8-04
20 October 2004

DRAFT ASSESSMENT REPORT

APPLICATION A464

DEFINITION OF 'WHOLEGRAIN'

DEADLINE FOR PUBLIC SUBMISSIONS to FSANZ in relation to this matter:
1 December 2004
(See 'Invitation for Public Submissions' for details)

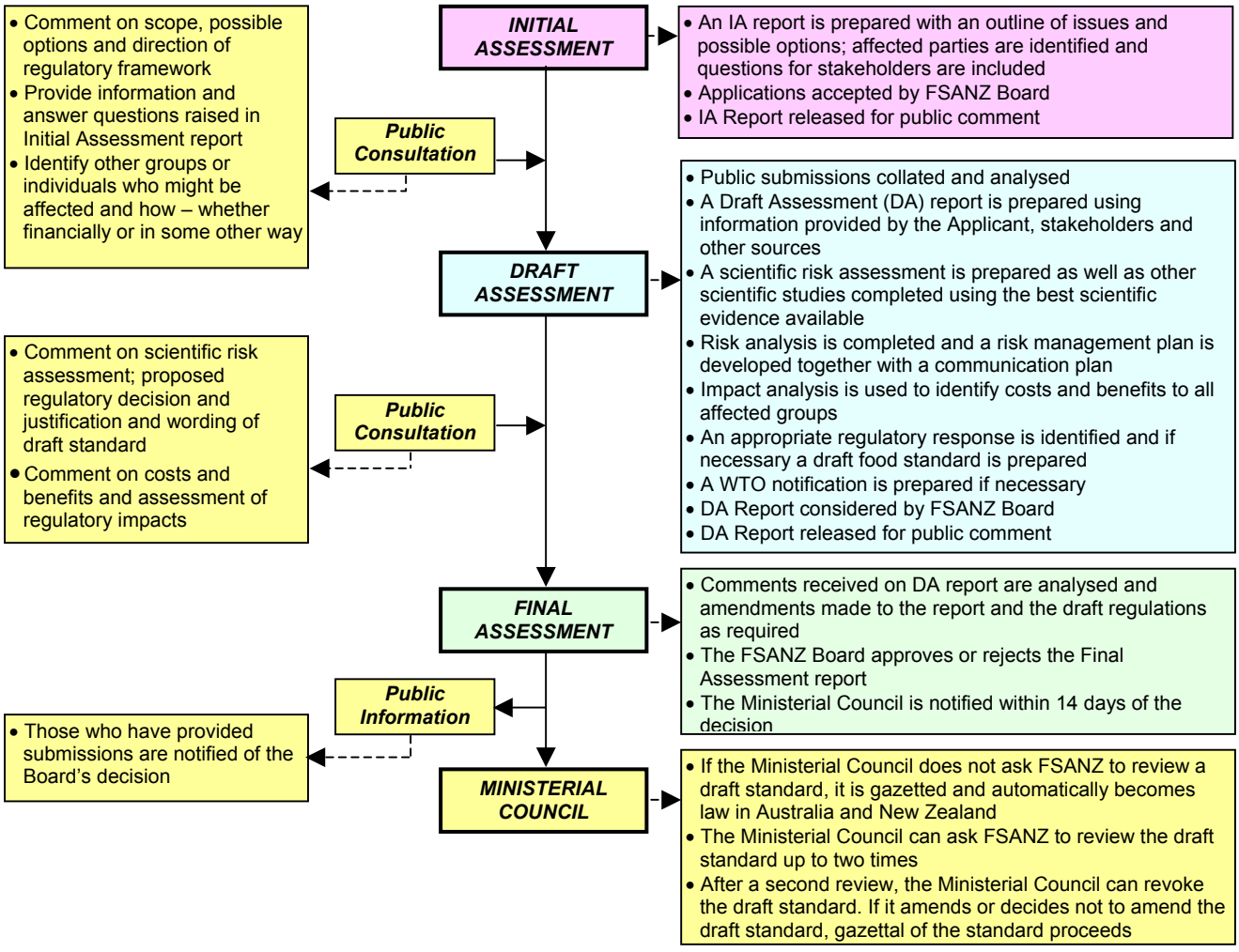
FOOD STANDARDS AUSTRALIA NEW ZEALAND (FSANZ)

FSANZ's role is to protect the health and safety of people in Australia and New Zealand through the maintenance of a safe food supply. FSANZ is a partnership between ten Governments: the Commonwealth; Australian States and Territories; and New Zealand. It is a statutory authority under Commonwealth law and is an independent, expert body.

FSANZ is responsible for developing, varying and reviewing standards and for developing codes of conduct with industry for food available in Australia and New Zealand covering labelling, composition and contaminants. In Australia, FSANZ also develops food standards for food safety, maximum residue limits, primary production and processing and a range of other functions including the coordination of national food surveillance and recall systems, conducting research and assessing policies about imported food.

The FSANZ Board approves new standards or variations to food standards in accordance with policy guidelines set by the Australia and New Zealand Food Regulation Ministerial Council (Ministerial Council) made up of Commonwealth, State and Territory and New Zealand Health Ministers as lead Ministers, with representation from other portfolios. Approved standards are then notified to the Ministerial Council. The Ministerial Council may then request that FSANZ review a proposed or existing standard. If the Ministerial Council does not request that FSANZ review the draft standard, or amends a draft standard, the standard is adopted by reference under the food laws of the Commonwealth, States, Territories and New Zealand. The Ministerial Council can, independently of a notification from FSANZ, request that FSANZ review a standard.

The process for amending the *Australia New Zealand Food Standards Code* is prescribed in the *Food Standards Australia New Zealand Act 1991* (FSANZ Act). The diagram below represents the different stages in the process including when periods of public consultation occur. This process varies for matters that are urgent or minor in significance or complexity.



INVITATION FOR PUBLIC SUBMISSIONS

FSANZ has prepared a Draft Assessment Report of Application A464; and prepared a draft variation to the *Australia New Zealand Food Standards Code* (the Code).

FSANZ invites public comment on this Draft Assessment Report based on regulation impact principles and the draft variation to the Code for the purpose of preparing an amendment to the Code for approval by the FSANZ Board.

Written submissions are invited from interested individuals and organisations to assist the Authority in preparing the Final Assessment for this Application. Submissions should, where possible, address the objectives of FSANZ as set out in section 10 of the FSANZ Act. Information providing details of potential costs and benefits of the proposed change to the Code from stakeholders is highly desirable. Claims made in submissions should be supported wherever possible by referencing or including relevant studies, research findings, trials, surveys etc. Technical information should be in sufficient detail to allow independent scientific assessment.

The processes of FSANZ are open to public scrutiny, and any submissions received will ordinarily be placed on the public register of FSANZ and made available for inspection. If you wish any information contained in a submission to remain confidential to FSANZ, you should clearly identify the sensitive information and provide justification for treating it as commercial-in-confidence. Section 39 of the FSANZ Act requires FSANZ to treat in-confidence, trade secrets relating to food and any other information relating to food, the commercial value of which would be, or could reasonably be expected to be, destroyed or diminished by disclosure.

Submissions must be made in writing and should clearly be marked with the word 'Submission' and quote the correct project number and name. Submissions may be sent to one of the following addresses:

Food Standards Australia New Zealand
PO Box 7186
Canberra BC ACT 2610
AUSTRALIA
Tel (02) 6271 2222
www.foodstandards.gov.au

Food Standards Australia New Zealand
PO Box 10559
The Terrace WELLINGTON 6036
NEW ZEALAND
Tel (04) 473 9942
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Submissions should be received by FSANZ **by 1 December 2004.**

Submissions received after this date may not be considered, unless the Project Coordinator has given prior agreement for an extension.

While FSANZ accepts submissions in hard copy to our offices, it is more convenient and quicker to receive submissions electronically through the FSANZ website using the Standards Development tab and then through Documents for Public Comment. Questions relating to making submissions or the application process can be directed to the Standards Management Officer at the above address or by emailing slo@foodstandards.gov.au.

Assessment reports are available for viewing and downloading from the FSANZ website. Alternatively, requests for paper copies of reports or other general inquiries can be directed to FSANZ's Information Officer at either of the above addresses or by emailing info@foodstandards.gov.au.

