January 2003

Nutrition and related claims used on packaged Australian foods - implications for regulation

P. G. Williams
University of Wollongong, peterw@uow.edu.au

H. Yeatman
University of Wollongong

S. Zakrzewski
University of Wollongong

B. Aboozaid
University of Wollongong

S. Henshaw
University of Wollongong

See next page for additional authors

Nutrition and related claims used on packaged Australian foods - implications for regulation

Abstract

The aim of this study was to describe the use of nutrition and related claims on packaged food for sale in Australia and measure the compliance of such claims with regulations governing their use. A survey was conducted of the labelling of 6662 products in 40 different food categories on sale in New South Wales in 2001. Levels of compliance were assessed by comparing the claims on the label and data in the nutrition information panel with requirements of the Foods Standards Code and the Code of Practice on Nutrient Claims. Half of the products (51.3%) carried some type of nutrition related claim and 36.2% made at least one nutrient claim, with an average of 1.2 nutrition related claims on every food product. The foods with the highest use of nutrient claims were sports drinks, breakfast cereals, meat substitutes, pretzels and rice cakes, muesli bars and yoghurt. The most common nutrient claims were for fat, cholesterol, vitamins, minerals, and sugar. More than 20% of products carried claims related to additives. Many nutrient claims (12.9%) did not comply with current regulations, especially those in the voluntary Code of Practice. Adoption of mandatory requirements for all claims within the Food Standards Code may improve the levels of compliance. Implications for the regulation of nutrition and related claims are discussed. The impact of nutrition claims on consumer purchasing and consumption behaviour deserves further study.

Keywords

nutrient claims, food labelling, food legislation

Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

This article was originally published as: Williams, P, Yeatman, H, Zarkrzewski, S, Aboozaid, B, Henshaw, S, Ingram, K, Rankine, A, Walcott, A & Ghani, F, Nutrition and related claims used on packaged Australian foods - implications for regulation, Asia Pacific Journal of Clinical Nutrition, 2003, 12(2), 138-150. The definitive version is available at www.blackwell-synergy.com.

Authors

P. G. Williams, H. Yeatman, S. Zakrzewski, B. Aboozaid, S. Henshaw, K. Ingram, A. Rankine, S. Walcott, and F. Ghani

Title: **Nutrition and related claims used on packaged Australian foods - implications for regulation**

Authors: **Peter Williams BSc(Hons) DipNutrDiet MHP PhD**
Department of Biomedical Science,
University of Wollongong NSW 2522
Heather Yeatman BSc DipEd GDipND MPH DrPH
Graduate School of Public Health
University of Wollongong NSW 2522
Sally Zakrzewski*
Brooke Aboozaid*
Simon Henshaw *
Kendall Ingram*
Alex Rankine*
Sara Walcott*
Fatima Ghani#
*Students in the Department of Biomedical Science
Student in the Graduate School of Public Health
University of Wollongong NSW 2522

Correspondence to: **Dr Peter Williams**
Department of Biomedical Science
University of Wollongong NSW Australia 2522
Tel: **(02) 4221 4085**
FAX: **(02) 4221 4096**
e-mail: **peter_williams@uow.edu.au**

Running Title: **Claims on foods**

Key Words: **nutrient claims; food labelling; food legislation**
Word Count: **5900**

Abstract

The aim of this study was to describe the use of nutrition and related claims on packaged food for sale in Australia and measure the compliance of such claims with regulations governing their use. A survey was conducted of the labelling of 6662 products in 40 different food categories on sale in New South Wales in 2001. Levels of compliance were assessed by comparing the claims on the label and data in the nutrition information panel with requirements of the Foods Standards Code and the Code of Practice on Nutrient Claims. Half of the products (51.3%) carried some type of nutrition related claim and 36.2% made at least one nutrient claim, with an average of 1.2 nutrition related claims on every food product. The foods with the highest use of nutrient claims were sports drinks, breakfast cereals, meat substitutes, pretzels and rice cakes, muesli bars and yoghurt. The most common nutrient claims were for fat, cholesterol, vitamins, minerals, and sugar. More than 20% of products carried claims related to additives. Many nutrient claims (12.9%) did not comply with current regulations, especially those in the voluntary Code of Practice. Adoption of mandatory requirements for all claims within the Food Standards Code may improve the levels of compliance. Implications for the regulation of nutrition and related claims are discussed. The impact of nutrition claims on consumer purchasing and consumption behaviour deserves further study.

Introduction

In Australia and New Zealand, the most effective regulatory mechanism to manage nutrition and related claims on foods is under discussion. A key element in the management of claims is the extent to which food manufacturers will comply with requirements, either legal or industry-based codes of practice, governing the making of such claims. Examination of current practice regarding nutrition and related claims on foods, and the extent to which food manufacturers are complying with existing laws and industry guidelines, will inform the debate regarding their regulation.

