

British Nutrition Foundation (BNF) review on the role that bread plays in the UK diet (June 2020)

Gary Tucker
Technical Development Ambassador

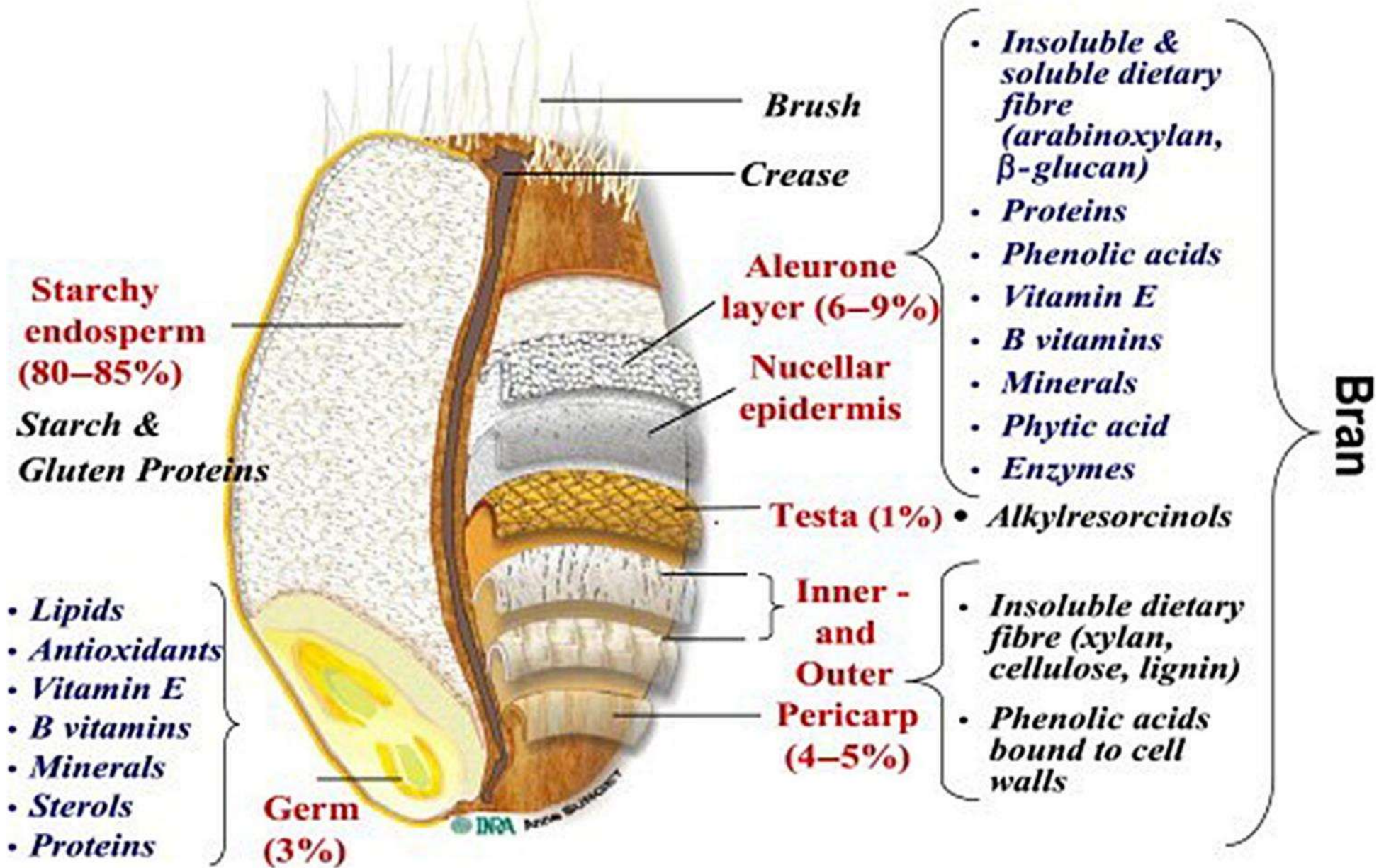


Bread in the diet

- Wheat and flour
- Bread products (and salt)
- Fibre messages
- Concluding remarks

Top 10 UK agricultural products by value (FAO, 2012)

1. Milk (cow)
- 2. Wheat**
3. Chicken meat
4. Cattle meat
5. Pig meat
6. Sheep meat
7. Potatoes
8. Rapeseed
9. Hen eggs
10. Sugar beet



Wheat facts (NABIM, 2019)

- Approximately five million tonnes of wheat is currently milled annually in the UK for human consumption
- 85% of this is grown in the UK
- Roller milling is used to process wheat into different fractions: endosperm, embryo (germ) and the outer layers of the grain
- The germ and outer layers together are called the bran

