

THE SUGAR CONTENT OF BREAKFAST CEREALS

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Disorders such as dental caries and obesity which are related to food consumption have an uncertain aetiology. One common factor is the excessive and often frequent consumption of sugars by susceptible individuals. Many of the sugars consumed are in breakfast cereals, soft drinks, canned and other processed foods. There is a need for information on the mono- and oligosaccharide composition of these foods to be readily available. In addition, methods previously used to estimate sugars have often been non-specific (Paul and Southgate 1978) when it would be advantageous to know the amounts of individual sugars because of their different metabolic fates.

We have analysed a range of breakfast cereals which together account for approximately 90 per cent of total breakfast cereal sales of a national supermarket chain. Our studies showed that previously reported methods (Dunmore and Otto 1979) for the extraction of sugars from foods gave low yields and a new procedure was developed using ethanol:water (80:20 v/v) in which recoveries from spiked samples were greater than 95 per cent.

Duplicate samples were extracted and the sugars determined by high pressure liquid chromatography. Elution was carried out using acetonitrile:water (85:15) and the sugars resolved on an amino-propyl-silica column (Waters Associates). Detection was achieved by differential refractometry and peaks were quantitated by comparing peak heights with those of standard compounds. The coefficient of variation for replicated analyses was between 0.9 and 3 per cent for the sugars analysed. The table shows the individual sugar content of the 10 most popular cereals.

Sugar content of breakfast cereals (g/100 g as purchased)

Cereal	Fructose	Glucose	Sucrose	Maltose	Total
Kelloggs Corn Flakes	0.88	1.93	1.93	0.22	4.96
Vita Brits	0.34	0.79	0.26	0	1.92
Special K	0.78	2.10	8.74	0	12.13
Weetbix	0.52	0.48	0.92	0.34	2.26
Weeties	0.50	0.45	0.57	tr	1.52
Rice Bubbles	0.49	2.05	4.99	0	7.53
Coco Pops	1.85	2.05	32.6	0	36.5
Vital	1.14	1.00	19.22	2.43	23.79
Skippy Corn Flakes	1.72	1.97	2.51	tr	6.40
All Bran	0.76	1.96	8.44	1.46	12.62

The results illustrate a wide range of sugar contents in breakfast cereals. These investigations are being extended to canned and infant foods.

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