CONTENTS

EXECUTIVE SUMMARY AND STATEMENT OF REASONS **6**

STATEMENT OF REASONS 6

1. INTRODUCTION **7**

2. REGULATORY PROBLEM **7**

2.1 CURRENT REGULATIONS 7

3. OBJECTIVE **8**

4. BACKGROUND **9**

4.1 HISTORICAL BACKGROUND 9

5. RELEVANT ISSUES **9**

5.1 NARROWNESS OF CURRENT DEFINITION 9
5.2 OTHER USAGE OF THE TERM 'WHOLEGRAIN' 12

6. REGULATORY OPTIONS **13**

7. IMPACT ANALYSIS **13**

7.1 OPTION 1 14
7.2 OPTION 2 14
7.3 OPTION 3 14
7.4 IMPACT ANALYSIS 15

8. CONSULTATION **15**

8.1 WORLD TRADE ORGANIZATION (WTO) 16

9. CONCLUSION AND RECOMMENDATION **16**

10. IMPLEMENTATION AND REVIEW **16**

ATTACHMENT 1 - DRAFT VARIATION TO THE *AUSTRALIA NEW ZEALAND FOOD STANDARDS CODE* **17**

ATTACHMENT 2 - NUTRITION ASSESSMENT **18**

ATTACHMENT 3 - FOOD TECHNOLOGY REPORT **26**

ATTACHMENT 4 - SUMMARY OF SUBMISSIONS **31**

ATTACHMENT 5 - CONSUMER RESEARCH STUDIES RELEVANT TO CONSUMER UNDERSTANDING OF 'WHOLEGRAIN' **37**

Executive Summary and Statement of Reasons

This is a Draft Assessment Report only and based on available information provided by the Applicant. Public submissions are invited on this draft assessment report and will be used as part of the final assessment stage.

BRI Australia Ltd submitted an Application on 6 December 2001 of the Code to amend the definition of the term 'wholegrain'. This application may require amendments to Standard 2.1.1 Cereals and Cereal Products.

The Applicant considers that the definition in the Code of 'wholegrain' is too narrow, inconsistent with international practice and severely limiting for food manufacturers and potentially misleading for consumers. The Applicant also claims that the current definition is inconsistent with common usage and public health documents such as the Dietary Guidelines for Australians and the Australian Guide to Healthy Eating.

The Draft Assessment Report supports the recommendation to amend the definition of wholegrain (Attachment 1).

Statement of Reasons

- It is appropriate that the definition of 'wholegrain' be amended to reflect processing techniques that retain all of the original grain components.

- Inclusion of the proposed definition for 'wholegrain' in the Code is consistent with the growing awareness of the positive nutritional benefits that can be achieved through increased consumption of whole grains and their milled products, and the range of foods that can be included in the diet to obtain these benefits.

- Notwithstanding the amendment bringing 'wholemeal' into the definition of 'wholegrain', the definition of 'wholemeal' has been retained. This prevents the situation where 'wholemeal' products are required or encouraged to label the name of the product as a 'wholegrain' foods.

- None of the section 10 objectives of the FSANZ Act would be compromised by making this change.

1. Introduction

FSANZ received an Application from BRI Australia Ltd on 6 December 2001 to amend if necessary the definition of the term 'wholegrain' in Standard 2.1.1 – Cereals and Cereal Products.

This Application is at the draft assessment stage under section 15 of the FSANZ Act.

2. Regulatory Problem

The Applicant considers that the definition in Standard 2.1.1- Cereals and Cereal Products, in the Code of 'wholegrain' is too narrow, inconsistent with international practice and severely limiting for food manufacturers and potentially misleading for consumers. The Applicant also claims that the current definition is inconsistent with common usage and public health documents such as the Dietary Guidelines for Australians and the Australian Guide to Healthy Eating.

The Applicant suggests that the definition of the term 'wholegrain' in Standard 2.1.1 – Cereals and Cereal Products, be amended to –

> 'wholegrain is intact, dehulled, ground, cracked or flaked grains where the components - endosperm, germ and bran are present in substantially the same proportions as they exist in the intact grain'.

The Application relates to any foods made from grains such as breads, breakfast cereals, pasta, biscuits, oats, rice and grain-based snack foods.

The Applicant claims that most grain-based foods are nutritious and there is increasing evidence that consumption of wholegrain foods is associated with a range of health benefits not associated with consumption of refined foods. The Applicant contends that consumers need to be provided with sufficient information to enable them to make an informed choice in line with FSANZ's objective 'to provide adequate information relating to food to enable consumers to make informed choices and to prevent fraud and deception'.

2.1 Current Regulations

The current definition of the term 'wholegrain' in Clause 1 to Standard 2.1.1 - Cereals and Cereal Products, is:

'wholegrain means the unmilled products of a single cereal or mixture of cereals'.

Clause 1 also defines the term 'wholemeal' as:

'wholemeal means the product containing all the milled constituents of the grain in such proportions that it represents the typical ratio of those fractions occurring in the whole cereal'.

2.1.1 International

There is no international standard to define the term ‘wholegrain’.

2.1.2 United States

The US Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) do not define wholegrain.

The FDA permits food manufacturers to make the following health claim on wholegrain food products, as possibly reducing the risk of coronary heart disease:

> ‘Diet rich in wholegrain foods and other plant foods and low in total fat, saturated fat and cholesterol may reduce the risk of heart disease and some cancers’.

For the purpose of this health claim wholegrain foods must contain 51% or more of wholegrain ingredients (bran, germ and endosperm) by weight per reference amount, with dietary fibre 2.3g per 50g or 1.7g per 35g and the food must be low in fat.

A definition is provided by The American Association of Cereal Chemists (AACC) as follows:

> ‘Wholegrains shall consist of the intact, ground, cracked or flaked caryopsis, whose principal anatomical components –the starch endosperm, germ and bran are present in substantially the same relative proportions as they exist in the intact caryopsis’.

The definition was subsequently amended in March 2004 by the AACC as follows:

> ‘Whole cereal grains and foods made from them consist of the entire grain seed usually referred to as the kernel. The kernel is made of three components - the bran, the germ and the endosperm. If the kernel has been cracked, crushed or flaked, then in order to be called whole grain, it must retain nearly the same relative proportions of bran, germ and endosperm as the original grain.
>
> Whole grain ingredients may be used whole, cooked, milled into flour and used to make breads and other products, or extruded or flaked to make cereal products.’

This definition does not have a regulatory status in the United States or in Australia and New Zealand.

3. Objective

In developing or varying a food standard, FSANZ is required by its legislation to meet three primary objectives which are set out in section 10 of the FSANZ Act. These are:

- the protection of public health and safety;
- the provision of adequate information relating to food to enable consumers to make informed choices; and
- the prevention of misleading or deceptive conduct.

In developing and varying standards, FSANZ must also have regard to:

- the need for standards to be based on risk analysis using the best available scientific evidence;
- the promotion of consistency between domestic and international food standards;
- the desirability of an efficient and internationally competitive food industry;
- the promotion of fair trading in food; and
- any written policy guidelines formulated by the Ministerial Council.

4. Background

4.1 Historical Background

Proposal P180 (the review of Australian and New Zealand regulations to develop Standard 2.1.1 – Cereal and Cereal Products) included discussions and consultations relating to definitions, including 'wholegrain' and 'wholemeal'. A number of submissions were received including those from the Dietitians Association of Australia and Goodman Fielder, that supported the proposed definition of 'wholegrain' which was eventually gazetted as the current definition. The former ANZFA recommended the definition of 'wholegrain', noting in the Inquiry Report that manufacturers can still use the terms 'kibbled', 'cracked' and 'multigrain' provided that the terms are not false, misleading or deceptive. ANZFA did not define these terms in line with the general policy of minimizing unnecessary prescriptiveness.

Definitions for the terms 'wholegrain' and 'wholemeal' were included by ANZFA as it was considered that there was potential for misleading practices to occur if the terms were not distinguished.

5. Relevant Issues

5.1 Narrowness of current definition

The Applicant claims that the current definition for 'wholegrain' in Standard 2.1.1 leaves little if any cereal or bread formulation that could be counted as 'wholegrain' and means that a few breakfast cereals and crispbreads but virtually no breads, would qualify as 'wholegrain foods' no matter what criteria are used.

5.1.1 Evaluation

The current definition for term 'wholegrain' (refer to figure 1-A.) limits the term to apply only to the intact grain. Standard 2.1.1 currently defines 'wholegrain' to mean the unmilled products of a single cereal or mixture of cereals.

The draft definition of 'wholegrain' is:

wholegrain 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.

The draft definition of 'wholegrain' would widen the meaning of the term so that it would encompass the intact grain, dehulled grain, ground grain, cracked grain or flaked grains and include wholemeal (refer to figure 1- B.). The current definition of 'wholemeal' would be retained.

The definition of the term 'wholemeal' would still be distinct from the definition of the term 'wholegrain'. The term 'wholemeal' would be a subset member of the broader term 'wholegrain'. The draft definition for 'wholegrain' does not alter the integrity of the existing definition for 'wholemeal'.

The draft definition of the term 'wholegrain' and the current definition of the term 'wholemeal' would still distinguish between the two terms but broaden 'wholegrain' to include a wider range of particle sizes (providing same proportions of components present) and allow for dehulling (e.g. oats) (refer to Attachment 3 – Food Technology report).

Submissions received on the Application (Attachment 4) commented that a change in definition for 'wholegrain' could be confusing to consumers who could expect visible whole grains present in or on a product. FSANZ requested from the Applicant further information on consumer understanding of the terms 'wholegrain' and 'wholemeal' when used on food labels that would support an amendment to the current definition of 'wholegrain'. In addition, FSANZ also requested information on whether consumers identify the terms 'wholegrain' and/or 'wholemeal' as characterising ingredients of food products. In response, the Applicant provided consumer research studies relevant to consumer understanding of the term 'wholegrain' (Attachment 5).