Nutrition claims on food labels are statements that describe the quantity or quality of the nutritional properties of the food. They may be divided into two categories:
Nutrient claims relate to particular nutrients that are recognised as essential for normal health. They may be quantitative (eg, high in fibre, low in salt) or qualitative (eg, polyunsaturated).
Other nutrition claims relate to bioactive substances that may offer particular health benefits (eg, isoflavones), or the general physiological effects of the food (eg, glycemic index).
In addition to nutrition claims, there are a number of *nutrition related product description claims* that describe the presence or absence of additives (eg, free of artificial colours), ingredients (eg, lactose free, GM free), make environmental claims (eg, organic, free range) or provide qualitative descriptions of the food (eg, wholegrain, natural).

Nutrition claims give some interpretive context to numerical data about the nutrient content of foods and provide greater ease of use for consumer decision making; however there is scope for confusion if terminology and formats are not defined [1]. Regulations are needed to ensure that claims on labels are truthful and do not mislead consumers but they should also provide incentives to manufacturers to develop products that promote public health and assist consumers in following dietary recommendations [2]. The position of the Dietitians Association of Australia is that well-defined and monitored nutrient content and comparative claims provide an opportunity to assist consumers to understand the relative nutritional attributes of products [3].

Nutrition information on labels may help guide consumers to healthier choices [4] and a survey of Australian shoppers in 1991 found that claims about nutrient content were ranked as the second most desirable items of health information on labels after information on additives [5]. Labels can be especially important for food sensitive individuals who may react adversely to specific additives

or ingredients [6]. US studies have found label use was significantly associated with lower fat consumption and higher intakes of fruits and vegetables [7, 8]. However, consumers with lower levels of education and health awareness are less likely to use food labels [9]. Evidence also suggests consumers are unable to recognise nutrient claims that are false and that comparative nutrition claims may mislead consumers about the nutritional value of products claims [10, 11]. Consumers may have difficulty differentiating between similar claims - for example reduced fat and low fat claims [10] - and may misinterpret some claims: for example a product may be thought low in fat if there is a claim of low cholesterol or low in saturates [12].

The role of nutrition and related claims in decision-making behaviour is still unclear. Some American studies have suggested that most consumers do not rely primarily on nutrition claims in making overall product and nutrition evaluations when other information such as the nutrition information panel (NIP) is readily available [13, 14]. Research for the US Food and Drug Administration (FDA) has found consumers are highly sceptical of nutrition and health claims on packages because they view them as attempts by manufacturers to sell more of their product [15]. Similarly, in Australia and New Zealand in 1991/92 approximately 60-70% of consumers reported being concerned about the honesty of food labels and the enforcement of food regulations [16]. Such scepticism can reduce the use of nutrient claims on labels [17] and the acquisition of nutrition information from food labels [18]. On the other hand, in the UK over 80% of people in one study reported that they look at broad nutrition claims (such as low fat, high fibre) and that such nutrition information affects their purchase decisions [19].

In Australia, a 1995 national consumer survey on food labelling commissioned by the National Food Authority (NFA) reported that 32% of shoppers looked at nutrition claims when purchasing a product for the first time but that about 30% were unsure whether they could trust them [20]. More recent qualitative research commissioned by its successor the Australia New Zealand Food Authority (ANZFA) in both Australia and New Zealand reported that consumers generally liked nutrition claims on packages because they were a quick and easy way to decide between products without reading the entire label, but there was still scepticism about their accuracy, particularly about fat free and ‘lite’ claims [21].

Food Standards Australia New Zealand (FSANZ) – formerly ANZFA – now regulates food standards regarding food production, labelling and advertising in Australia and New Zealand. Within the Food Standards Code (FSC) there are general regulations governing the labelling of food, including mandatory information required in the NIP, as well as specific standards for additives (including vitamin and minerals) and some commodity specific labelling regulations (eg, Sports Drinks and Special Purpose Dietary Foods) [22].

At the time this survey was conducted food standards were in a period of transition. In November 2000 Health Ministers in Australia and New Zealand adopted a new version: Food Standards Code Volume 2 (FSC2), which aimed to harmonise regulations between the two countries, reduce the number of product specific standards and completely review horizontal standards applying to all foods, such as those covering labelling [23]. There was a two year transition period starting from the adoption, during which manufacturers were able to comply with either the old Food Standards (FSC1) or the new version [24].

In addition to the FSC, there is a Code of Practice on Nutrient Claims (COPONC) which was developed in 1995 by the NFA in close consultation with key stakeholders including nutrition experts, the food industry and consumer representatives [25]. The aim of COPONC was to ensure consistent and accurate information about the nutrient content of food on labels to enable consumers to make informed healthier food choices. COPONC was adopted by reference into the Code of Conduct for the Provision of Information on Food Products developed by the food industry [26]. Its administration is the responsibility of the Food Code Management Committee (FCMC), with representatives from industry and the community, and an ANZFA observer, with a secretariat provided by the Australian Food and Grocery Council (AFGC). Since the COPONC is not mandatory, the FCMC cannot impose legal sanctions for breaches, but it attempts to resolve complaints by negotiations with the manufacturers. However, companies do still have obligations to ensure labelling and advertising are neither false nor misleading under the general provision in Fair Trading laws.

