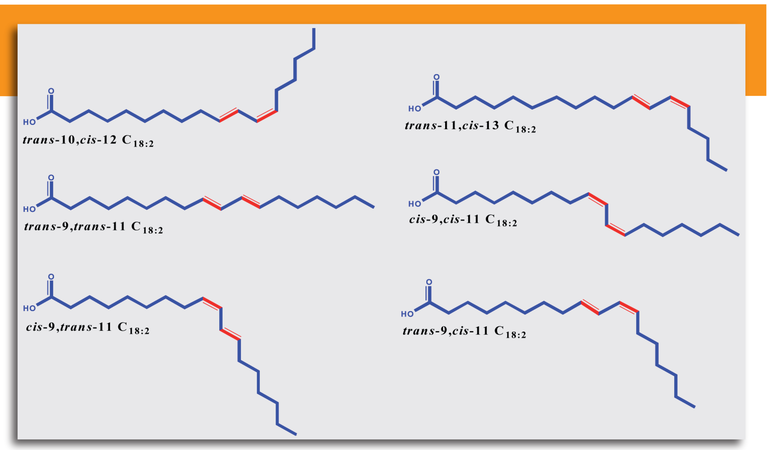
# Functional foods with conjugated linoleic acid (CLA): an overview.

## Introduction

Consumers today demand healthier products, foods that provide prevention, treatment and cure of diseases. The ability to improve the level of conjugated linoleic acid (CLA) may provide new market opportunities for milk and milk products such as butter, yogurt and cheese.

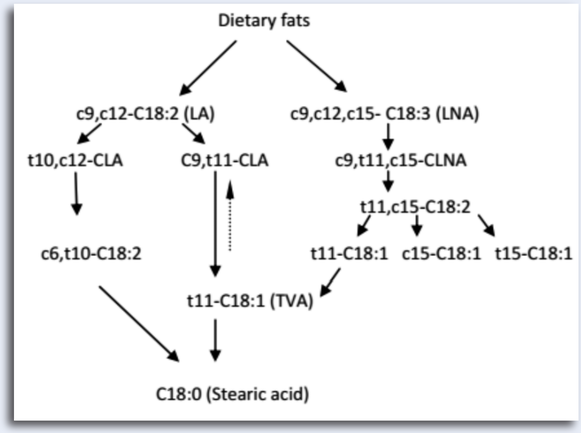
The aims of this project are to show the benefits presented by the CLA, the precautions to be followed to minimize losses during processing, techniques that could be incorporated to food and possible impact on the organoleptic characteristics of fortified food.




## Conclusions

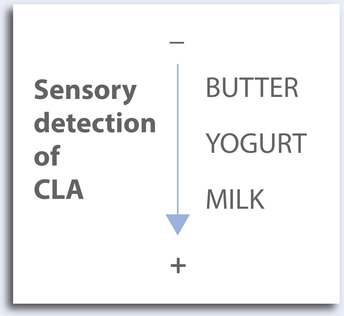
### CLA sources

- Vegetable oils such as sunflower
- Encapsulation of fat in casein or provide fat as a source of calcium
- Type of food ▶ fresh grass in the diet
  ▶ TMR , total mixed rations
- Use of strains of lactic acid bacteria (LAB) producing CLA fermentation ▶ process ▶ yogurt , cheese and fermented milk




### Sensory avaluation

The conjugated bonds in CLA decrease the oxidative stability of CLA, resulting in decreased nutritional quality and off-flavor development.




### Health effects

trans-10, cis-12 C18: 2 ▶ weight management, antidiabetic and antihypertensive;
cis-9, trans-11 C18: 2 ▶ anticancer

Insulin resistance leptin deficiency; gastrointestinal problems

### Technological processes effects

| Treatment | Effect |
|---|---|
| **Pasteurization** | Non negative effect |
| **UHT** | Decrease |
| **Heating by microwave** | |
| **High pressure homogenization** | No changes |
| **Thermal sterilization** | Retention of CLA<br>Lost Throught Oxidation |
| **Ripening** | No effect |

## Methods and material

This literature review was carried out using a selection of articles and information from various sources.
The collected data were mostly extracted from *Science Direct, PubMed, Scopus* and *Knovel* data bases.