

# Can the use of novel forages increase omega-3 in lamb?

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# Background

- Red meat is high in saturated fat
- Associated with CVD
- Omega-3 (PUFA) has positive health effects
  - Most pronounced for long-chain omega-3
- WHO recommends specific ratios
- Products can be labelled as a “source” of omega

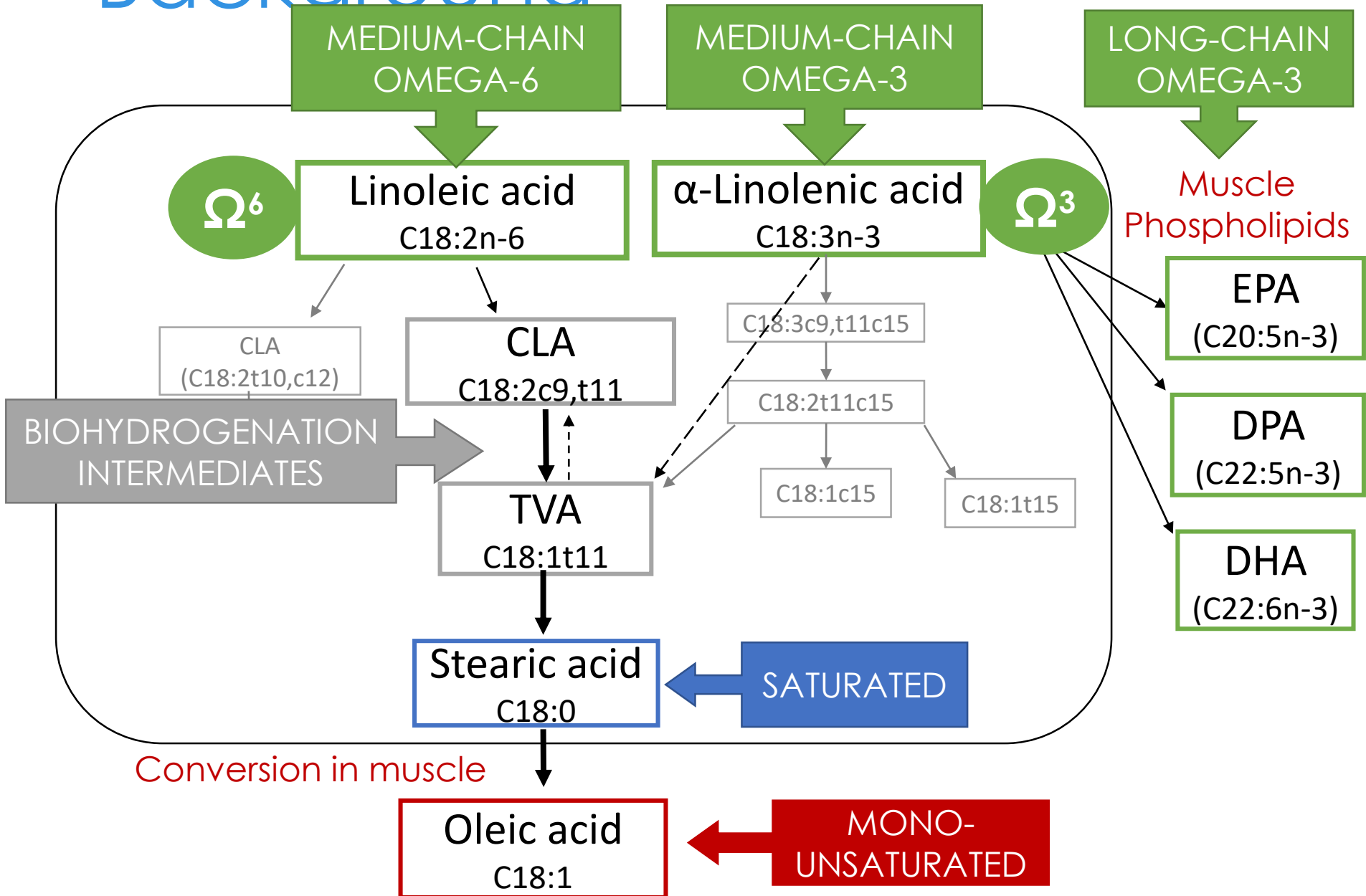


# Background

- Herbs & legumes
  - High nutritional value
  - Drought tolerant
  - High stocking rates
  - Anthelmintic properties
- Grass-fed lamb has higher omega-3 than concentrate-fed lamb
- Preliminary studies identified chicory to increase omega-3