The current definition does not take into account the different contextual uses of the word 'wholegrain'; rather, it defines whole grain not 'wholegrain'. Very few foods truly comply as 'intact grain' or 'whole grain' foods under the present definition. The effect of the current definition is too narrow and means that few, if any, cereal or bread formulations could be counted as 'wholegrain'. The effect of the current definition of 'wholegrain' is that a few breakfast cereals and crispbreads but virtually no breads, could be identified as 'wholegrain foods' by consumers.

It is important that in providing a definition of 'wholegrain' in the Code it is consistent with the false/misleading/deceptive conduct provisions of the Trade Practices Act (TPA) and Fair Trading Laws. The Australian Competition and Consumer Commission (ACCC) advised that the descriptor 'wholegrain' has not been specifically considered in the past or in the context of any investigation. Whether the revised definition proposed for 'wholegrain' under Standard 2.1.1 Cereals and Cereal Products, is considered inconsistent with the fair trading provisions or, for that matter, likely to result in a breach of the TPA, will ultimately depend on the circumstances of each case.

The Applicant's request to incorporate criteria for 'whole grain' labelling claims of 'Good source of whole grains' and 'Source of whole grains' that were previously provided in submissions to Proposal 234 – Nutrient Content and other related claims, were considered to be beyond the scope of Application A464.

The current definition for 'wholegrain' is inconsistent with Australian, New Zealand and international usage of the word. The Macquarie dictionary defines 'wholegrain' as – *adjective* - wholemeal.

It was submitted that the 'Westminster' (sic) dictionary defines whole as 'entire, not defective or imperfect, the entire thing, a complete system. It is considered that the draft definition of the term 'wholegrain' would ensure that the entire grain or complete system of components of the grain is included in the food.

The definitions for 'wholegrain' and 'wholemeal' in Standard 2.1.1 - Cereals and Cereal Products and the draft definition for 'wholegrain', are not prescribed names so use of terms such as 'multigrain', 'full', 'kibbled' and 'cracked' could continue to be used on labels to describe food products appropriately.

A. CURRENT DEFINITION

WHOLEGRAIN means the unmilled products of a single cereal or mixture of cereals.

WHOLEMEAL means the product containing all the milled constituents of the grain in such proportions that it represents the typical ratio of those fractions occurring in the whole cereal.

B. DRAFT DEFINITION

wholegrain 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.

Intact grain

Dehulled grain

Milled grain

Cracked grain

Flaked grain

Wholemeal
means the product containing all the milled constituents of the grain in such proportions that it represents the typical ratio of those fractions occurring in the whole cereal.

Figure 1. A comparison of the current and proposed draft definitions for the term 'wholegrain'.

5.2 Other usage of the term 'wholegrain'

The Applicant states that the common usage of the term 'wholegrain' refers to grain-based foods that contain all the components of the grain (bran, germ, and endosperm). This interpretation is reflected in The Dietary Guidelines for Australians which encourage consumers to -

> 'Eat plenty of breads and cereals (preferably wholegrain), vegetables (including legumes) and fruits'.

and the Australian Guide to Healthy Eating recommends consumption of -

> 'Wholegrain breads, breakfast cereals, brown rice and wholemeal pasta more often than white or refined varieties'.

The Applicant claims that the intent of these documents is not to direct consumers only to foods made from intact grains but to encourage consumption of foods that contain all the components of the grain.

5.2.1 Evaluation

The Nutrition assessment report (Attachment 2) concludes that it is recognised that the definitions of 'wholegrain' and 'wholemeal' are currently provided in the Code to produce two outcomes: regulating the composition of cereal products, and the prevention of misleading conduct through their use within ingredient lists.

In achieving these outcomes, the definitions provided in Standard 2.1.1 of the Code will need to address the spectrum of particle sizes into which whole intact grains can be processed.

Therefore, it is appropriate that the definition of 'wholegrain' be expanded to reflect processing techniques that retain all of the original grain components. Inclusion of the draft definition of 'wholegrain' in the Code is consistent with the growing awareness of the positive nutritional benefits that can be achieved through increased consumption of whole grains, and the range of foods that can be included in the diet to obtain these benefits.

Notwithstanding the amendment bringing 'wholemeal' into the definition of 'wholegrain', the definition of 'wholemeal' has been retained. The separate definition for 'wholemeal' provides for an appropriate choice of description of the name of the food on the label of a 'wholemeal product' rather than describing the product as a 'wholegrain product'.

It is preferable that manufacturers have the option to select the product identity that is most meaningful for consumers, supports nutrition education, and does not contribute to confusion at a retail level. The requirements for the appropriate labelling of the identity of the food are maintained by the draft definition for 'wholegrain' and the retained current definition of 'wholemeal'. A food product that was labelled for identity, as for example 'wholemeal bread', would be able to considered as a source of wholegrain because of the draft definition of 'wholegrain' proposed. It may not be appropriate to choose to describe a 'wholemeal bread' as 'wholegrain bread', as this description may not meet consumer expectations of the true identity of the product and this would be contrary to the Trade Practices Act.

Percentage labelling will be triggered where the term wholegrain is:

- mentioned in the name of a food;
- emphasised on the label of a food in words, pictures or graphics but will not apply where the term 'wholegrain' which, while mentioned in the name of the food, is not such as to govern the choice of the consumer, because the variation in the quantity is not essential to characterise the food, or does not distinguish the food from similar foods. This exemption is unlikely to apply to wholegrain products as quantities are likely to differ between similar foods.

Where percentage labelling is triggered for wholegrain products, the percentage declaration can appear anywhere on the label, but is most commonly declared in or near the ingredient list or near the name of the food.

Where percentage labelling is triggered for wholegrain products and the wholegrain product consists of an ingredient with a blend of wholegrain and non-wholegrain material, for example a product that contains flour as an ingredient which has a blend of wholegrain and white flour, the percentage of the wholegrain component will be required to be declared. Therefore, when the term 'wholegrain' is used on the label, in the majority of cases it would trigger percentage labelling which should overcome false, misleading and deceptive conduct.

In addition, the label on a package of food (where the food does not have a prescribed name) must include a name or description of the food sufficient to indicate the true nature of the food in compliance with Trade Practice Act provisions. Therefore, a manufacturer cannot use the term 'wholegrain' in the name of the food or to describe the food where the food contains very little wholegrain.

6. Regulatory Options

Options available are:

Option 1. Reject the Application pursuant to section 15A(1)(b) of the *Food Standards Australia New Zealand Act 1991*;

Option 2. Accept the Application and prepare a Draft Assessment Report to consider amending Standard 2.1.1 Cereal and Cereal Products, by providing a different definition for 'wholegrain'.

Option 3. Accept the Application and prepare a Draft Assessment Report to consider amending Standard 2.1.1 Cereal and Cereal Products, by removing the definition for 'wholegrain'.

7. Impact Analysis

Parties affected by the options outlined above include:

1. Those sectors of the food industry manufacturing and selling foods made from grains such as breads, breakfast cereals, pasta, biscuits, oats, rice and grain-based snack foods. Changes to the definition of 'wholegrain' may result in labelling changes to grain based foods offered for sale to consumers.

2. Consumers of foods containing wholegrain ingredients.

3. Government agencies enforcing the food regulations.

7.1 Option 1

Reject the Application pursuant to section 15A(1)(b) of the FSANZ Act.

AFFECTED PARTY	**BENEFITS**	**COSTS**
Government	No perceived benefits	No perceived costs.
Industry	No perceived benefits	Cost to industry in not having a wider definition of 'wholegrain' that includes kibbled, cracked and wholemeal. Foods that are considered by nutritionists to be good sources of 'wholegrains' may not be permitted to be labelled appropriately.
Consumers	No perceived benefits	Consumers may potentially be misled or confused when identifying 'wholegrain' foods. This may impact on public health as dietary guidelines recognise the importance of wholegrain food in the diet.

7.2 Option 2

Option 2. Accept the Application and prepare a Draft Assessment Report to consider amending Standard 2.1.1 – Cereal and Cereal Products by providing a different definition for 'wholegrain'.

AFFECTED PARTY	**BENEFITS**	**COSTS**
Government	No perceived benefit.	No perceived cost other than the cost of amending the Food Standards Code.
Industry	A change in definition may allow a wider range of food produced by manufacturers to meet the definition of 'wholegrain'.	No perceived costs.
Consumers	Consumers may have an improved public health benefit of being able to identify 'wholegrain' foods by a more appropriate definition.	Some submissions were concerned that there would not be a distinction maintained between 'wholemeal' and 'wholegrain' and this could have health costs eg in relation to Glycaemic Index. Notwithstanding the amendment bringing 'wholemeal' into the definition of 'wholegrain', the definition of 'wholemeal' has been retained and presents no perceived health costs to consumers. This prevents the situation where 'wholemeal' products are required or encouraged to label the name of the product as a 'wholegrain' food.

