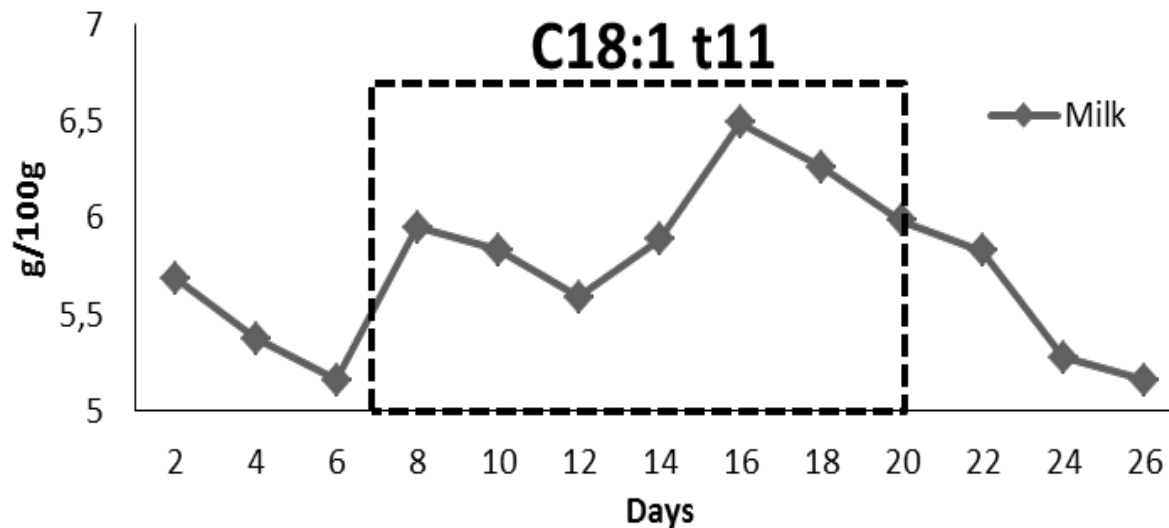
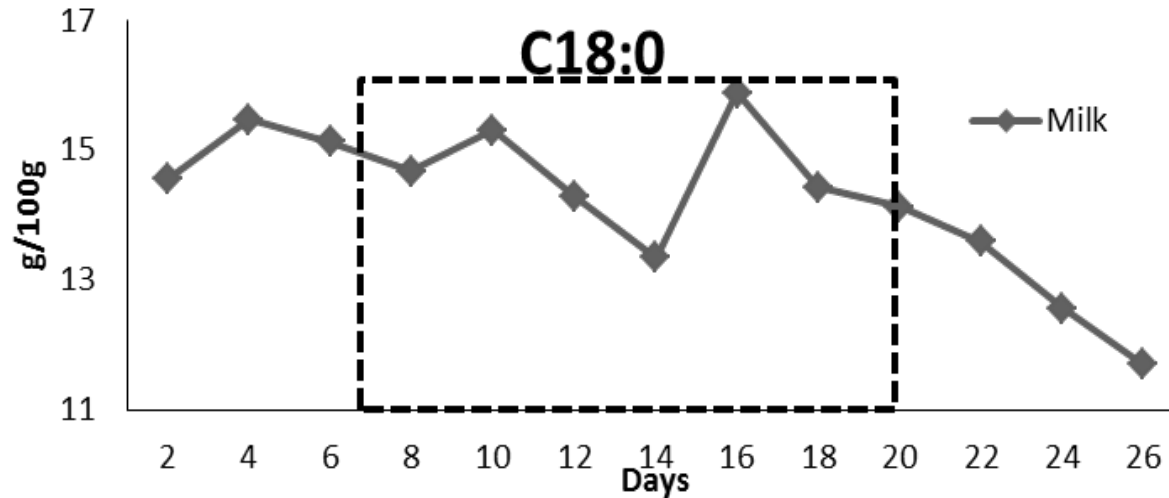