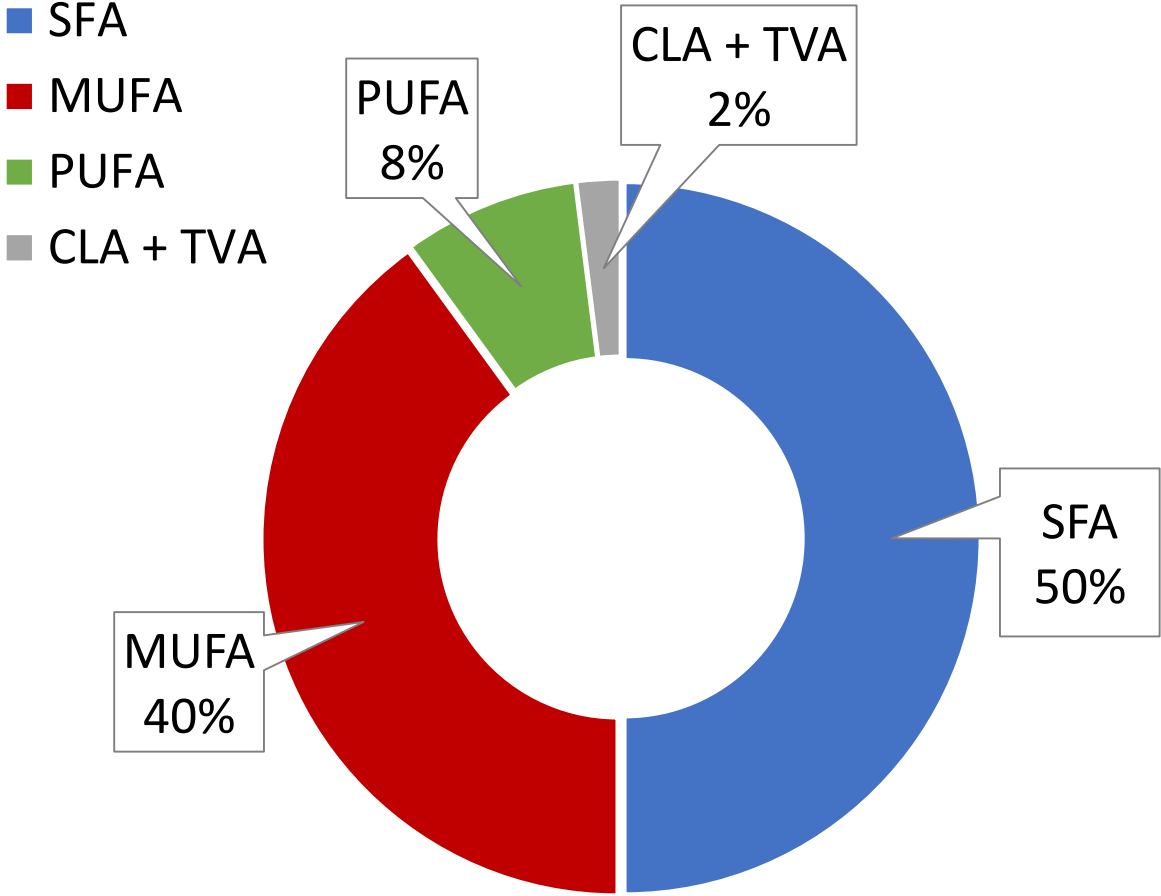
# Background





# Background

Fatty acid proportions



# Research objectives

- Assess the influence of grazing time on chicory
- Determine gender effects
- Evaluate product “source claims”
- Assess WHO recommended ratios