This tripartite system means that the FSC only regulates some claims about the nutrient content of foods. For example, a food cannot be called a source of a vitamin or mineral unless it provides at least 10% recommended dietary intake (RDI) per serve under the standards governing addition of

vitamins and minerals to food. Other claims are not regulated in law but are covered by COPONC (for example claims about dietary fibre). For still other nutrient claims (eg, carbohydrate) there are no defined standards, although Fair Trading laws would apply. Table 1 sets out the sections of the FSC or COPONC regulating nutrient and other nutrition related claims. There can be inconsistencies between the provisions of COPONC and general Fair Trading legislation. For example, the criteria for a fat free claim in COPONC allow small trace amounts of fat (up to 0.15%) to be present, whereas a legal interpretation of the term 'free' is that fat should be 'nil' or 'not detectable'.

In May 2001, ANZFA began a review of nutrient content and other related claims, citing a number of problems with the current regulatory arrangements [27]:

- inconsistency with Codex and international practice
- non-compliance
- lack of awareness and/or access by consumers
- inconsistencies between COPONC and fair trading laws, and
- inconsistency in relation to imported foods.

After a period of public consultation, a draft assessment report was issued in March 2002 with a number of recommendations to change definitions and regulatory arrangements [28]. However, at the same time it was decided that consideration of these recommendations should be combined with the review of Health and Related Claims [29], and a final decision on changes to COPONC was postponed.

One of the difficulties in reviewing the current nutrition claims regulations has been the lack of comprehensive studies on the extent of the use of such claims on foods sold in Australia. This study aimed to overcome that gap by conducting a survey of a large sample of packaged food products on the Australian market to determine the proportion carrying nutrition and related claims, the wording used to make these claims and their compliance with the COPONC and FSC.

Methods

Data Collection

In August and September 2001 a survey was conducted of the labels on packaged foods sold in supermarkets in 40 categories of food (Table 2). The survey was conducted by six of the authors (BA, KI, SH, AR, SW, SZ) in Woolworths, Coles, Franklins, Independent Grocers of Australia (IGA) and Aldi supermarkets throughout the Sydney and Wollongong regions. Using a standard record form, the surveyors collected the following information from the product labels:

- Manufacturer
- Brand name
- Flavour variants
- Number and quantity of available sizes
- Nutrient claims (ie, those related to the nutrients listed in Table 1)
- Other nutrition related claims, and
- Endorsements by health related and other organisations.

When a product made a claim about the absence or presence of a particular nutrient, further detailed information was collected. The actual wording of the claim was noted and values in the NIP information were recorded. This study did not attempt to survey the use of health claims on products, that is statements that relate the nutrient content of a product to possible physiological or health benefit.

Data Analysis

All data were entered into a Microsoft Excel 98 database. They were analysed for:

1) number and type of products carrying nutrition claims, nutrition related claims or endorsements
2) the wording used to make nutrition claims
3) compliance of claims with current food regulations and reasons for non-compliance.

Compliance of claims for energy, fat, fibre, sodium/salt, sugar, energy, cholesterol, %free, light/lite, diet and comparative claims were assessed against the criteria in COPONC. Claims for vitamins and minerals were assessed for compliance with Standard A9 of the FSC1. Claims for protein were assessed for compliance with Standard A1(14) of the FSC1.

Claims such as no added sugar and unsalted were not assessed for compliance since this could not be determined by examination of information on the NIP. Such claims and those that are not regulated (for example, claims related to carbohydrate) were recorded as being compliant.

Differences between the nutrient content of foods making claims to be a source or a good source of protein were compared with Student t tests, using the SPSS Base 9.0 statistical program.

Results

A total of 6662 food products were surveyed. Table 3 summarises the number of products in each of the 40 food categories, the number of nutrient and nutrition related claims made on products in each category, and the percentage of products carrying any claims. Just over half of all products surveyed (51.3%) carried some type of nutrition related claim and more than one third (36.2%) carried at least one nutrient claim. Many products carried more than one claim, and over all food categories the mean number of nutrition related claims was 1.2 per product.

Sports drinks carried the highest proportion of nutrient claims (97.4% of products) and a high proportion was found in breakfast cereals (87.4%), meat substitutes (76.6%) pretzels and rice cakes (75.6%), muesli bars (73.8%) and yoghurts (72.5%). The categories that featured the lowest proportion of products with a nutrient claim were cooking sauces (12%), vegetables (8%), meat products (7.7%) and olives (0%). Sports drinks also had the highest percentage of products with any type of nutrition related claim (97.4%). Meat substitutes (95.3%), pretzels and rice crackers (92.7%) and breakfast cereals (88.5%) also had high percentages of products with any nutrition related claims. The categories with the fewest nutrition related claims were ice creams (25.2%), soft drinks (21.6%), and olives (18.2%).