7.3 Option 3

Option 3. Accept the Application and prepare a draft amendment to Standard 2.1.1 – Cereal and Cereal Products by removing the definition for 'wholegrain'.

AFFECTED PARTY	**BENEFITS**	**COSTS**
Government	No perceived benefits	No perceived cost other than the cost of amending the Food Standards Code.
Industry	No perceived benefits.	Industry would be restricted by not having a clear and broader definition of 'wholegrain' and this may impact on public health as dietary guidelines recognise the importance of wholegrain food in the diet.
Consumers	No perceived benefits	Consumers may not be informed of a clear definition of 'wholegrain'. This may impact on public health as dietary guidelines recognise the importance of wholegrain food in the diet.

7.4 Impact Analysis

Maintaining the *status quo* (Option 1) appears to provide no benefit to the government, industry and consumers. Option 1 maintains the current definition for 'wholegrain' which excludes wholemeal flour, kibbled or cracked grains and dehulled grains to be considered as wholegrain. The current definition is narrow, inconsistent with international use and potentially misleading to consumers.

Option 2, which proposes to amend the definition for 'wholegrain', provides benefits to both consumers and industry in Australia and New Zealand. Some submissions were concerned that there would not be a distinction maintained between 'wholemeal' and 'wholegrain' and this could have health costs eg in relation to Glycaemic Index. Notwithstanding the amendment bringing 'wholemeal' into the definition of 'wholegrain', the definition of 'wholemeal' has been retained. The separate definition for 'wholemeal' provides for an appropriate choice of description of the name of the food on the label of a 'wholemeal product' rather than describing the product as a 'wholegrain product'. It presents no perceived health cost to consumers.

Option 3 which proposes to delete the current definition of 'wholegrain' would still allow industry permission to use the term 'wholegrain' on food labels. There is less potential for consumers to be misled or deceived by labelling of wholegrain foods if the term is clearly defined in Standard 2.1.1 Cereal and Cereal Products. Industry is guided by the provision of a broad definition of 'wholegrain' in the Code, that still distinguishes the term from 'wholemeal' so as to reduce the potential for misleading practices and to comply with the TPA and Fair Trading Laws.

Assessment of the costs and benefits of Options 1, 2 and 3 indicates that there would be a net benefit in amending the definition of 'wholegrain'. Therefore, option 2 is the preferred option.

8. Consultation

Twenty submissions were received in response to the Initial Assessment Report (Attachment 4). Six submissions supported Option 1. Thirteen submissions supported option 2. One submitter reserved providing comments until after the Draft Assessment.

8.1 World Trade Organization (WTO)

As members of the World Trade Organization (WTO), Australia and New Zealand are obligated to notify WTO member nations where proposed mandatory regulatory measures are inconsistent with any existing or imminent international standards and the proposed measure may have a significant effect on trade.

Amending the Code to change or remove the definition for 'wholegrain' is unlikely to have a significant effect on trade. No notification will be made in accordance with the WTO Technical Barrier to Trade (TBT) or Sanitary and Phytosanitary Measure (SPS) agreements.

9. Conclusion and Recommendation

The Draft Assessment Report supports the recommendation to amend the definition of wholegrain (Attachment 1). None of the section 10 objectives of the FSANZ Act would be compromised by making this change.

It is appropriate that the definition of 'wholegrain' be amended to reflect processing techniques that retain all of the original grain components and to allow for dehulling. Inclusion of the proposed 'wholegrain' definition in the Code is consistent with the growing awareness of the positive nutritional benefits that can be achieved through increased consumption of whole grains, and the range of foods that can be included in the diet to obtain these benefits. Notwithstanding the amendment bringing 'wholemeal' into the definition of 'wholegrain', the definition of 'wholemeal' has been retained. The separate definition for 'wholemeal' provides for an appropriate choice of description of the name of the food on the label of a 'wholemeal product' rather than describing the product as a 'wholegrain product'.

10. Implementation and review

The amended definition of 'wholegrain' would become effective upon gazettal.

ATTACHMENTS

1. Draft variation to the *Australia New Zealand Food Standards Code*
2. Nutrition Assessment
3. Food Technology report
4. Summary of issues raised in public submissions
5. Consumer Research Studies relevant to consumer understanding of 'wholegrain'

Attachment 1

Draft variation to the *Australia New Zealand Food Standards Code*

To commence: On gazettal

[1] ***Standard 2.1.1*** *of the Australia New Zealand Food Standards Code is varied by –*

[1.1] *omitting from clause 1 the definition of* wholegrain*, substituting –*

wholegrain 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.

Attachment 2

Nutrition Assessment

Application A464 seeks to amend the definition of 'wholegrain' in Standard 2.1.1 – Cereals and Cereal Products in the Code from –

> '**wholegrain** means the unmilled products of a single cereal or mixture of cereals.'

to –

> '**wholegrain** is the intact grain or the dehulled, ground, milled, cracked or flaked grain where the components - endosperm, germ and bran - are present in substantially the same proportions as they exist in the intact grain, and includes wholemeal.'

A definition of 'wholemeal' is also given in Standard 2.1.1:

> '**wholemeal'** means 'the product containing all of the milled constituents of the grain in such proportions that it represents the typical ratio of those fractions occurring in the whole cereal'.

The Application has sought no specific amendment to the definition of 'wholemeal', instead requesting that 'wholemeal' be considered a subset of the definition for 'wholegrain'.

The processing techniques encompassed by this Application are unlikely to have a negative impact on the nutrient profile of grain-based foods, as these processing methods do not involve the removal and extraction of a grain's bran layer. It is only when the bran layer has been partially or completely separated out that the resultant grain will contain a reduced micronutrient and fibre content (Reddy and Love, 1999, Slavin et. al., 2001). Therefore, further consideration has not been given in this assessment to the impact of processing methods on the nutrient composition of cereal grains.

The main focus of nutrition assessment will instead be to review the proposed amendment and its implications for public health, including the impact on nutrition education. Particular attention has been given to:

- submitter comments on nutrition issues;
- the scientific literature on nutritional and health implications from consuming grains of differing particle sizes, and from consuming *wholegrain* foods in general;
- whether certain medical conditions will be contraindicated by the changes proposed in the Application; and
- how consumers perceive the term *wholegrain*.

Throughout this assessment, the meaning of the terms 'wholegrain' and 'wholemeal' will be used as currently defined in Standard 2.1.1 of the Code. Other forms such as italics or without the punctuation marks take their meaning from the surrounding context.

Nutritional Issues Raised in Public Submissions

During the round of public comment to the Initial Assessment for A464, several submissions commented on the nutritional implications of the proposed amendment; and a diversity of views, both supporting and opposed were expressed.

Only two out of a total of 20 submitters supported retaining the current definitions of 'wholegrain' and 'wholemeal' on the grounds of nutritional concerns. These concerns related to the impact on the glycaemic index (GI); the health benefits of whole intact grains; and the implications for certain medical conditions if the proposed amendment was introduced. Four submitters representing nutritionists / nutrition organisations were in support of the proposed definition for 'wholegrain' on public health grounds. However, these four submitters did not comment on the definition of 'wholemeal', or the compatibility of the proposed definition changes with public nutrition education messages.

Of the remaining 16 submissions, no comments were made specifically on the impact on nutrient intakes, dietary patterns, or nutrition education that would result from the definition changes proposed by the Application.

Scientific Literature Associated with the Consumption of Grain-Based Foods

There are two key areas of research associated with the consumption of grain-based foods that are of relevance to this Application:

- The influence of *wholegrain* foods on the risk of developing various chronic illnesses.
- How variations in the particle size of grains influences their digestion, particularly the impact on the GI. The findings on the GI are relevant for this application, as the proposed definition for 'wholegrain' encompasses all grain-based foods where the original grain components are present at any particle size, including 'wholemeal' foods.

The Definition of Wholegrain Used Within Scientific Literature

The health outcomes observed with the consumption of *wholegrain* foods are generally identified as applying to foods containing all the components of a cereal grain. However, ambiguity exists within this research as to the intended definition of *wholegrain,* and to the exact nature of the foods to which the identified health outcomes are attributed.

Often the term *wholegrain* is applied as broadly as possible in scientific literature, and most commonly refers to unrefined cereal and cereal products irrespective of their grain particle size. In some studies, grains containing separated components such as the bran or germ are included within the category of *wholegrain* (Jacobs et. al. 1998a, Jacobs et. al. 1998b, Slavin 2000). No studies have been identified that assess whole intact grains in isolation, nor have any studies been identified where a comparison has been made between diets containing different amounts of whole intact grains and whole grains of a smaller particle size.

The ambiguity existing in the literature creates difficulty in the interpretation of results, particularly when attempting to compare results between grain-based foods of differing particle sizes. Therefore, in assessing the scientific literature on this subject, the term *wholegrain* has been considered to encompass wholemeal products unless further clarification had been provided within the literature.