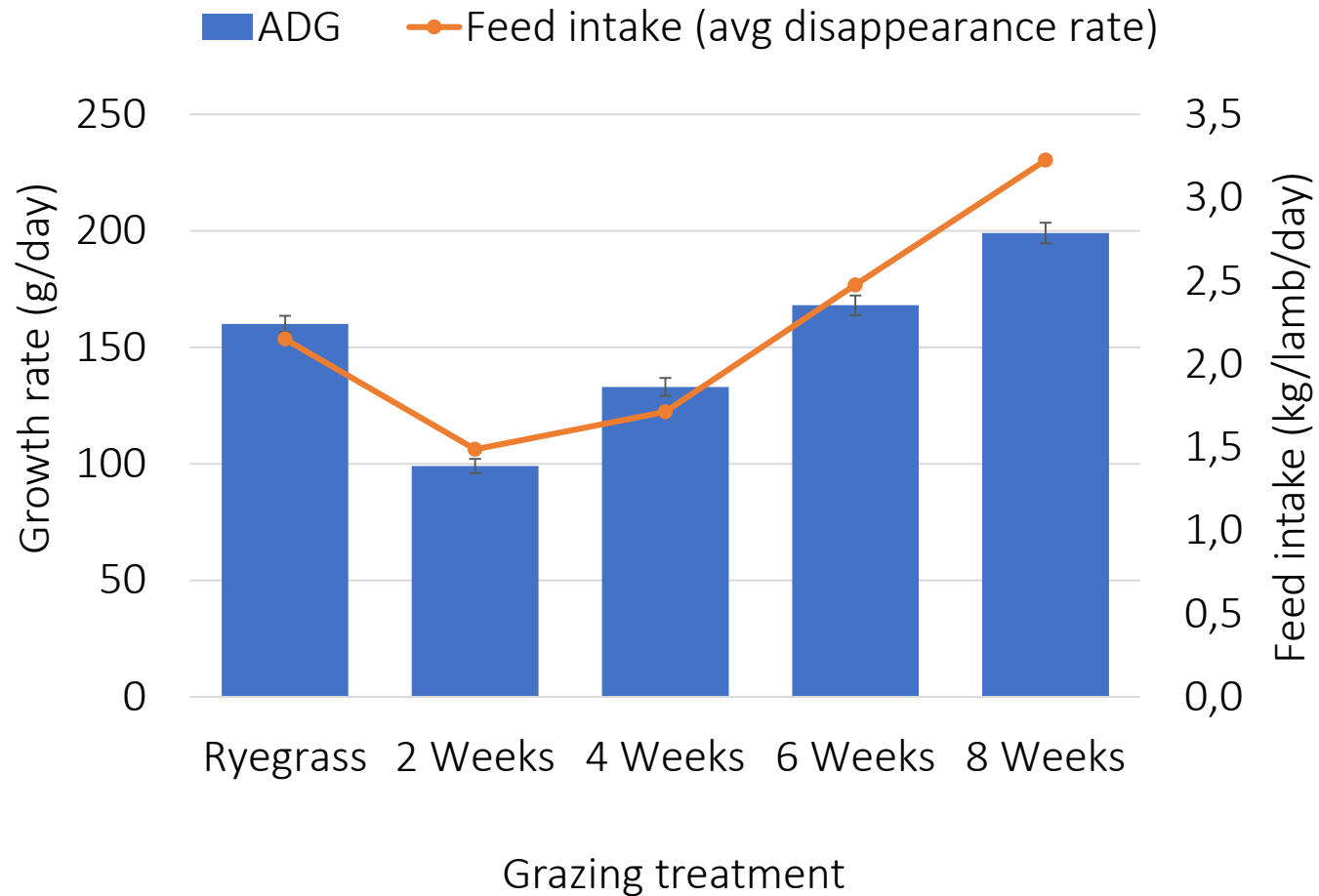
# Methods

- 2014 under commercial conditions
- 750 maternal composite lambs
- Ryegrass vs Chicory (2,4,6,8 weeks)
- Balanced for gender & weight
- Subsampled 7-10 loins per gender x treatment