Flour origin	%
UK	85
Canada	7
Germany	4
France	2
USA	2

Flour facts (NABIM, 2019)

- Hard wheat is used for bread, soft wheat for most other uses
- Wheat requires processing to increase digestibility and palatability
- White flour consists of the endosperm, which is mainly starch and protein (~80% and 10% respectively)
- Wholemeal flour is 100% extraction-rate, brown 85%, white between 75-80%
- 89% of breadmaking flour milled in the UK is white, 2% brown and 9% wholemeal

Flour use	%
Bakeries (bread)	66
Biscuits	11
Other foods	10
Exported	7
Household	4
Cake	2

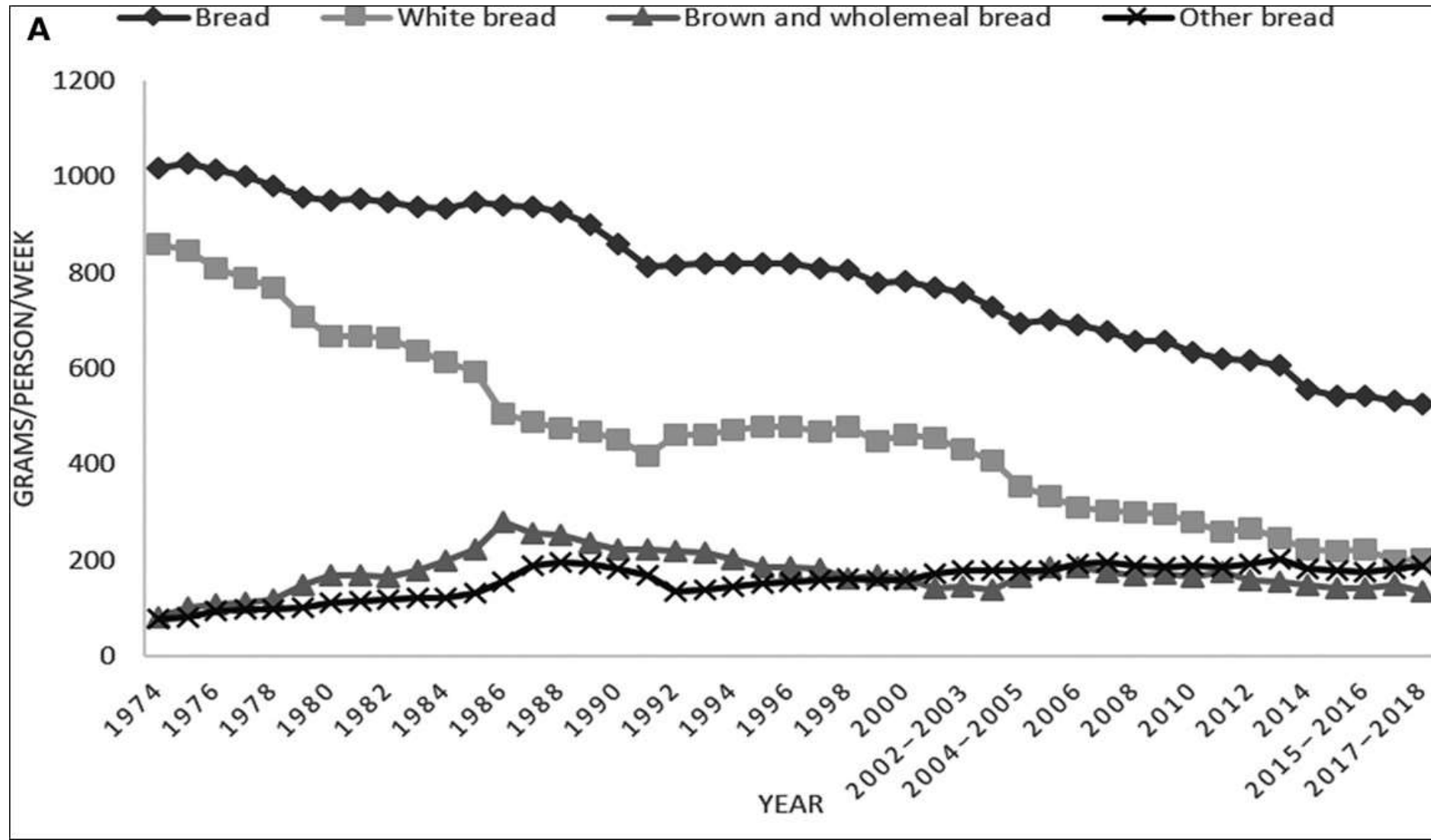
Key messages about UK wheat

- UK is almost self-sufficient in flour
- The CBP had a major role in increasing the % of UK wheat used in breadmaking from 30 to 85%
- UK wheat is an environmentally sustainable commodity
- Soft wheat is exported for cake/biscuit
- AHDB refer to hard wheat as ukp (prime) and soft wheat as uks (soft)

