The evolution of defining fibre, legislation and impact on calories

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11 October 2017
What has affected the definition of dietary fibre?

• Analytical methods

• Physiological effects

• Food Regulations at national level
How have the fibre definitions and methods evolved?

Methods have evolved as fibre definition changed

Southgate method (1969)
- McCance and Widdowson

Englyst et al. method (1992)
- NSP only
- Recognised by MAFF
- Recommended for labelling
- Gas liquid chromatography

AOAC method 991.43 (1999)
- JFSSG
- Resistant starch & lignin
- Enzymatic-Gravimetric method

AOAC 997.08 (2000)
- FSA
- Fructans
- Used in combination with AOAC 991.43
- Enzymatic-Gravimetric method
Recent evolution of definition

- Codex Alimentarius Commission (2009)
- EU (Regulation (EU) No. 1169/2011)
- EU Regulation and Codex includes:
  1. Edible carbohydrate
  2. Carbohydrate polymers
  3. Synthetic carbohydrate polymers
- 2008 SACN – draft position statement – threw a spanner in the works, just before the EU definition
- Any extracted or synthesised fibres, e.g. oligosaccharides are not included in the fibre definition
- EU 2012 – methods for measuring oligosaccharides recognised in the Commission’s guidance on methods of analysis for nutrition labelling
Why so many definitions?

Challenges

• DF are not a single chemical entity neither a group of related compounds

• Different DF may have one or more physiological health benefits

• Controversy on cause of benefits Food matrix vs isolated form

Consequences

• International harmonisation of:
  ✓ Food labelling
  ✓ Food composition databases

• Interventional and epidemiological research on DF outcomes

• Dietary guidelines

Numerous definitions have been proposed in order to address some of these issues
Regulatory implications

• Need to understand what is in your product before you decide which combination of methods to use

• The methods offer a tool kit for the different fibre components

• UK, EU countries and US use AOAC methods

Impact on calories

• All components measured as fibre are 2kcal/g – this will depend on the definition of fibre

• All other carbohydrates 4kcal/g (except polyols)
Thank you

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