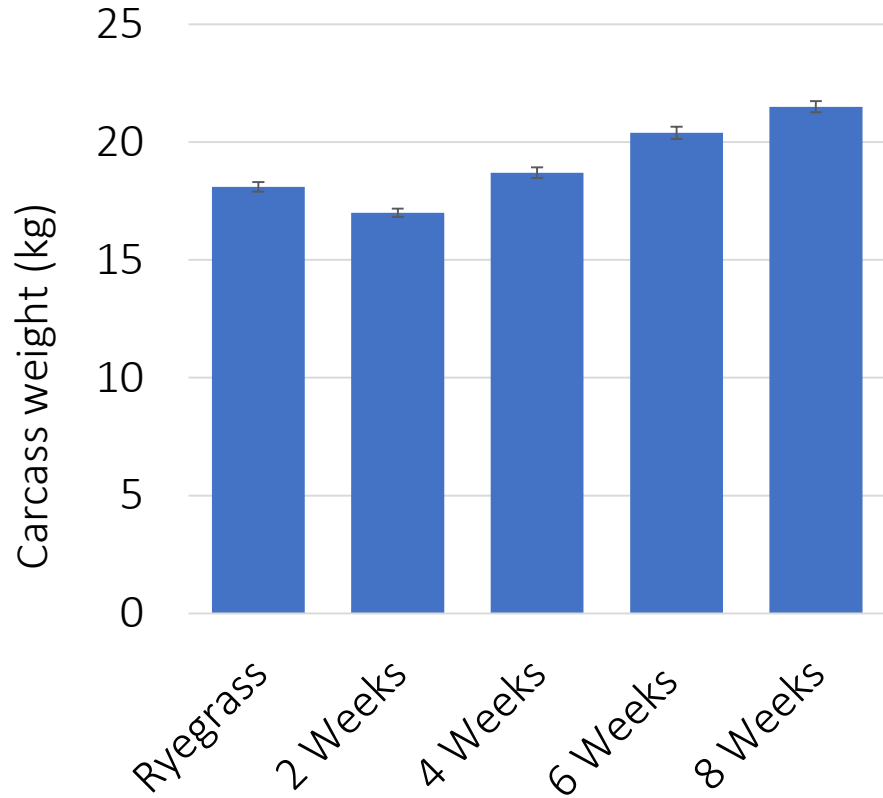
# Results

## Growth & feed intake

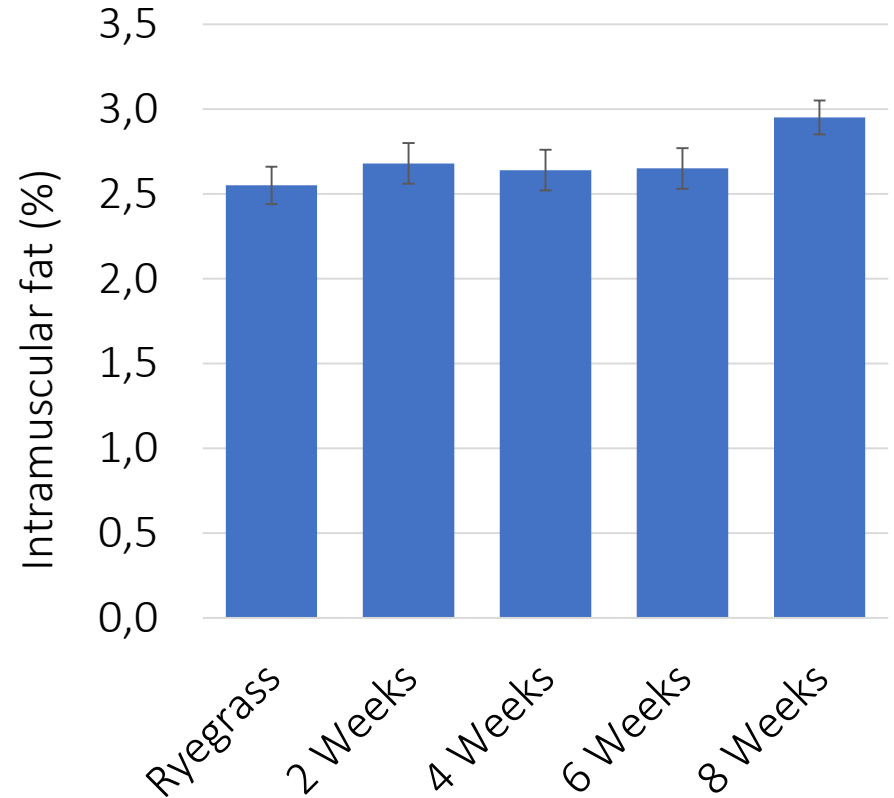




