



HEALTH • GRAIN

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Exploiting bioactivity  
of European cereal grains  
for improved nutrition  
and health benefits

**STRENGTHENING COMMUNICATION  
WITH A EUROPEAN BASIS  
TO ALL STAKEHOLDERS**



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- The Definition of Whole Grain  
Towards effective communication, primarily in Europe
- Dietary Fibre in grain products  
How to get the real values (higher than those in current food composition tables) in the tables / and on labels





# HEALTHGRAIN Forum - activities

- **European Research Area approach:**

Funding of projects on e.g. National basis – Funding of networking/international coordination by the HEALTHGRAIN Forum
- Input in scientific meetings/ conferences
- **Science based opinions, advice**
  - ✗ European definition of whole grain -
  - ✗ Implementation of new EU Dietary Fibre definition in food composition tables
- **Information platform**
  - ✗ Websites
  - ✗ Information cereals&health to consumers
  - ✗ Information to target groups (medical doctors, dieticians, policy makers)
- **Meetings, seminars, training**
  - ✗ Workshops (*1 Research + 1 Industrial Platform Workshop/ year*)
  - ✗ Round table (expert) meetings





# Communication issues

## Research and Development

- Information meetings for Industry and for Research -
- Well defined raw materials
- Open Innovation Platform
- Website for members

## Regulatory issues

Communication towards authorities

- Whole grain definition
- Dietary fibre in grain products

Information from EFSA to Forum members

## Communication about cereals and health to

- Consumers,
- Dieticians, medical professionals, politicians
- Disease foundations/ associations

**Consumers/ Actions** – increase whole grain consumption





# Communication issues and key actors involved

## *Potential actions of HEALTHGRAIN Forum*

### Research and Development

- |  |                       |
|--|-----------------------|
| - Meetings for Industry and for Research | VTT, TNO, ICC         |
| - Well defined raw materials             | Barilla, Buhler, xxx) |
| - Open Innovation Platform               | Barilla + ICC/website |
| - Website for members                    | ICC, VTT, TNO,        |

### Regulatory issues

- |                                   |                  |
|-----------------------------------|------------------|
| Communication towards authorities |                  |
| - Whole grain definition          | TNO + DPR + PA + |
| - Dietary fibre in grain products | TNO + PA + DPR   |
| Information EFSA → Forum members  | DPR Nutrition    |

### Communication about cereals and health to

- |  |   |
|--|---|
| - Consumers, non-experts                                 | cerealsandhealth website<br>Caledonian Scientific Press |
| - <i>Disease foundations Dieticians, Medical doctors</i> | XX; input in their meetings                             |

### Consumers/ Actions

- |                                  |                             |
|----------------------------------|-----------------------------|
| increase whole grain consumption | Danish Cancer Association _ |
|----------------------------------|-----------------------------|





# HEALTHGRAIN Forum

## *Meetings*

**Annual meetings – all members welcome + invited guests**

**1) Industry meeting – autumn**

2010: Brussels/Leuven 23-24 Nov.

Possible topics: HEALTHGRAIN New nutrition results  
Definition of whole grain – labelling issues

**2) Research meeting - spring**

2011 option: Combined with Cereals & Europe Spring Meeting  
Munich 11-13 April 2011

As part of programme AND with part only for members.





# HEALTHGRAIN Forum

## Websites

**After May 31<sup>st</sup>**

[www.healthgrain.org](http://www.healthgrain.org) will be HEALTHGRAIN Forum website

With public part and login part for members

HEALTHGRAIN Website will keep the HEALTHGRAIN records

- Archive function – no updates/ new information.
- Visitors of [www.healthgrain.org](http://www.healthgrain.org) are directed to [www.healthgrain.eu](http://www.healthgrain.eu) for the HEALTHGRAIN information

To be considered:

[www.cerealsandhealth.com](http://www.cerealsandhealth.com) similar to [www.tomatoesandhealth.com](http://www.tomatoesandhealth.com)

information for consumers – both scientific and 'popular'(video's games) ..  
in English – Forum Members are encouraged to arrange translations