Bread consumption trends

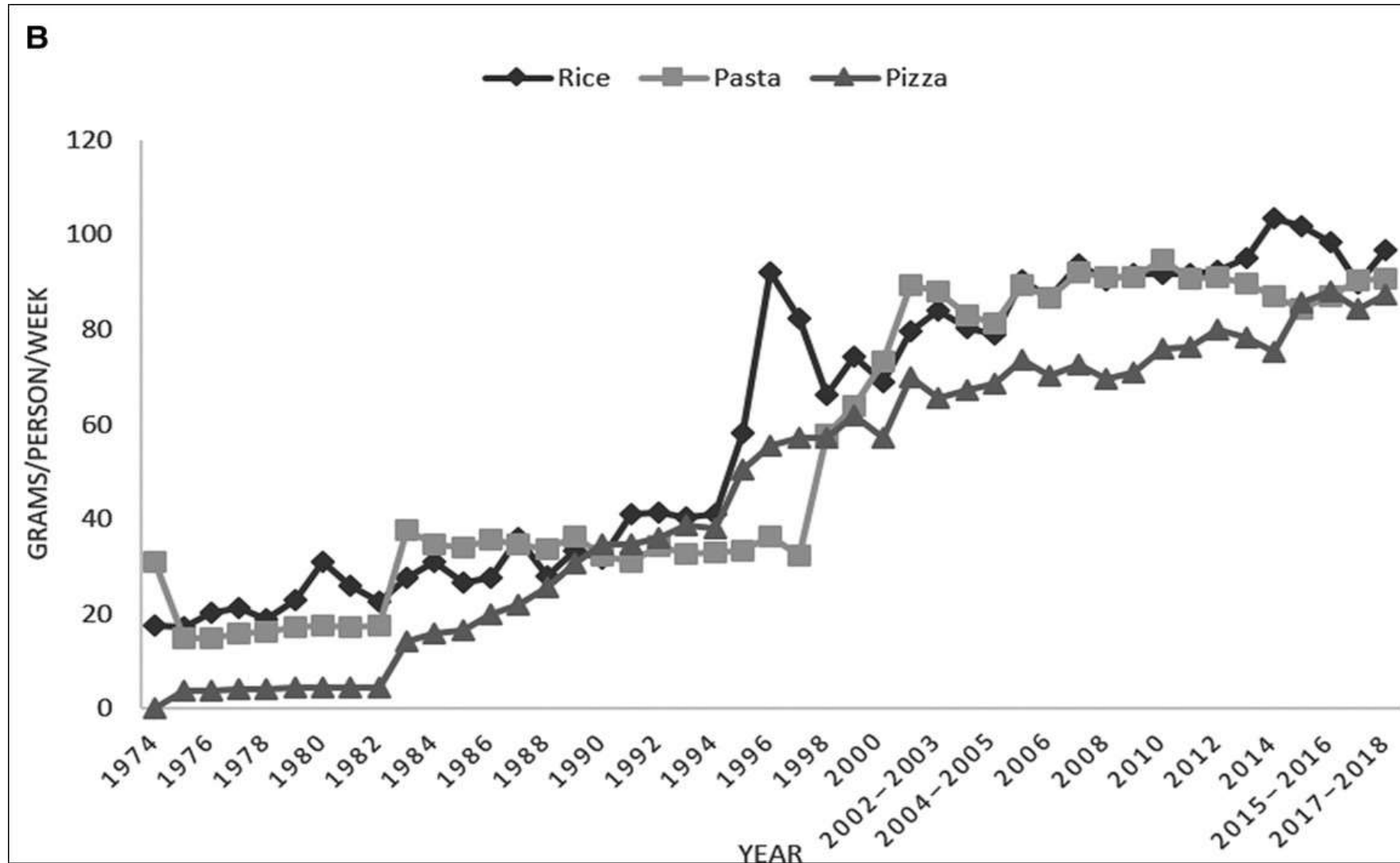
- Demand for wrapped and sliced bread increased during the current health crisis, at one point by as much as 50%
- Bread has proven itself to be one of the nation's favourite staple foods and with good reason
- An updated review launched May 2020 by **the British Nutrition Foundation (BNF)** outlined the role of bread in the UK diet (supported by **the Federation of Bakers**)
 - contribution of bread to nutrient intakes
 - biological effects of different components of bread
 - health claims related to these
 - future trends for bread

Bread consumption trends



Source: Family Food Survey
2017/2018 (DEFRA 2019).