# Carcass weight

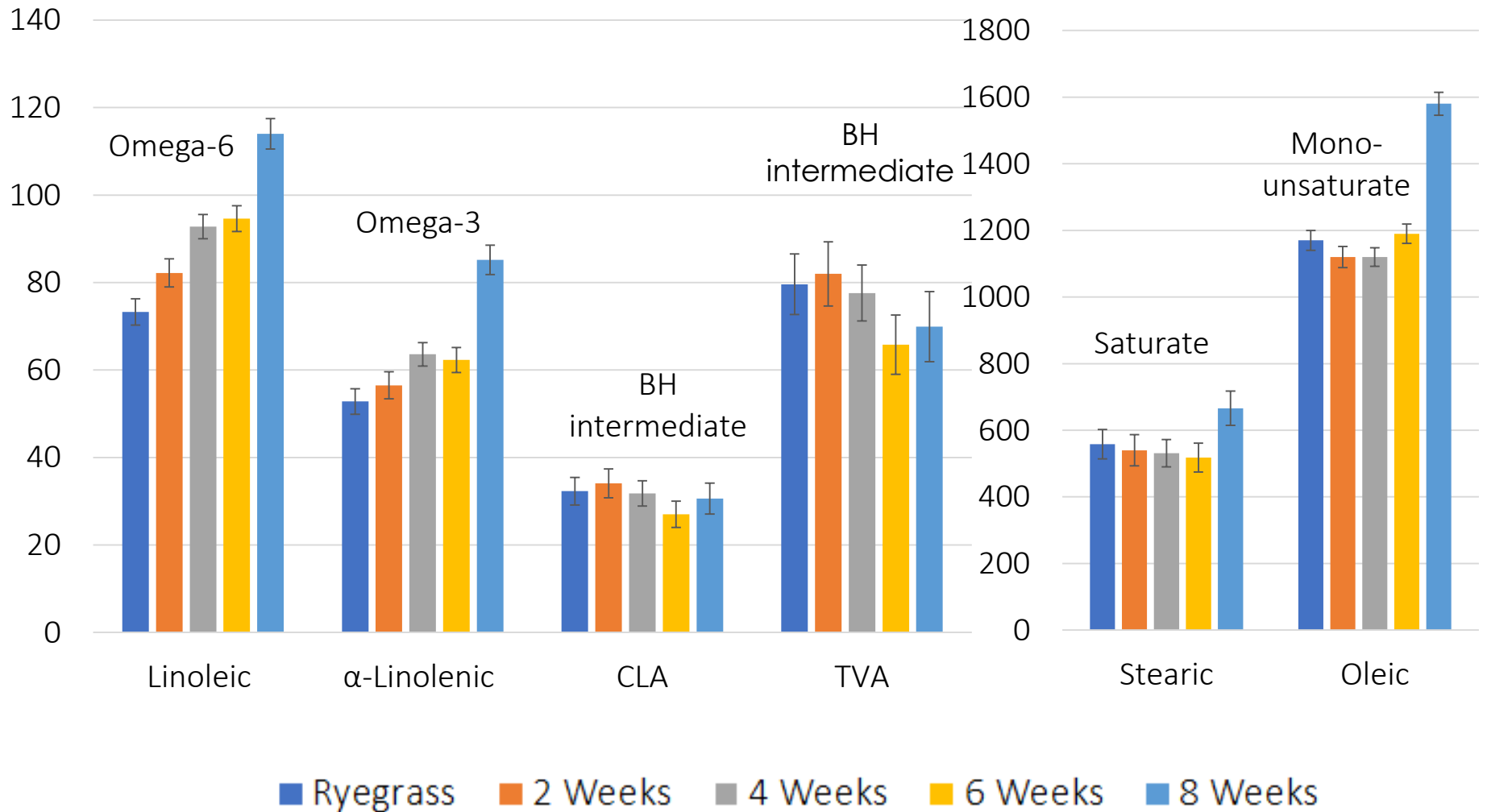


# Intramuscular