Table 4 shows the types of nutrition claims made for eight broad product categories. Over all products the most common nutrient claim related to fat (18.2% of products) and cholesterol (9.1%). Use of nutrient claims varied by product type. The foods with the highest frequency of use for each nutrient claim were as follows: energy (52.6% sports drinks; 36% rices), protein (42.2% meat substitutes; 34.8% canned beans), fat (60.7% breakfast cereals; 54.6% yoghurts), cholesterol (69.9% edible oils; 68.8% meat substitutes), carbohydrate (51.9% breakfast cereals; 31.9% muesli bars), sugar (37.9% juices; 29.6% canned fruit), fibre (57.4% breakfast cereals; 54.3% canned beans), vitamin and minerals (50.3% breakfast cereals; 48.8% eggs), sodium (32% rice; 30.8% soup mixes). The foods with the fewest nutrient claims were cordials, fresh meats, olives, and bottled and canned vegetables (each with <10% carrying claims).

A high proportion of products carried nutrition related claims. “Preservative free” was found on 20.1% of all products and was used on more than 40% of canned foods, chips, juices, meat substitutes, pretzels and rice cakes. “No artificial colours” was claimed on 17.6% of products and

"no artificial flavours" on 14.8%. Some other claims were common in specific food categories only. Lactose free claims (used on 1.3% of products overall) were found on more than 20% of milk and milk substitute products. Gluten free claims (2.7% of all products) were used on more than 30% of rices and rice crackers. MSG free claims were used in more than 20% of all canned soups and chips but only 2.9% of all products. GM free claims (1.7% of all products) were most prevalent on rice (29.6%), milk and milk substitutes (14.8%) and meat substitutes (14.1%). Organic claims (1.1% of products) were most common on eggs (23.3%), milk and milk substitutes (14.8%), meat substitutes (14.1%) and meats (11.1%). Among other nutrition related claims only thirteen claimed foods were wholegrain (4 breakfast cereals and 9 breads).

Endorsement of products by third party organisations was relatively uncommon. The Tick program of the Heart Foundation [30] was by far the most common endorsement. It was used on 5.5% of all products surveyed and was particularly prevalent on custards (36%), edible oils (27.2%), fat spreads (26.8%), pretzels and rice cakes (19.5%), yoghurt (18.6%), breakfast cereals (18%), milk and milk substitutes (14.3%), meat substitutes (14.1%) and breads (13.4%). None of the other endorsements was widely used, although a few specific product categories commonly used other endorsements: 40.6% of meat substitutes were endorsed by the Vegetarian Society and 17% of muesli bars and 13.2% of sports drinks carried messages from the Sports Dietitians Association. Environmental claims were restricted to eggs (32.6% claimed to be free range) and seafood (38.5% of canned fish were labelled as dolphin friendly). Other endorsements (International Diabetes Institute, Heart Research Institute, Kosher, Halal and the Australian Institute of Sport) were found on less than 0.5% of all products surveyed. The ANZFA logo endorsing a folate health claim was very rarely used and found in only two product categories: 0.5% of breakfast cereals and 1.6% of meat substitutes.

Table 5 summarises the wording and descriptors used to make nutrition claims. The most widely used claims related to fat, cholesterol, vitamins and minerals, sugar and dietary fibre. A much greater variety of descriptors was used than are defined in the FSC or COPONC. The most common terms used were "free/no/zero" (16.7%), "% free" (14.1%), "source" (15%), "low" (10.9%) and "high" (9.4%). A number of descriptors were used that are not defined within current regulations (for example, "rich in", "packed with", "great source of", "sustained", "guaranteed"). There were

also a substantial number of products carrying claims for lycopene (n=100), phytoestrogens (n=43) and glycemic index (GI) (n=15), yet none of these claims were included in the FSC or COPONC.

The number and percentage of claims that did not comply with either the FSC regulations or the COPONC are set out in Table 6. Overall 12.9% of all nutrient claims failed to comply in some manner with the mandatory or voluntary requirements. The types of claims most commonly non-compliant were:

- Light/lite claims without a statement specifying the characteristic that was light (68.5%)
- Low or reduced saturated fat claims without a declaration of the content in the NIP (59.2%)
- Claims for reduced levels of a nutrient without a comparative statement of the reference food and percentage reduction (25%)
- % fat free claims which did not include a statement in close proximity giving the percentage of fat in the product (14.4%).

Approximately 5% of nutrient claims were non-compliant because they failed to meet the specified nutritional criteria. However, there were five types of claims that had significantly higher levels of non-compliance: 17.9% of cholesterol free claims were made on foods that were neither low in fat nor low in saturated fat; 11.9% of high fibre claims appeared on foods that did not provide at least 3g fibre/serve; 11.8% of food claiming to provide a source of protein contained less than 5g per serve, 11.1% of very high fibre claims were on foods that did not provide at least 6g fibre/serve and 10.2% of % fat free claims were used on foods that contained more than 3% fat. It should be noted there were an additional 2.1% of all claims that were made without a declaration of the nutrient in the NIP, which made it impossible to assess their compliance, so the total non-compliance rate could be as high as 7.2%.