Wholegrain Consumption and Chronic Illness

Over the last ten years, a growing body of evidence has developed in support of a link between intake of *wholegrain* foods (however defined) and a reduction in the risk of developing certain chronic illnesses.

The greatest volume of research in this area relates to the impact of *wholegrain* consumption on coronary heart disease (CHD). It is well documented that the rates of death from, and risk of developing CHD can be reduced with an increased consumption of wholegrain foods (Anderson et. al. 2000, Liu et. al 1999, Liu et. al. 2003, Truswell 2002). Of particular note are the results of the Iowa Women's Health Study conducted between the period 1986 -1995 (Jacobs et. al. 1998a). The results of this study on 34492 postmenopausal women demonstrated that there is an inverse relationship between wholegrain intake and the risk of / death from CHD, and that the results were not attributable to the intake of specific grain constituents such as dietary fibre.

Significant findings have also been identified with the intake of *wholegrain* foods and the risk of developing cancer. Positive benefits have been predominantly observed with the risk of developing colorectal cancer, although limited evidence has demonstrated that the risk of developing prostate and breast cancer may be reduced through increased *wholegrain* intake (Jacobs et. al. 1995, Jacobs et. al. 1998b, Livesey et. al. 1995, McIntosh 2001).

The findings on other chronic illnesses are not as strong as those for CHD and cancer. Some literature is available indicating that an increased *wholegrain* intake may decrease the risk of developing diabetes, however, these studies have not controlled for the GI and this area of research is still progressing (Liu 2000, Meyer et. al 2000, Willet et. al. 2002).

Grain Particle Size and Impact on Nutrient Digestibility

Changes in particle size that occur from various processing methods do not impact on the nutrient composition of a cereal, so long as all constituents of the original grain are present. However, physical characteristics can affect the digestion of a cereal, and will therefore have an impact on its GI value.

The GI is a relative measure of the change in blood glucose levels following the consumption of a meal, food or single ingredient containing carbohydrate in an amount equivalent to the carbohydrate in a reference food (either glucose or white bread). Two hours after consumption, a higher GI food will produce a higher peak in blood glucose than a lower GI food (Foster-Powell et. al., 2002). Consumption of low GI foods has been strongly associated with improved clinical outcomes for a number of chronic illnesses, especially for diabetes (Augustin et. al. 2002, Jenkins et. al. 2002, Rizkalla et. al. 2002, Willet et. al. 2002).

Whole intact grains are typically considered to have a low GI, and the term *wholegrain* is commonly used to describe those cereals that are recommended for inclusion a low GI diet, particularly for the diet of diabetics (Katsilambros 2001).

The most recent published literature (see Table 1 below) reports that the majority of whole intact grains have low GI values, and that processing methods such as rolling increases the GI.

Although the data varies between cereal types and according to different processing techniques, there is a consistent inverse relationship between particle size and the GI value (Foster-Powell et. al., 2002, Jenkins et. al., 1988). If a cereal product contains grains only in the form of a flour or meal (including both white and wholemeal forms), there is a substantial and consistent increase in GI values across all cereal types when compared to the GI value of the intact, unprocessed cereal grain. Mixtures of flour and intact grains have GI values in between the values of each of the individual components.

It is therefore concluded that in general, the smaller the cereal grain particle derived from whole grains, the higher the GI value of foods containing or comprising of those particles.

Table 1: The Glycaemic Index (GI) of various Cereals and Cereal Products (Foster-Powell et. al., 2002)

Cereal Product *	GI (glucose = 100)	GI (bread = 100)
Unprocessed grains (listed by increasing GI)		
Rye	34 ± 3	42 ± 7
Wheat	41 ± 3	59 ± 3
Barley: *Hordeum vulgare*	43 ± 6	61 ± 8
Sweet corn	53 ± 4	78 ± 6
Brown rice	55 ± 5	79 ± 6
Processed - unrefined grains (listed by increasing GI)		
Cracked grains - wheat	48 ± 2	68 ± 3
- barley	50	72 ± 7
Rolled grains - rye	66 ± 5	94
Processed - refined grains (listed by increasing GI)		
Pearled barley	25 ± 1	36 ± 2
White rice	64 ± 7	91 ± 9
Cornmeal	69 ± 1	98 ± 1
Bread (listed by increasing GI)		
With - 75-80% whole barley kernels, 20-25% and white wheat flour	34 ± 4	48 ± 9
- 50% whole barley kernels **	43	62 ± 4
- 50% kibbled barley **	48	69 ± 7
- 80% rye kernels, 20% white flour	50 ± 4	71 ± 7
- 80% whole wheat kernels, 20% white flour	52	74 ± 7
- 50-75% cracked wheat kernels (bulgur) **	53 ± 3	76 ± 4
Multi-grain - spelt wheat	54 ± 10	77 ± 14
Wholemeal - rye	58 ± 6	83 ± 8
- spelt wheat	63	91
- barley	70	100
White - wheat	70	101
Wholemeal - wheat	71 ± 2	101 ± 3

* Other cereal types have not been included due to the lack of data on differentially processed forms.

** The percentage and type of flour used in these breads is unspecified.

The Overall Trend Within the Scientific Literature

Available scientific literature indicates that there is a significant positive influence on health outcomes from consuming foods containing all of the components found within cereal grains. However, this influence should be qualified, as recent advances in knowledge on the GI have demonstrated that including grains in a food at a particle size consistent with 'wholemeal' flour increases the product's GI value in comparison to the original, whole grain.

The Impact of *Wholegrain* Consumption on Certain Medical Conditions

The New Zealand Dietetic Association raised the issue in their submission that whole grains are contraindicated for irritable bowel disease (IBD), and that only grains processed to the particle size of flour are suitable for these conditions. There is evidence in support of this argument (IDF 2003), and thus changing the current regulatory distinction between 'wholemeal' and 'wholegrain' may potentially affect the management of these conditions.

However, in considering the impact on IBD, the necessity to have professional dietary management and advice has also been taken into account. Such supervision will assist in the identification of appropriate cereal products for patients with IBD, and thus mitigate the risk from inappropriate intakes of unsuitable foods.

The Term *Wholegrain* and Nutrition Education

The Application provided supporting evidence for the use of the term *wholegrain* in authoritative government dietary guidance, specifically the Australian Dietary Guidelines and the Australian Guide to Healthy Eating[1]. In describing desirable groups of foods, these documents apply *wholegrain* respectively to breads and cereals, or to breads and breakfast cereals; but not to brown rice or 'wholemeal' pasta. While *wholegrain* has been generically applied to the cereal-based food group as a simple description, the term *wholemeal* has also been used but confined to products made from 'wholemeal' flour. There is no clear understanding of the reference foods that the authors intended the term *wholegrain* to encompass in these dietary recommendations; in some cases 'wholemeal' is included, and in other cases it is not.

Consumers appear to be confused as to the identity of *wholegrain* foods and ingredients. The Application cites two Australian consumer surveys in support of this view. In a 1999 study, 720 of 1200 subjects could not identify any physical differences between *wholegrain* and refined cereals; and in market research conducted in 2000, only 24% of 700 respondents could name a *wholegrain* food without prompting[2]. Historically, the term *wholegrain* has not been widely used in Australian and New Zealand general parlance, whereas *wholemeal* is a considerably more familiar term, usually applied in relation to foods made solely from whole grains processed into a flour.

Consumer confusion with the term *wholegrain* has also been recognised in the United States, as illustrated by Kantor et. al. 2001:

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[1] Copies of these documents can be obtained by contacting the Australian Department of Health and Aging on +61 2 6289 1555 or from the internet at http://www.health.gov.au/pubhlth/strateg/food/index.htm.

[2] Information on this research is available from the internet at http://www.gograins.grdc.com.au/grainsnutrition/ie/16frame.html.

> Assessment of wholegrain intakes is also hampered by the variety of terms used to describe wholegrain foods. Labelling of wholegrain ingredients is often unclear and inconsistent. As a result, many consumers are unable to correctly identify wholegrain foods in the marketplace or accurately report consumption of wholegrain foods in food intake surveys.
>
> Some foods, such as brown rice or whole-wheat [i.e. wholemeal] spaghetti, may be fairly easily identified by consumers as wholegrain foods, but processed products with multiple ingredients, such as breads, crackers and other baked goods, may cause confusion. For example, breads labelled 'multigrain', 'nine-grain' or 'made with wholegrain' may contain some wholegrain ingredients, but typically are made primarily with enriched wheat flour and do not offer the same fibre and other health benefits available from products made mostly from whole grain. Also, many consumers mistakenly believe that a dark or brown colour, such as that found in pumpernickel and rye breads, denotes a wholegrain product, when, in fact, these breads are made mostly with enriched wheat flour and caramel or other added colouring.