fat



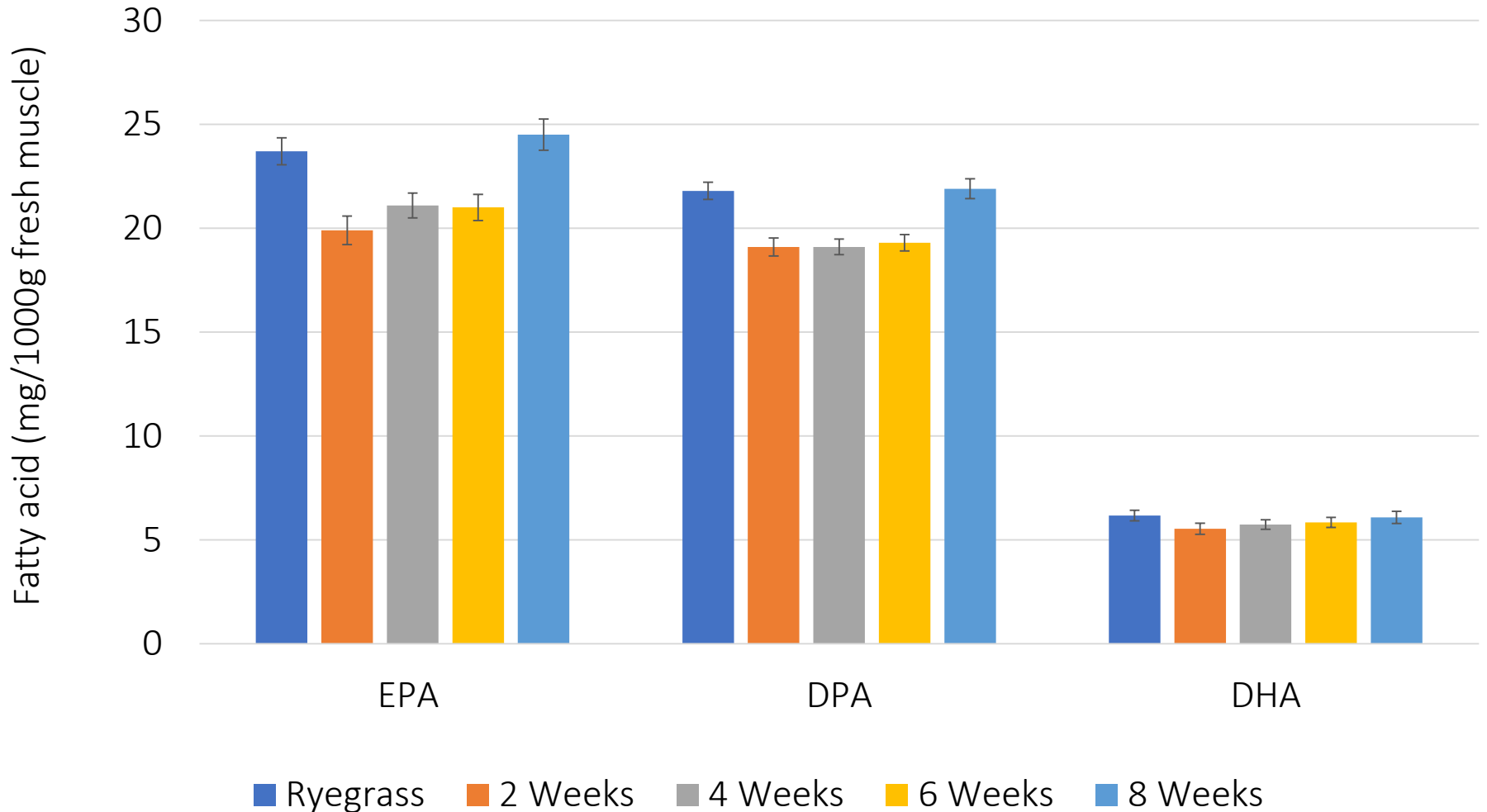
# Medium-chain fatty acids

(mg/100g fresh muscle)