Table 7 compares the protein content of foods claiming to be a source or a good source of protein (or words of similar meaning). Most (88.2 %) of the products met the FSC1 requirements for making a claim (ie, providing at least 5g protein per serve and 12% energy from protein). Paradoxically, those products claiming to be a only a source of protein contained significantly *higher* amounts of protein per 100g than those foods carrying claims that they were a good source or high in protein ($p = 0.002$). When compared in grams of protein per serve or as a percentage of

energy from protein the differences between products with the different claims were not statistically significant.

Discussion

As large as this survey was, because of time and resource limitations there were a number of major categories of food that were not surveyed, including some frozen foods (vegetables, mixed meals and fish), noodles, pasta, confectionery, canned meat, cake and bread mixes, flour, sugars and syrups, dry beans, dried fruit, baby foods, spices and herbs, tea and coffee. Furthermore, even in the categories surveyed it was not possible to obtain a complete census of all products in the marketplace. This survey also excluded unpackaged food such as fresh fruit and vegetables and bread rolls, although in some cases there may have been nutrition related claims made about those products via in-store displays. Thus the quantitative results should be treated with some caution and cannot be taken to represent all the foods currently available in Australia, which are now estimated to number around 15,000 in a typical large supermarket. However it did attempt to include all the leading products in a large range of food categories and therefore does provide a useful picture of the use of nutrition claims in the Australian market in 2001 and indicates trends in their use.

Prevalence and type of claims

The total percentage of products carrying nutrient claims (36.2%) was comparable to the results from a similar study conducted in 1997 by the FDA in the USA, which reported 38.7% of all products sold carried a nutrient claim [31]. As was found here, that study reported that nutrient claims about fat predominated (22.5% of all US products carried a fat claim, compared with 18.5% in this study). Energy-related claims were the next most common category on claims in the US (7.1% products), but not so in Australia where such claims were less common than those for cholesterol, vitamins and minerals, sugar or fibre, and were found on only 3.8% of products.

The widespread use of nutrition claims in most food categories suggests that they are regarded as important by food marketers and reflects the value that consumers place on such information. By far the most popular nutrient claims related to fat content and type. The use of the term “%fat free” was almost twice as common as use of the term “low fat”. The more quantitative nature of the former may be appealing to marketers than the more general term and the use of the word “free” may be seen as attractive to diet conscious consumers. While such claims can assist consumers to choose foods in line with the Dietary Guidelines for Australians [32], there has been concern expressed that people could wrongly assume that low fat and fat free products can be eaten freely, without regard to their energy content and other nutritional characteristics. It is notable that in the

USA, although fat intake has declined as a percentage of energy over the past 25 years, the prevalence of obesity has dramatically increased [33].

Claims relating to cholesterol were quite prevalent even though current nutritional advice places much less importance on dietary cholesterol as a risk factor for cardiovascular disease and more emphasis on fat type [34]. Cholesterol free claims were very commonly used, often on foods that are naturally low in animal fats and cholesterol, such as breakfast cereals, beans, rice and soy products. Cholesterol claims were also used on more than two thirds of all edible oil products. Canadian studies report that most consumers rely on a no cholesterol claim to select a product without further reference to the fat content [12]. The continued use of cholesterol claims may be adding to confusion about the best nutritional advice and would often be misleading, especially when about one in five such claims appeared on products that did not satisfy the criteria set out in the COPONC requiring that the products should be low in fat or low in saturated fat.

The prevalence of nutrient claims did not always seem to be proportional to the importance of the nutrients from a population health viewpoint. For example, the 1995 National Nutrition Survey results suggest that Australians have adequate intakes of most vitamins, minerals and protein [35] yet there were many more claims for these nutrients than for sodium, a nutrient that most Australians overconsume [36]. Clear labelling of reduced salt products could assist consumers to modify their intakes appropriately. It also seems clear that food manufacturers are using claims to drive consumer interest and expectations about a number of bioactive substances which appear to have potential health benefits (such as phytoestrogens and lycopene) ahead of national dietary recommendations about their intakes.

Claims were made for a number of nutrients that are not currently regulated in the FSC or COPONC, including carbohydrate and wholegrain. The limited number of wholegrain claims was somewhat surprising, given emerging evidence for the benefits of increased wholegrain consumption to reduce the risk of cardiovascular disease and some cancers [37, 38] and the fact that such foods are recommended in the Australian dietary guidelines [32, 39, 40]. Manufacturers may feel inhibited in making wholegrain claims by the narrow definition currently used in Standard 2.1.1(1) of the FSC2: "*wholegrain means the unmilled products of a single cereal or mixture of*

cereals". In the USA, processed foods are permitted to carry an FDA approved health claim about wholegrain foods if they contain at least 51% by weight of any combination of whole grains [41].