Pasta, rice and pizza consumption trends



Source: Family Food Survey
2017/2018 (DEFRA 2019).

Macronutrient composition of UK bread per 100g

	White bread	Wholemeal bread
Energy (kcal)	236	217
Carbohydrate (g)	48.7	42.0
Starch (g)	45.8	39.3
Total sugars (g)	3.0	2.8
Fibre (g)	2.9	7.0
Protein (g)	8.7	9.4
Fat (g)	2.1	2.5

Bread contributes the following nutrients to our average UK daily intake

Nutrient	% in diet from bread
Fibre	17-21
Carbohydrate	16-20
Protein	10-12
Calcium	12-17
Iron	15-17
Thiamine	16
Folate	9-14
Magnesium	12-13
Zinc	10-11

Key messages about bread

- Bread is a significant contributor to UK carbohydrate intake (mainly starch) providing 16-20% across all age groups
- Starchy foods are a good source of energy. NHS website advises they should make up just over a third of our diet and to choose higher fibre wholegrain varieties
<https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>
- Bread provides other macro-nutrients, sources of protein, is low in total and saturated fat, and low in sugars

Salt (sodium)

- Sodium is an essential nutrient and salt (sodium chloride) is the major source of sodium in the UK diet
- Salt is essential in bread, stabilising the fermentation rate during bread making, strengthening the dough and enhancing the flavour
- All bread contains salt and bread does contribute substantially to sodium intakes (16-19% across different age groups)
- The average salt content of bread is being reduced, and has dropped from 1.23g/100g in 2001 to 0.95g/100g in 2017
- Work on reducing population salt intakes continues and the Department of Health and Social Care is due to publish revised salt targets in 2020 (DHSC 2019)

Fibre

- Diets high in fibre are associated with reduced risk of type 2 diabetes, cardiovascular disease and colorectal cancer
- The most recent NDNS survey indicated the UK intake of fibre falls below the recommended amounts

Age group (years)	Recommendation (g/day)	Mean intake (g/day)
1.5–3	15	10.3
4–10	20	14.0
11–18	25	15.3
19–64	30	19.0
65+	30	17.5
75+	30	16.5

Fibre in bread

- All bread, including white, provides fibre
- Wholemeal bread is highest in fibre, at 7g per 100g (23% of the recommended adult daily intake of 30g; 2015 government guidelines)
- White bread provides 2.9g of fibre per 100g, just below the threshold to qualify as a source using UK and EU nutrition claim regulatory criteria (>3 g of fibre per 100 g or >1.5 g of fibre per 100 kcal)

Different fibre types in wheat flour

g/100 g dry matter	Whole-grain wheat	Refined wheat flour
Arabinoxylan	7.1	2.1
Cellulose	1.9	0.2
Fructans	0.9	0.6
Lignin	1.5	0
β -glucan	0.6	0.2
Resistant starch	0.3	0.3
Other*	1.9	0.9
Total dietary fibre	14.2	4.3

* Others are the sum of non-cellulosic residues, accounted for as β -glucan or cellulose. Adapted from Bach Knudsen *et al.* (2017).

Bioactives; further benefits of fibre

- Fibre, vitamins, minerals and other bioactives are mostly concentrated in the bran (particularly the aleurone component)
- Whole wheat contains a variety of phytochemicals; evidence suggests that diets rich in phytochemicals (present in plant foods) protect against the development of chronic diseases such as cardiovascular disease, type 2 diabetes and cancer
- Emerging research suggests that consuming a diverse range of bioactives, from fruit and vegetables, pulses and whole grains benefits the gut microbiome

Key messages about fibre

- Wheat flour is a source of fibre in the diet
- White flour is good, wholemeal is better
- Bioactives are also present in wheat fibre
- The wide range of fibre types in wheat flour is beneficial to the gut microbiome – insoluble, soluble, resistant starch...
- A healthy gut microbiome is essential for fighting diseases through the immune system

Conclusions

- Bread is a positive part of the UK diet
- There are negatives with coeliac disease but few genuine other negatives
- Wheat is a sustainable UK crop
- The role of cereal fibres in digestion and the gut microbiome is an emerging area of interest
- Bread could and should become of greater significance

Further information and contact details

Gary.tucker@campdenbri.co.uk

Bakery product development

michael.adams@campdenbri.co.uk

Flour testing and analysis

kate.mackinson@campdenbri.co.uk

General enquiries

support@campdenbri.co.uk