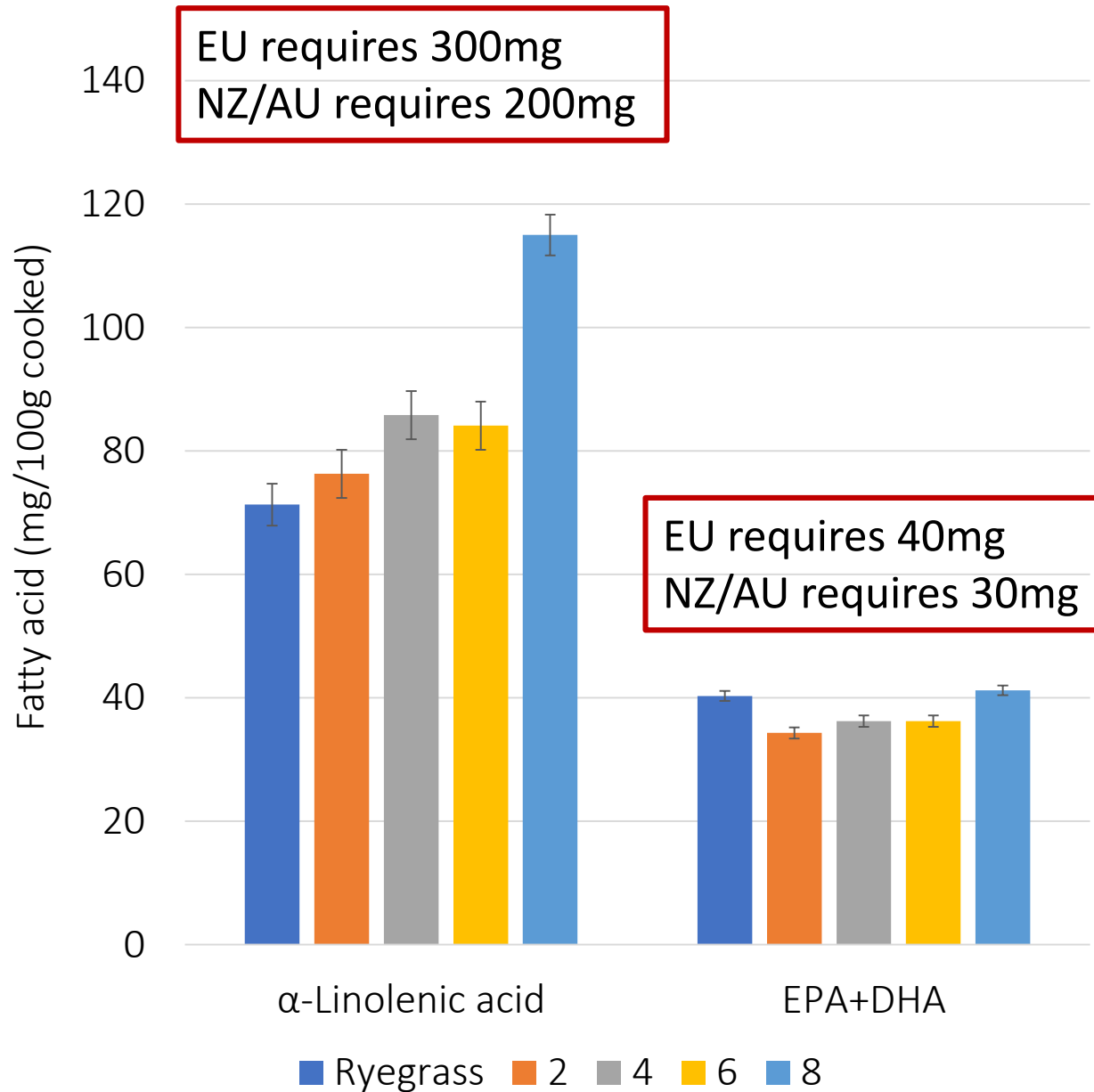
# Long-chain omega-3

(mg/100g fresh muscle)