Contributing further to community confusion has been the recent use of the term 'grain' in bread-type products such as multi-grain bread, which lends support to the idea that consumers expect a food described as *wholegrain* to contain discernable grain pieces. These consumer expectations have the potential to create a discrepancy between regulation and the intended outcome at a retail level, if the definition of 'wholegrain' is structured in a manner that requires or encourages the labelling of grain-based foods of a uniform consistency (i.e. 'wholemeal' foods) as *wholegrain*. For example, 'wholemeal' pasta uses flour produced from the entire wheat kernel; the promotion of this food as *wholegrain* pasta may be inappropriate, as such a product contains no visible grain, nor would consumers expect this to be the case.

The inability for consumers to distinguish between 'wholemeal' and *wholegrain* products also has implications for public health. As discussed above, 'wholemeal' foods are associated increasing the GI value of the foods to which they are added. Any negative impact on public health from associating high GI foods with the term *wholegrain* can be offset though, if this association were to also promote an overall shift in consumption to a generic range of *wholegrain* foods. However, nutrition education strategies that promote such a shift will achieve the most beneficial results in an environment where consumers are still able to identify high GI 'wholemeal' products from lower GI grain-based foods.

Therefore, to prevent consumers from misconstruing the true nature of foods referred to as *wholegrain,* and to encourage the most appropriate public health and nutrition practices within the community; any change to the definition of 'wholegrain' must ensure that 'wholemeal' foods can continue to remain identifiable at a retail level.

The Application has also referred to the possible future development of claims for 'source' and 'good source' of total ingredients derived from whole grains, or the possible development of a health claim on *wholegrain* foods. Although it is not in the scope of this assessment to address the subject of claims on food labels, it is recognised that any definition provided in Standard 2.1.1 will influence the development of future criteria (including nutritional and compositional criteria) for any permission to place a wholegrain related claim on food labels.

Conclusion

It is recognised that the definitions of 'wholegrain' and 'wholemeal' are currently provided in the Code to produce two outcomes: regulating the composition of cereal products, and the prevention of misleading conduct through their use within ingredient lists.

In achieving these outcomes, the definitions provided in Standard 2.1.1 of the Code will need to address the spectrum of particle sizes into which whole grains can be processed.

Therefore, it is appropriate that the definition of 'wholegrain' be expanded to reflect processing techniques that retain all of the original grain components. Inclusion of the proposed amendment to the definition of 'wholegrain' in the Code is consistent with the growing awareness of the positive nutritional benefits achieved through an increased of *wholegrain* intake, and the range of foods that can be included in the diet to obtain these benefits.

However, it is important that any regulatory amendment maintains an appropriate delineation between *wholegrain* and *wholemeal*, and thus prevents the situation where 'wholemeal' products are required or encouraged to label as *wholegrain* foods. It is preferable that manufacturers have the option to select the product identity that is most meaningful for consumers, supports nutrition education, and does not contribute to confusion at a retail level.

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Attachment 3

Food Technology Report

Structure of cereals

In Australia and New Zealand the most commonly consumed cereal is wheat. Other cereals of importance include barley, oats, maize, rye, millet, and rice.

In most cereals a single layer of square, thick-walled aleurone cells encase the endosperm, except between the scutellum (part of the wheat germ) and the endosperm (Figure 1). Intact aleurone cells can easily be detected under the microscope in white flour because of their characteristic shape. Botanically, the aleurone layer is the outer layer of the endosperm but, as it tends to remain attached to the bran layers during milling, it is considered by the miller as part of the bran.

The outer bran layers include the cuticle, mesocarp, cross layers, tub cells and testa (Figure 1). The bran layers function to protect the grain. They are rich in dietary fibre and minerals.

The germ consists of two parts, the embryo, which is made up of a rudimentary root and shoot, and the scutellum, which stores food for the embryo. When germination occurs, the scutellum becomes an organ for absorbing and digesting food from the endosperm and transferring it to the growing plant. The embryo, being a separate and distinct structure, can be readily separated from the rest of the grain but there appears to be a 'cementing layer' between scutellum and endosperm.

Although less than 3% of the whole grain by weight, the germ is a concentrated source of oils or lipids, which amount to about 10% of the germ and include a high proportion of unsaturated fatty acids. It also contains about 14% sugars, chiefly sucrose and raffinose. The scutellum is similar in composition to the embryo but the scutellum contains virtually all the thiamin present in the germ and much of the minerals, especially phosphorous.

The adherent husk of the oat grain, like that of the barley grain, is tough and fibrous, and quite inedible. It must therefore be removed in a special shelling process during the manufacture of edible products, for which the kernel is required. The chaff of wheat, which corresponds morphologically with the husks of oats, comes away easily during threshing. Similarly the commercial milling of rice comprises cleaning, shelling or dehulling, and a process in which the bran and germ are partially or wholly removed by an abrasive scouring or pearling process.

Milling process

The main aim of the milling process is to separate the maximum amount of endosperm (flour) from the non-endosperm material (bran and germ). The amount of non-endosperm material included in flour influences not only its colour, visual appearance and ash content but also its functional properties for end users due to a complex series of physical and chemical interactions. Flour produced from an entire wheat kernel is also known as 'Graham Flour'. The milling system of cereals differs according to the differences in anatomical structure of the cereal.

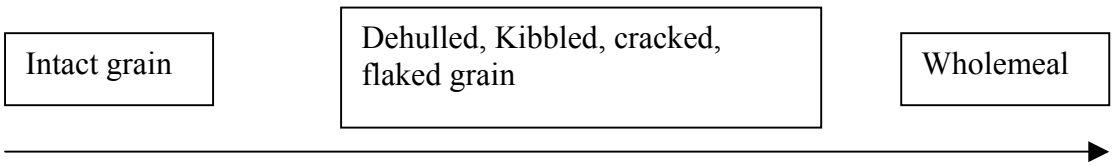
The steel roller milling system for the production of flour aims to open up the grain, remove the bran layers and the germ and to grind the pure endosperm into flour.

To achieve this a series of grindings and separations are employed, the gradual nature of which is designed to produce white flour having a minimum of bran and germ content. The milling system can be divided into three distinct stages (1) a breaking operation; (2) a series of separations of the ground components by means of both particle size and density; and (3) a size reduction system.

The milling system contains two types of rolls, break rolls, which are fluted, and reduction rolls, which are smooth. The break rolls function to open up the structure, whereas the reduction rolls reduce the particle size.

Each grinding stage yields a 'grind' consisting of a mixture of course, medium, and fine particles, including a proportion of flour. The different size particles are sorted by sifting. Some of the course particles are potentially flour yielding: they are conveyed to a subsequent grinding stage; others can yield no useful flour; these are removed from the milling system and contribute to the milling by-products.

To describe how much of the wheat grain is found as flour after the milling the term 'extraction rate' is used. An extraction rate of 100% signifies that 100% of the wheat grain is delivered as flour; this flour could be described as a whole wheat meal. The bulk product from the mill, the straight-grade flour, generally represents an extraction of around 70%.



Cereal Products

Grains, flour and other milling products are used to produce a very wide range of food products, including bread, cakes, pastries, biscuits, pasta, noodles, breakfast cereals, cereal bars, snack foods etc. A few examples of these product processes are briefly described below.

Bread

White bread is made from white wheat flour which has been milled at a high extraction rate. Wholemeal bread (also labelled wheatmeal or wholewheat) is baked from wholemeal flour. Brown bread is usually made from a mixture of wholemeal flour and white flour. Mixed grain bread (multigrain) is made with a mixture of wholemeal and/or white flour, rye meal and/or flour with cracked or kibbled grains which stand out in the slice. Fibre increased breads have extra fibre (in the form of wheat, oat bran, or soy hulls) to increase the fibre content of the bread.

Breakfast cereals

These products may include flaked, puffed, shredded and granular products. They are generally made from wheat, maize, or rice, although oats and barley are also used. Some breakfast cereals are prepared by processes that tend to cause dextrinisation of the starch.

For flaked products, wheat, maize (corn flakes) or rice are generally used. The whole wheat or rice grain is cleaned and conditioned to a suitable moisture content, and lightly rolled between smooth rolls to fracture the outer layers. The preparation is then cooked often at elevated temperatures. The conditioned grain is flaked on heavy flaking rolls and may be baked or toasted.

For puffed products wheat, rice or oat grains are prepared by cleaning, conditioning and depericarping (by a wet scouring process). Alternatively, a dough made from the flour is cooked under pressure and extruded through a die. A batch of the prepared dough is fed into a pressure chamber, sealed and heated by steam so that the internal pressure rapidly builds up. The pressure is then rapidly released resulting in a puffed product.

For shredded products a grain such as wheat is cleaned and then cooked with water. The cooking conditions are such that the cooked grain is soft and rubbery and the starch is fully gelatinized. The cooked grain is cooled and fed to shredders consisting of a pair of metal rolls. The shreds are then baked.

For granular products a yeasted dough is made from wholemeal flour and/or white flour. The dough is fermented and baked. The loaves are broken up, dried and ground to a standard fineness.

Pasta and noodles

Pasta generally refers to ‘Italian style’ extruded products such as spaghetti and macaroni which are made from coarse semolina milled from durum wheat. Noodles are generally made from bread wheat flour (with finer particle sizes than semolina) by a process of sheeting and cutting. There are a wide range of noodles and pasta that have different wheat quality requirements. Noodles are also made from a variety of other cereals.

