



The Big Fat Debate

Fat Replacers

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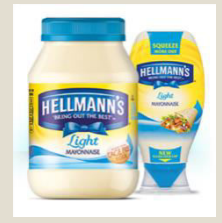
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Where are fats?

Naturally occurring fats in meats, fish, eggs, nuts & seeds

Processed Foods	% Fat Content
Table spreads and Butter	35.0 - 80.0
Mayonnaise and Light Mayo	10.0 - 80.0
Cheese	3.0 - 35.0
Yogurt	0.2 - 10.0
Milk	0.2 - 4.5
Ice cream	8.0 - 15.0
Chips	5.0 - 14.0
Crisps	10.0 - 30.0
Biscuits	15.0 - 29.0
Chocolate	28.0 - 32.0



What are they doing?

- Melting, Crystallisation, Texture, Aeration, Heat transfer and Lubrication, Appearance and Flavour
- Adding calories: 9 calories a gram
- A 'lower fat' food is different for different foods
- Replacing 'fats' is a different proposition for different foods and easier in some compared to others
- Most success in foods which lend themselves to building structured water into the system

Replacers using Water

- Emulsion technology to reduce fat: Create oil in water or water in oil emulsion and dilute the fat phase by increasing the water phase
- Have to compensate for all the characteristics:
- Best use of emulsifiers to create stable emulsion
- Build structure into the water
 - Hydrocolloids such as xanthan, starch
 - Proteins such as milk fractions and gelatine
 - Fibres such as inulin and cellulose
- Replace flavour
 - Water soluble and fat soluble
- Ensure microbiological stability
 - Preservatives

Replacers without water

- A solid must replace a solid on a one to one basis
- Carbohydrates past favourites as lower calorie, cost effective however current climate means inappropriate to increase sugars
- Non metabolisable fat Olestra (Olean)
- Need new technologies:
 - Fat encapsulated fibres
 - Micro/Nano sugars being explored in chocolate
 - Adapted ingredients
 - Process and ingredient combinations
 - Consortium/ cross industry projects

Summary

- Consumers want reduced fat foods and Industry has worked to deliver these
- Fat levels vary widely across food types
- Reduced fat options available across a wide variety of foods but result in more complex formulations which is contrary to consumer desire for 'clean label'
- Reduced fat foods must be as acceptable as full fat ones
- Technologies limit access to some sectors but these are constantly being finessed and developed