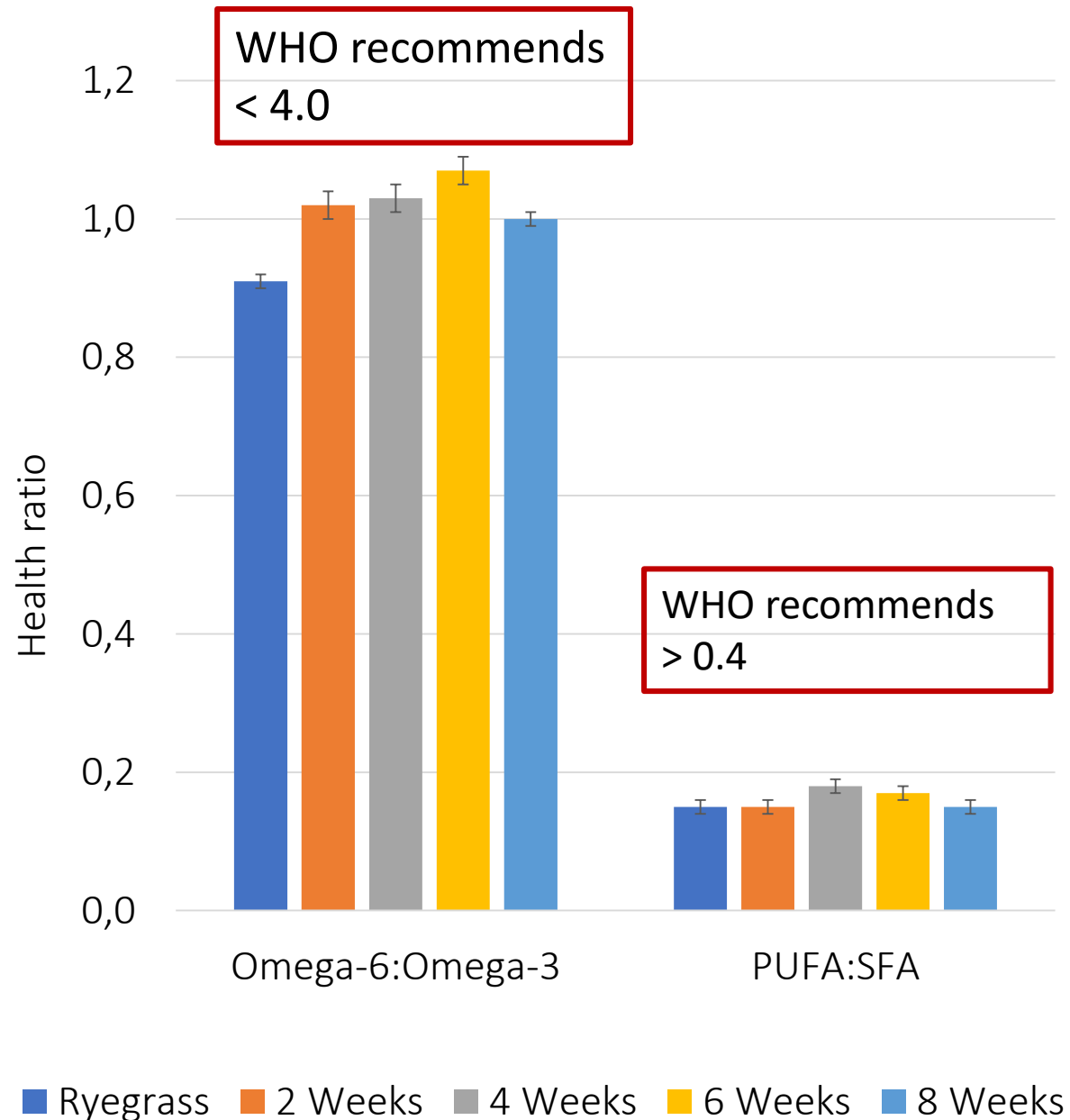
# Product Health claims

mg/100g cooked loin





# World Health Organisation Recommended Ratios



# Conclusions

- Chicory had highest medium-chain fatty acids
- Largest effects for 8 weeks on chicory
- Incremental gains for omegas
- Limitations to achieve omega-3 source claims
- Good ratio for omega-6:omega-3
- Improvement required for PUFA:SFA ratio

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# Thanks



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