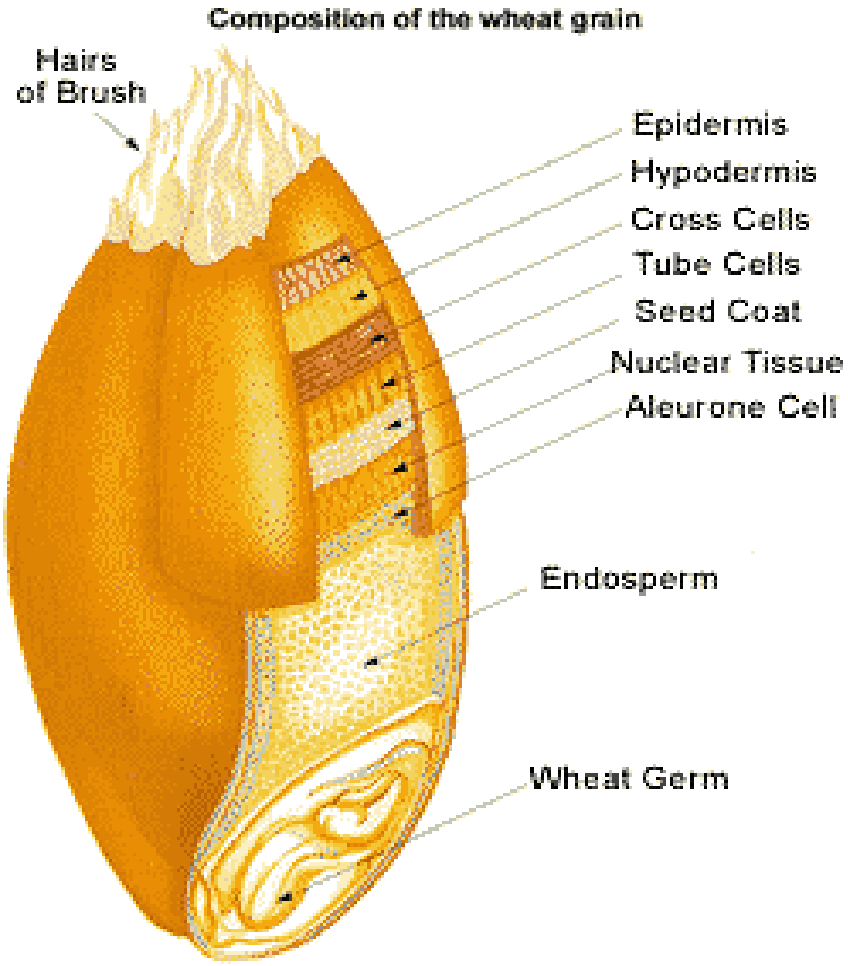


Figure 1. Structure of wheat grain

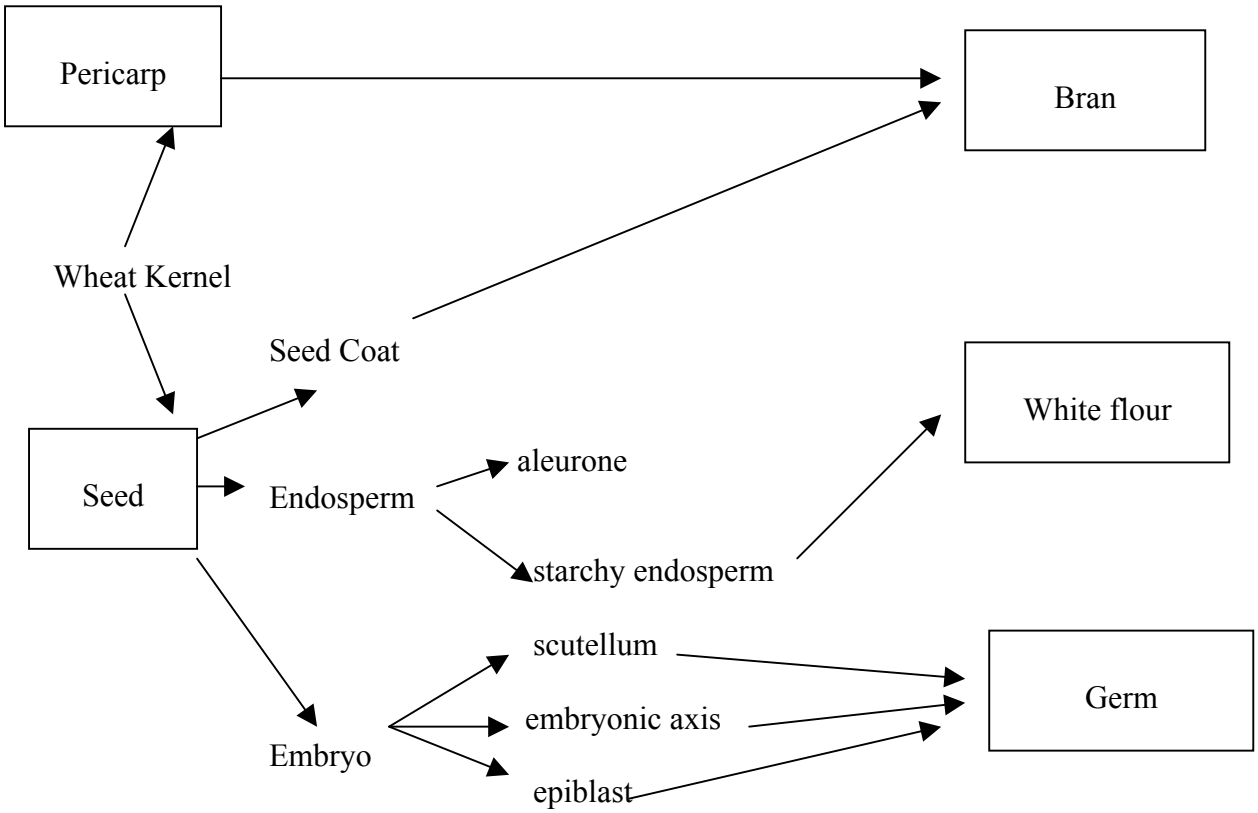


Figure 2. The relationships between the physiological and technological parts of the wheat kernel.

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Attachment 4

Summary of submissions

Submitter	Comments
Food Technology Association of Victoria Inc.	•Supports Option 1 – reject Application; •current definitions of 'wholegrain' and 'wholemeal' are satisfactory; •rejection of Application does not diminish the choice available to consumers; •a change in definition could be confusing to consumers who could expect to see actual whole grains present in or on a product; •what is the difference between 'ground' wholegrain and 'wholemeal' as currently defined; •the adoption of one of either Option 2 or 3 would remove the word 'wholemeal' from the Standards and current 'wholemeal' products would be left without a definition; •the word 'wholegrain' tends to indicate that 'whole' grains are actually present/visible; •'wholegrain' pasta would be a misnomer as it would only contain ground wholegrain; •a manufacturer who wished to use the descriptor 'wholegrain' on a product that actually contains ground wholegrain would have to describe this use in the ingredient list or elsewhere on the label to obviate a false description; •the current definition permits innovation, variety and flexibility without hindrance or loss; •traditional 'wholemeal' products would be disadvantaged; and •there is no perceived loss to manufacturers by rejecting the Application.
Peter N. Ness	•supports Option 1 to reject Application; •the current definition is self-explanatory to consumers; •an exclusively wholegrain product means that it does not contain milled grains; •to permit 'wholegrain' to be synonymous with 'wholemeal' would mislead the consumer; and •wholemeal products usually have a lower Glycemic Index (GI) than wholemeal products, which has implications for diabetics and others who need to control their blood glucose levels.

National Council of Women of Australia	• supports Option 1 – reject Application; • Westminster dictionary defines whole as 'entire, not defective or imperfect, the entire thing, a complete system. Similarly defines wholemeal as pertaining to flour which contains the whole of the grain, including the 'germ' the vital structure from which a new plant will grow under favourable conditions; • proposed definition indicates some degree of process and this runs counter to the definition of wholegrain which is the unmilled product; and • altering the definition will mislead or deceive the consumer into believing they are purchasing a wholegrain product when in fact they are purchasing something less than that.
Queensland Public Health Services	• supports Option 1 reject Application; • the term 'wholegrain' is adequately defined in the current definition; • consumers in general understand that 'wholegrain' relates to the unmilled products of a single cereal or mixture of cereals. • compositional standards for bread need to be replaced within the Code; and • nutritionists recommend the consumption of wholegrain products because they contain more of the original vitamins and minerals of the cereal grain, and because they are higher in dietary fibre, less energy dense and more filling than processed varieties. Thus they limit the possibility of excess consumption and promote overall good health.
New Zealand Dietetic Association	• supports Option 1 reject Application; • wholegrains and foods made from wholegrains have lower Glycemic Index (GI) values than wholemeal or foods made from wholemeal; • wholegrains appear to offer protection against colon cancer when compared to processed grains; • wholegrains as part of a whole diet are consistently associated with lower rates of major chronic disease risk in epidemiological studies; and • wholegrain and wholemeal products are recommended or contraindicated independently of each other for a variety of common gastrointestinal disorders.