One of the differences between the old and new versions of the FSC is that the definition of a nutrient claim for protein is no longer regulated in FSC2. The results from this survey suggest that there is a need to consider reinstatement of a definition for such claims and to define the criteria to distinguish foods labelled as a source of protein from those claiming to be a good source or high in protein, since there was no significant difference in the protein content of foods using these different claims.

The survey found there was widespread use of claims about food additives. A number of Australian studies have examined consumer attitudes to food additives [42-44]. In general between about a quarter and a half of respondents in these surveys say they look for information on additives. Similar trends have been reported in New Zealand where 55% of main householder shoppers thought that a "no preservatives" claim was useful, even on a canned product that is not allowed to have preservative added [45, 46]. This contrasts with the position on negative claims set out in the food industry Code of Practice on the Provision of Information on Food Products, which discourages the use of claims such as "no preservative", unless the consumer would normally expect the substance to be present in the food [26]. The stated reason for this advice is not to exacerbate consumers' negative views about additives and processed foods in general. Clearly from the results of this survey, food manufacturers are largely ignoring this recommendation. Over 20% of all product labels carried "preservative free" claims and the proportion was over 40% on canned products, chips, pretzels and rice crackers, juices and meat substitutes.

Compliance with regulations

There has only been one other published review of use of nutrient claims and their compliance with the requirements of COPONC. In the 1997-98 Annual Report of the FCMC, a survey was reported of 343 products in 20 food categories [47]. A total of 542 nutrient claims were assessed but no quantitative results were presented. The report stated that there were "no apparent trends in non-compliance" but did note that several products claimed "x% fat free" when they were not low fat foods.

The majority (61%) of claims that failed to comply with regulations in this 2001 survey did so because of breaches of requirements related to the format of labelling. In some cases these were unlikely to cause any serious misrepresentation to the consumer. For example, according to the requirement of COPONC, % fat free claims should be accompanied by a statement of the percentage fat contained in the product, in close proximity. There has been very little research to investigate whether such statements are useful to consumers. In most cases where this statement was not given, the value was provided on the label in the NIP, so consumers would still be able to compare the fat content of two products with the claim. However in one study with US adolescents, participants were five times more likely to use front of label nutrition claims than the NIP when making purchase decisions, so it may be important to provide the information on fat content close to the nutrient claim [48].

Approximately 40% of the non-compliant claims (5.1% of all nutrient claims) were potentially serious in that they did not meet the established nutritional criteria for the claim. Clearly these instances could be classified as false and misleading, although in many cases the level of non-compliance was relatively modest (eg, a product claiming to be high in fibre providing 2.9g fibre per serve, instead of the required 3g). Claims that a food is a good source of a vitamin may be used by consumers as a general reassurance of its overall health value, rather than being relied upon as a guarantee of a specific amount of a nutrient, but there is no research that has attempted to measure the impact of such incorrect claims on consumer purchases or overall nutrient intakes. Nonetheless, the significant level of non-compliance poses a threat to the credibility of all claims and may contribute to continuing consumer scepticism. Such scepticism is consistent with descriptions of the coping tactics consumers employ generally when then believe that a persuasion attempt is occurring [49, 50].

It is pertinent to note that more than 80% of the non-compliant claims related to requirements in the voluntary COPONC. The levels of compliance with claims regulated by the FSC appeared much higher and this may provide justification for making all regulations about nutrient claims mandatory within the FSC, as has been recommended in the draft assessment report from ANZFA [28].

Endorsements

While some qualitative research suggests consumers do not necessarily place great value on product endorsements generally, those associated with health organisations do have some influence [20]. Consumers report using endorsements such as the Heart Foundation's Tick to guide their food purchasing choices [51] and use of the Tick does appear to encourage healthier choices as well as improvements in the food supply [52, 53]. From this study it appeared that health endorsements were mostly limited to only a few major food categories, especially those where consumers may be uncertain about their nutritional qualities (eg, fat spreads, edible oils) or where they are marketed as providing significant nutritional benefits (eg, sports drinks, breakfast cereals). The very low usage of the ANZFA folate endorsement was notable, despite the fact that over 100 products were approved to carry the claim and the logo [54]. This may because companies were unconvinced of the public recognition of ANZFA as an endorsing agency and preferred to use their own individual marketing strategies [55].

Implications for the regulation of nutrition and related claims

The results of this survey indicate widespread use of nutrition related claims on packaged food in Australia. The range of claims was extensive, much broader than covered by the food standards and the COPONC. A management framework for regulating nutrition and related claims would need to consider the range of claims that manufacturers may wish to use. Current government and industry guidance both fall short of comprehensive coverage. This situation is likely to become worse in the future as new food components are identified and their role in nutrition established. Governments need to consider the extent to which they can determine the validity and control the use of such claims and to what extent should industry itself have responsibility for this, as currently is the case with the use of equivalent level claims about complementary medicines in Australia [56].

