

CALCULATION OF WHOLE GRAIN CONTENT

Evidence of the calculation of whole grain content must be provided on application for registration of each product under the Code. The following information provides guidance for calculating whole grain content.

DEFINITION OF WHOLE GRAIN

To carry a whole grain ingredient content claim a food must meet the Food Standards Code definition of whole grain as quoted below. Guidance on the typical ratio of cereal fractions is provided in Table 1. These ratios are not prescriptive and are provided as a guide only.

Whole grain means the intact grain or the dehulled, ground, milled, cracked or flaked grain where the constituents – endosperm, germ and bran – are present in such proportions that represent the typical ratio of those fractions occurring in the whole cereal, and includes wholemeal

Reference (Australia New Zealand Food Standards Code, Standard 2.1.1 – Cereals and Cereal Products. Canberra: Food Standards Australia New Zealand).

Typical ratio fractions in common cereal grains

The following information is provided as guidance only. GLNC encourages Registered Users to seek legal advice to ensure statements of whole grain are made in accordance with the Australia New Zealand Food Standards Code.

Table 1. Typical ratio of common cereal grains

Percentage by weight				
	Endosperm	Aleurone	Germ	Bran
Barley	76.2	4.8	3.0	2.9 (hull 13%)
Maize	79.6	2.2	11.7	6.5
Oats	63	-	2.8	9.0
Rice	73	-	2.2	4.8 (hull 20%)
Rye	86.5	-	3.5	10
Wheat	81.4-84.1	6.7-7.0	2.5-3.6	7.4-9.5

(Source: Kent NL. *Technology of Cereals: an introduction for students of food science and agriculture*. NL Kent and AD Evers 4th ed. p39)

CALCULATION OF WHOLE GRAIN CONTENT OF FOODS

GLNC recommends manufacturers calculate whole grain content according to the Food Standards Code and use the guidance provided in the document ‘Food Standards Australia New Zealand Percentage Labelling of Foods User Guide – Characterising Ingredients and Components of Food’.

Guidance on which grains may be included in the calculation of whole grain content is provided in Table 2. It is recommended that in the case where pre-soaked grains are used, the weight of the grains prior to soaking is used in the calculation of whole grain content and soaking water is included as ‘added water’.

Table 2. Grains that may be included in calculation of whole grain content

Grains that may be included in calculation of whole grain content	Ingredients that may not be included in calculation of whole grain content
Amaranth*	Grains in the left hand column that have been refined so that they do not meet the definition of whole grain e.g. pearled barley
Hull-less barley	Legumes including beans, peas, lupin and lentils and soy
Buckwheat*	Seeds of any kind including linseed and chia**
Corn	Corn grits and degermed corn
Millet	White rice
Oats	Cous cous, semolina, and polenta made from refined flour
Quinoa*	
Rice – brown, wild, black, red and other whole grain forms	
Rye	
Sorghum	
Triticale	
Wheat, including burghul, emer (faro), einkorn, freekeh, kamut spelt, teff and other forms of wheat	
Sprouted whole grains	

* These are pseudo-grains. The pseudo-grain group are not part of the Poaceae botanical family, in which true grains belong. However they are nutritionally similar and so may be defined as whole grain.

** Seeds, including chia, are nutritionally different to grains and so are not considered whole grain. In particular, most seeds have higher oil content than grains.

Providing evidence of whole grain content for product registration

It is not possible to determine the content of whole grain by analysis. Therefore GLNC requires manufacturers to provide assurance from a senior executive of the validity of the percentage whole grain content used to calculate the grams of whole grain per serve.