# Whole Grain Definition – further actions To be initiated by the HEALTHGRAIN Forum

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- 1) Communication of the definition in and outside Europe**
- 2) Translations: Forum members are encouraged to translate**
- 3) Submission to European Commission – DG SANCO**
  - ✘ *Proposed: submission to Standing Committee by several member states*
- 4) Further development of the definition**
  - ✘ Guidelines for allowed processes and for labelling
  - ✘ Inclusion of tritordeum
    - hybrid of durum wheat and a wild barley species
    - (see poster, abstract book p.83)



# Dietary fibre – impact of new definition on labelling

- Dietary fibre levels in products: usually determined with AOAC Official Method 985.29
- These values are listed on packaged products and in (national) food composition databases
- October 2008: European definition of dietary fibre: includes all carbohydrates not digested /absorbed in the small intestine
- AOAC Official Method 985.29 does not measure all fibre compounds included in the EU definition
- AOAC Official Method 2009.01 measures all components included in the EU definition ('McCleary method', McCleary 2007, 2009))
- TNO project: determination of Dietary Fibre 'as eaten'  
Method closely resembling AOAC 2009.01



# Analysis of Fibre Components

**Galacto-oligosaccharides**  
**Raffinose/Stachyose**

**Polydextrose**  
**Fibersol 2**

**Pectin**  
**Arabinogalactan**

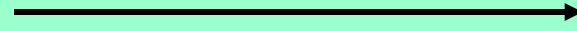
**Total Dietary Fibre**  
**(AOAC Method 985.29)**  
**(AOAC Method 991.43)**


**Cellulose**  
**Beta-Glucan**  
**Galactomannan**  
**Arabinoxylan**

**Resistant Starch**

**Inulin**

**FOS**





# Opinion EFSA on definition dietary fibre July 6, 2007

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*For practical purposes, it would be advisable that analytical methods could actually correspond better to the **physiologically resistant starch present in foods** (Asp, 1996; Champ et al., 2001 and 2003) and that a single assay could be used to quantify all components of dietary fibre.*



# Total dietary fibre and resistant starch percentage (w/w) of 3 bread types

Bread type (mean values of 3)	Dietary fibre AOAC985.29	Resistant starch AOAC2002.02	LMWRMD TNO TDF method*	Dietary fibre TNO TDF method*
White	2.93 ±0.13	1.68 ±0.10	0.35±0.04	3.49 ±0.08
Wholemeal	6.44 ±0.15	1.21 ±0.07	0.17±0.02	6.92 ±0.11
Multigrain	8.32 ±0.42	2.14 ±0.39	0.21 ±0.09	8.84 ±0.16

LMWRMD = Low Molecular Weight Resistant Malto-Dextrin

\*TNO TDF Method 'As Eaten' Rachel M. van der Kaaij, Jan-Willem van der Kamp et al. (2009) Quality Assurance and Safety of Crops & Foods 256-260 (TNO method comparable to AOAC2009.01)

Conclusion “***Although only proven for bread products in this article, the actual levels of dietary fibre, as defined by Codex and European Union, in bread products are higher than levels listed in food composition databases.***

***The same may be true for other food products containing resistant starch and non-digestible oligosaccharides.”***





# Spaghetti - dietary fibre analysis - TNO method

## Effect of sample pre-treatment

Spaghetti AOAC 985.29 <b>Grinding</b>	<b>3.5 %</b>
Spaghetti TNO method <b>Grinding + boiling</b>	<b>4.3 %</b>
<b>Boiling 10 min.</b>	<b>4.8 %</b>
<b>Boiling 8 min.</b>	<b>5.0 %</b>





# How to get the new fibre values accepted

- **National food databases:** reluctant to adapt fibre values
- **Industry:** New measurements of fibre values will take time and resources
- **European Coordination required** for handling efficiently this transition
- **The HEALTHGRAIN Forum will act**
- **Proposed action plan: cooperation with Eurofins and TNO**
  - ✗ Analysis of broad range of member products with classical and new method (AOAC985.29 and AOAC2009.01 – with as eaten conditions)
  - ✗ Joint report of results – to be presented to EUROFIR

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# The HEALTHGRAIN Forum - FROM SCIENCE TO ACTION





# *Acknowledgement*

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Nils-Georg Asp      Swedish nutrition Foundation

Susanne Bryngelsson

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