However, a key to the balance between government and industry-based control is the likelihood of compliance. The results of this survey indicate that the rate of non-compliance with both government laws and industry guidelines is of concern. Non-compliance was highest with the COPONC (80% of non-compliant claims) indicating that voluntary compliance is not likely to be effective. Adoption of mandatory requirements for all claims within the Food Standards Code may improve the levels of compliance.

Whether a regulatory or voluntary approach is taken, it is clear that enforcement mechanisms also need to be in place to ensure compliance. In Australia, enforcement of the FSC is the responsibility of State and Territory jurisdictions. Such a dispersed approach to enforcement may reduce its effectiveness, due to duplication of effort and the resources needed to monitor the large number of food products on the supermarket shelves. Industry enforcement of the COPONC is limited due to its lack of legal power over its members. Guidance can be provided but compliance is still voluntary. The model used in the complementary medicines area in Australia is a combination of these two approaches. An independent council provides guidance and requests voluntary compliance but if this is not adhered to, the Therapeutics Goods Administration (TGA) can step in with legislative powers. Another possible enforcement model is that of an independent ombudsman with the power to monitor and enforce compliance.

The range of claims and their frequency also raises issues of public health importance. Claims currently on food labels do not fully reflect public health priorities. Some nutrients such as cholesterol, vitamins and minerals, appear frequently on labels, while claims about other nutrients of greater public health concern, such as sodium/salt, are far less frequent. A further consideration is the impact on the use of claims on food labels that may result when food regulations are changed. The results of this survey suggest that the regulations in FSC2 regarding claims for the key nutrients protein and carbohydrate, and for the use of the term wholegrain, may need to be revisited to ensure maximum public health benefit from use of such claims on food labels.

Claims about recently investigated components in foods (for example, lycopene and phytoestrogens) and new nutritional concepts (glycemic index) also appear on food labels when authoritative guidelines regarding their role in human nutrition are yet to be formulated. The regulatory question is what is the role of such claims on food labels? Should the range of claims be restricted to those that reflect and support (government agreed) public health nutrition messages such as dietary guidelines? Or should the accepted range of claims be broader than this, allowing manufacturers to promulgate new nutrition-related information to consumers via food labels, prior to agreed public health messages being developed?

Finally, decisions regarding the role of nutrition and related claims on foods should be informed by research examining the role of such claims on consumer purchasing and food consumption behaviour. Such data are not currently available and research in this area is recommended.

References

1. British Nutrition Foundation. Nutrition claims. London: British Nutrition Foundation, 1996.
2. Van den Wijngaart A. Nutrition labelling: purpose, scientific issues and challenges. Asia Pacific Journal of Clinical Nutrition. 2002; 11: S68-S71.
3. Irwin T. Nutrition labelling - the DAA perspective. Nutrition and Dietetics. 2002; 59: 48-51.
4. Kristal A, Levy L, Patterson R, Li S. Trends in food label use with new nutrition labeling regulations. American Journal of Public Health. 1998; 88: 1212-1215.
5. Worsley A. Which information do shoppers want on food labels? Asia Pacific Journal of Clinical Nutrition. 1996; 5: 70-78.
6. Gruber J, Briggs D, Mamchack A, O'Sullivan A. Adverse reactions to foods - is food labelling the answer? Food Australia. 1996; 48: 407-409.
7. Neuhouser M, Kristal A, Patterson R. Use of food labels is associated with lower fat intakes. Journal of the American Dietetic Association. 1999; 99: 45-50;53.
8. Kreuter M, Brennan L, Scharff D, Lukwago S. Do nutrition label readers eat healthier diets? Behavioral correlates of adults' use of food labels. American Journal of Preventive Medicine. 1997; 13: 277-283.
9. Wang G, Fletcher S, Carley D. Consumer utilization of food labeling as a source of nutrition information. Journal of Consumer Affairs. 1995; 29: 368-350.
10. Levy A and Fein S. Consumers' ability to perform tasks using nutrition labels. Journal of Nutrition Education. 1998; 30: 210-217.
11. Andrews J, Burton S, Netemeyer R. Are some comparative nutrition claims misleading? The role of nutrition knowledge, ad claim type and disclosure conditions. Journal of Advertising. 2000; 29: 29-452.
12. Reid D, Hendricks, S. Consumer understanding and use of fat and cholesterol information on food labels. Canadian Journal of Public Health. 1994; 85: 334-337.
13. Keller S, Landry M, Olson J, Velliquette A, Burton S, Andrews J. The effects of nutrition package claims, nutrition facts panels, and motivation to process nutrition information on consumer product evaluations. Journal of Public Policy and Marketing. 1997; 16: 256-269.
14. Ford G, Hastak M, Mitra A, Ringold D. Can consumers interpret nutrition information in the presence of a health claim? A laboratory investigation. Journal of Public Policy and Marketing. 1996; 15: 16-27.