John Ward	• supports Option 1 reject Application; • current definitions of 'wholegrain' and 'wholemeal' are clear and concise and provide more flexibility and innovation; • the proposed definition falls somewhere between the above two definitions and therefore would create uncertainty; • if the wholemeal definition disappears, we would be left with a nonsensical definition of 'wholegrain' that was not 'whole of the grain' as the name has and always should represent; • misleading practices could occur in the absence of the two definitions; • there has never been a problem with the use of the qualified term wholegrain eg. ground wholegrain, cracked wholegrain, or even manufactured from wholegrain. This was in part recognised in Volume 1 of the Food Standards Code under B1 (15A) which regulated bread which included the terms 'wholegrain' or 'full grain' in the name. • rejection of the Application means that consumers will still find 'wholegrains' in a product describes as such and will still be able to buy 'wholemeal' pasta (or ground wholegrain pasta) rather than the nonsensical 'wholegrain' pasta.; • this together with % characterising ingredient labelling provides for greater truth in labelling. • the use of 'wholegrain' in dietary guidelines (keeping in mind that they also include reference to wholemeal) is to give a clear message of the benefits derived from the whole of the grain, as opposed to 'white or refined varieties'.
BRI Australia Ltd and Member Organisations of the Go- Grains Advisory Committee	• supports Option 2 to accept the Application; • the success of this Application is necessary in order for food manufacturers to be able to provide consumers with meaningful information on food labels that will assist them to identify wholegrain foods; • public health policy in Australia encourages consumption of grain-based foods, with some emphasis on choosing whole grains; • scientific research studies show a positive association between consumption of wholegrain foods and reduced risk of lifestyle diseases such as heart disease, diabetes and some cancers; • consumer research confirm that most people have difficulty identifying grain-based foods; • labelling information identifying 'wholegrain' foods could help consumers to make informed choices about healthy diet; and • the current definition of 'wholegrain' in the Code precludes most foods from meeting the suggested labelling criteria, even though functionally, those foods meet the 'wholegrain' criteria.

Dietetic Training Programme University of Otago	•supports Option 2 to accept the Application; •misleading for the consumer: Present definition is too narrow and means that few, if any, cereal or bread formulations could be counted as 'wholegrain' and means that a few breakfast cereals and crispbreads but virtually no breads, would qualify as 'wholegrain foods' no matter what criteria is used; •inconsistent with international practice and research studies such as the Nurses Cohort study which consider wholemeal foods the same as wholegrain foods; and •limiting food manufacturers as very few foods truly count as wholegrains under the present definition. Changes to the definition would cause labelling changes and allow manufacturers to potentially make health claims.
Australian Consumers' Association	•supports Option 2 to accept the Application; •provides greater consistency with the definition of 'wholegrain' internationally (eg US and UK) and with the Dietary Guidelines for Australians and the Australian Guide to Healthy Eating; •increase the number of products labelled as 'wholegrain', improving the consumers' ability to identify wholegrain products and therefore incorporate them in their diet; and •be in line with recent research that suggests that a positive association between consumption of 'wholegrain' foods (as per the proposed definition) and reduced risk of lifestyle diseases such as heart disease, diabetes and some cancers; •ACA is cautious about the practical implications of this definition; and •it is unclear what implications the proposed 'wholegrain' definition will have on the current definition of 'wholemeal'.
The Flour Millers' Council of Australia	•supports option 2 to accept the Application; •the proposed change does not alter the integrity of the existing definition and provides for broader application which is in keeping with many applications in the food manufacturing industry; and •the proposed change is consistent with creating the opportunity for more food products to be identified as wholegrain & contribute to availability of products within recognised dietary guidelines and health eating.
Goodman Fielder	•supports option 2 accept Application; •the broadened definition that includes milled as well as unmilled grains is important for both manufacturers and consumers; •consumers need to be able to recognise what foods are wholegrain foods and manufacturers need to be able to communicate the wholegrain message on a product label; and •currently there are very few products on the market that communicate that they contain wholegrains as most grains used in retail products are kibbled, milled or cracked.

Sanitarium Health Food	•supports option 2; •claims regarding the wholegrain content of foods be allowed on foods that contain both intact as well as those made from ground, cracked or flaked grains where all the components of the grain are present in substantially the same proportions as found in the original grain; •wholegrain foods that have been linked to health outcomes in research are not limited to foods with intact grains but include foods like dark bread, wholemeal flour, and wholewheat spaghetti; and •also support the development of criteria for 'source' and 'good source' of wholegrains nutrition claims.
National Heart Foundation of Australia	•supports option 2 – accept the Application and provide a different definition of 'wholegrain'; •assisting consumers to choose healthier grain-based foods is likely to have a public health benefit; and •most of the nutritional benefits of whole grains are not diminished by chopping, grinding or flaking.
Australian Food and Grocery Council	•supports option 2 accept Application; •the current definition does not take into account the different contextual uses of the word 'wholegrain'; rather, it defines 'whole grain' not 'wholegrain'; •the current definition for 'wholegrain' is inconsistent with both Australian and international usage of the word; and •the benefits of changing the definition will outweigh the costs.
George Weston Foods Limited	•supports option 2 accept the Application; •GWF supports the recommendations made by AFGC and BRI and provided input to their submissions.
National Heart Foundation of New Zealand	•supports Option 2 to accept the Application; •encourages the development of a 'wholegrain' definition that provides consumers with adequate information to make healthy choices in line with food and nutrition guidelines. •chopping, grinding or flaking does not diminish most of the nutritional benefits of 'wholegrains'; •replacing the current definition of 'wholegrain' with the definition proposed would enable manufactures of 'wholegrain' products to market a greater number of 'wholegrain' products to consumers.
Arnott's	•supports option 2 accept the Application; •Arnott's supports the recommendations made by AFGC; and •kibbled grains which are more palatable (chewable) than whole grains have the same nutritional characteristics as whole grains. However, whole grains in biscuits and other baked products are much harder to chew and have led to consumer complaints and possible reimbursement for dental repair.

New Zealand Nutrition Foundation	•supports option 2 accept the Application; •Government Food and Nutrition Guidelines stress the importance of including whole grains in the daily diet; •research shows an association between consumption of whole grain/wholemeal foods and health benefits; •whole grains not intact are a valuable and bioavailable source of silicon which has been shown to play an important developmental role; and •any new definition needs to be accompanied by a consumer education campaign.
Australian Quarantine and Inspection Service	•defers comment until Draft Assessment Report available.
New Zealand Food Safety Authority	•supports Option 2 to accept the Application •supports the wholegrain definition proposed by the Applicant •considers that the components of the wholegrain, if present in substantially the same proportions as the intact grain, should also qualify for the descriptor 'wholegrain'. A change of definition will widen the number of foods that can be described as wholegrain, which could help consumers make healthy food choices in line with food and nutrition guidelines.

Attachment 5

Consumer Research Studies relevant to consumer understanding of 'wholegrain'

The following consumer research findings were referred to in Application A464:

1. National Newspoll Omnibus of 1200 Australians (18 years and over) commissioned by the Sanitarium Health Food Company (August 1999).

   Respondents were selected by means of a stratified random sample process and interviews were conducted by telephone over the period 6-8 August 1999.

   This survey indicated widespread confusion in identifying wholegrain foods. While 85% of the survey claimed to know the difference between wholegrains and refined grains, 60% could not identify any physical differences and more than half (53%) could not mention any nutritional difference between wholegrains and other grains. In regard to sources of wholegrains, 30% of people incorrectly identified white rice to be wholegrain, while white bread and white pasta were also incorrectly identified as wholegrain by 18% and 14% of respondents respectively. A further 88% of consumers believed breakfast cereals to be wholegrain, despite wide ranging differences between different cereals.

   When asked how they select foods containing wholegrains about 1 in 2 people (52%) say they read the label. Twenty-nine per cent claim they guess when they select wholegrain foods.

   Ninety-two per cent of respondents in this survey believe they would find it either very helpful or somewhat helpful if information about the wholegrain content of food was included on the label.

2. National Newspoll Omnibus of 700 Australians living in Sydney, Melbourne, Adelaide, Brisbane and Perth. Commissioned by Kellogg (Aust) Pty. Ltd (2000).

   This survey confirmed the general low awareness amongst consumers of wholegrains:

   - Just 24% of respondents could name a wholegrain food without prompting.
   - Fifty-seven per cent did not know that breakfast cereals contain wholegrains.

   Awareness of the health benefits of wholegrains was somewhat higher. Fifty-three per cent said they helped the bowel and digestion, 37% listed benefits like 'keeps you regular' and prevents constipation and 39% said wholegrains are a good source of fibre. About 23% didn't have an answer when asked about health benefits.