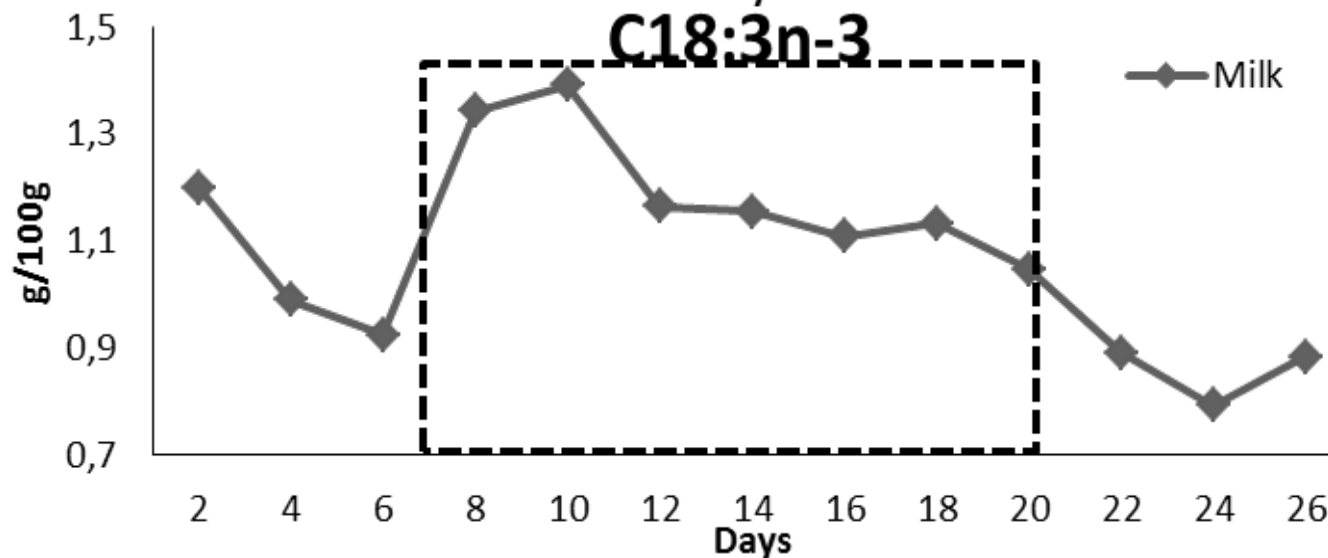
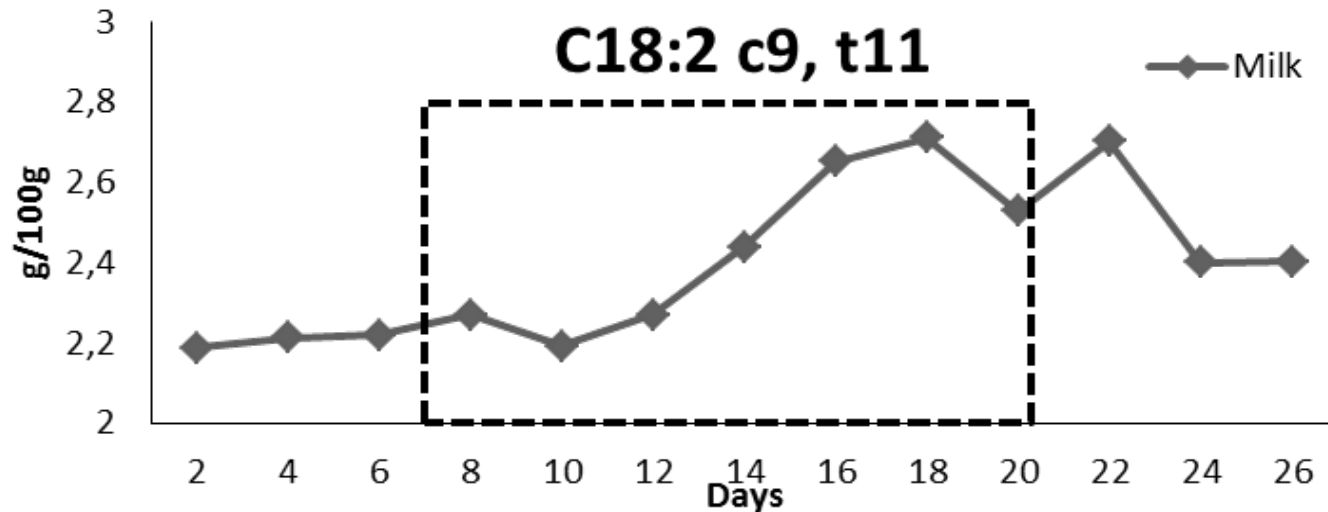
# Fatty acid composition in cheese from ewes receiving a diet supplemented with extruded linseed



# Temporal pattern of C18:0 and C18:1 t11 of milk fat from ewes receiving a diet supplemented with extruded linseed



# Temporal pattern of C18:2 c9, t11 and C18:3n-3 of milk fat from ewes receiving a diet supplemented with extruded linseed



# CONCLUSIONS

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- Supplementation (500 g/ewe/d) of extruded linseed in ewes under grazing conditions increased MUFA and PUFA and decreased SFA and thrombogenic index in milk
- Alternative lipid source supplement that can result in cheeses from ewes with nutritional added value when pastures are scarce or are not actively growing

# ACKNOWLEDGMENTS

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  - ▣ Fondo de Innovación Agraria, Ministerio de Agricultura, Chile

