

**EU and Codex Definitions of dietary fibre -
text, with comments by N.-G. Asp and S. Bryngelsson**

**The EU definition of dietary fibre has been settled in:
"COMMISSION DIRECTIVE 2008/100/EC" ANNEX II**

Definition of the material constituting fibre and methods for analysis as referred to in Article 1(4)(j) (of Directive 90/496/EEC, our addition)

For the purpose of this Directive "fibre" means carbohydrate polymers with three or more monomeric units, which are neither digested nor absorbed in the human small intestine and belong to the following categories:

- edible carbohydrate polymers naturally occurring in the food as consumed;
- edible carbohydrate polymers which have been obtained from food raw material by physical, enzymatic, or chemical means and which have a beneficial physiological effect demonstrated by generally accepted scientific evidence;
- edible synthetic carbohydrate polymers which have a beneficial physiological effect demonstrated by generally accepted scientific evidence.

Regarding lignin and other minor non-carbohydrates, Whereas clause (6) states: "The carbohydrate polymers of plant origin that meet the definition of fibre may be closely associated in the plant with lignin or other non-carbohydrate components such as phenolic compounds, waxes, saponins, phytates, cutin, phytosterols. These substances when closely associated with carbohydrate polymers of plant origin and extracted with the carbohydrate polymers for analysis of fibre may be considered as fibre. However, when separated from the carbohydrate polymers and added to a food these substances should not be considered as fibre."

Comments. The definition follows the Statement of EFSA's NDA panel,  expressed on 6 July 2007. This means that a long discussion on the delimitation and exact definition of dietary fibre has come to end, at least regarding labelling. However, some important issues remain to be sorted out in the implementation of the definition:

- Methods for analysis have not yet been defined. This is still a difficult issue since no single method is available measuring all dietary fibre components included in the definition. Notably, alcohol soluble low molecular weight components are generally not recovered due to alcohol extraction or precipitation in currently used methods. Another problem is that only part of the resistant starch, mainly retrograded amylose, is recovered. However, AOAC methods have been approved for resistant starch and oligosaccharides, and analytical systems combining methods to recover all components of extractions and analytical methods have been developed for foods containing resistant maltodextrins (AOAC Method 2001.03). A more generally applicable system is currently under collaborative testing.

- Requirements of documentation of "beneficial physiological effects" for inclusion of added fibre obtained from food raw materials or synthetically have not been defined. Whereas clause 5 of the Directive reads:

"(5) Fibre has been traditionally consumed as plant material and has one or more beneficial physiological effects such as: decrease intestinal transit time, increase stool bulk, is fermentable by colonic microflora, reduce blood total cholesterol, reduce blood LDL cholesterol levels, reduce post-prandial blood glucose, or reduce blood insulin levels. Recent scientific evidence has shown that similar beneficial physiological effects may be obtained from other carbohydrate polymers that are not digestible and not naturally occurring in the food as consumed. Therefore it is appropriate that the definition of fibre should include carbohydrate polymers with one or more beneficial physiological effects."

- Fibre preparations eligible for health claims according to the forthcoming Community list of health claims have obviously qualified, but it remains to be settled if less demanding documentation will be accepted for labelling only. Of the typical beneficial physiological affects mentioned, "fermentability by colonic microflora" can be measured in vitro.

CODEX ALIMENTARIUS - Definition of Dietary Fibre

At its 30th session in Cape Town, South Africa, 3-7 November 2008, the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) agreed to forward a definition of dietary fibre to the 32nd Session of the Commission for adoption at Step 8 (ALINORM 09/32/26). The definition reads:

"Dietary fibre means carbohydrate polymers with ten or more monomeric units ", which are not hydrolysed by the endogenous enzymes in the small intestine of humans and belong to the following categories:

- Edible carbohydrate polymers naturally occurring in the food as consumed
- Carbohydrate polymers, which have been obtained from food raw material by physical, enzymatic or chemical means and which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities
- Synthetic carbohydrate polymers which have been shown to have a physiological effect of benefit to health as demonstrated by generally accepted scientific evidence to competent authorities

Comments

- As evident from the EU definition, the EU authorities have already decided to include components with three to nine monomeric units. Lignin and other minor components naturally associated with the fibre are included in the Codex definition with similar wording as in the EU definition.
- CCNFSDU requested the establishment of an Electronic Working Group, led by the Delegation of France, open to all Codex members and observers and working in English only. The task of this working group is to revise the list of methods in Appendix II of ALINORM 09/32/26