15. Levy A. PHS Food Label Health Claims Focus Group Report: Executive Summary. Washington, DC: Food and Drug Administration, Centre for Food Safety and Applied Nutrition, Division of Market Studies, 1995.
16. Worsley A and Scott V. Consumers' concerns about food and health in Australia and New Zealand. Asia Pacific Journal of Clinical Nutrition. 2000; 9: 24-32.
17. Szykman L, Bloom P, Levy A. A proposed model of the use of package claims and nutrition labels. Journal of Public Policy and Marketing. 1997; 16: 228-241.
18. Moorman C. A quasi experiment to assess the consumer and informational determinants of nutrition information processing activities: the case of the Nutrition Labeling and Education Act. Journal of Public Policy and Marketing. 1996; 15: 28-44.
19. Abbott R. Food and nutrition information: a study of sources, uses, and understanding. British Food Journal. 1997; 99: 43-49.
20. Australia New Zealand Food Authority. National consumer survey on food labelling. Canberra: ANZFA, 1996.
21. Donovan Research Marketing and Communications. Food Labelling Issues - Consumer Qualitative Research. Canberra: ANZFA, 2001.
22. Australia New Zealand Food Authority. Food Standards Code - Volume 1. Canberra: Information Australia, 1999.
23. Curran M. Nutrition labelling: perspectives of a bi-national agency for Australia and New Zealand. Asia Pacific Journal of Clinical Nutrition. 2002; 11: S72-S76.
24. Australia New Zealand Food Authority. Food Standards Code - Volume 2. Canberra: Information Australia, 2000.
25. National Food Authority. Code of Practice. Nutrient claims in food labels and in advertisements. Canberra: National Food Authority, 1995.
26. Grocery Manufacturers of Australia. Code of Conduct for the Provision of Information on Food Products. Canberra: Australian Food Council, 1995.
27. Australia New Zealand Food Authority. Proposal P234 - Review of Nutrient Content and Other Related Claims. Issues paper. Canberra: ANZFA, 2001.
28. Australia New Zealand Food Authority. Proposal P234 - Criteria and conditions for making nutrient content and related claims. Draft assessment. Canberra: ANZFA, 2002.
29. Australia New Zealand Food Authority. Proposal 153 - Review of health and related claims. Full assessment report. Canberra: ANZFA, 2000.

30. National Heart Foundation of Australia. The Tick Program. Guidelines for Acceptability. Canberra: Heart Foundation of Australia, 1999.
31. Brecher S, Bender M, Wilkening V, McCabe N, Anderson E. Status of nutrition labeling, health claims, and nutrient content claims for processed foods. Journal of the American Dietetic Association. 2000; 100: 1057-1062.
32. National Health and Medical Research Council. Dietary Guidelines for Australians. Canberra: Australian Government Publishing Service, 1992.
33. Willett W. Is dietary fat a major determinant of body fat? American Journal of Clinical Nutrition. 1998; 67: 556S-562S.
34. National Heart Foundation of Australia. A review of the relationship between dietary fat and cardiovascular disease. Australian Journal of Nutrition and Dietetics. 1999; 56: S3-S22.
35. McClelland W and Podger A. National Nutrition Survey. Selected Highlights 1995. Cat No 4802.0. Canberra: Australian Bureau of Statistics, 1997.
36. Beard T, Woodward D, Ball P, Hornsby H, Von Witt R, Dwyer T. The Hobart Salt Study 1995: few meeting national sodium intake target. Medical Journal of Australia. 1997; 166: 404-407.
37. Truswell A. Cereal grains and coronary heart disease. European Journal of Clinical Nutrition. 2002; 56: 1-14.
38. Jacobs D, Marquart L, Slavin J, Kushi L. Whole-Grain Intake and Cancer: An Expanded Meta-Analysis. Nutrition and Cancer. 1998; 20: 85-96.
39. National Health and Medical Research Council. Dietary Guidelines for Older Australians. Canberra: Australian Government Publishing Service, 1999.
40. Smith A, Kellett E, Schmerlaib Y. The Australian Guide to Healthy Eating. Background information for nutrition educators. Canberra: Commonwealth Department of Health, 1998.
41. Jacobs D, Pereira M, Slavin J, Marquart L. Defining the impact of whole-grain intake on chronic disease. Cereal Foods World. 2000; 45: 51-53.
42. Crowe M, Harris S, Maggiore P, Binns C. Consumer understanding of food additive labels. Australian Journal of Nutrition and Dietetics. 1992; 49: 19-22.
43. Crawford D and Baghurst K. Community views on food labelling. Food Australia. 1990: 231-233.
44. Crawford D and Worsley A. A preliminary investigation of consumer views and behaviours regarding food labelling. Food Technology Australia. 1986; 38: 74-76.

45. Worsley A, Worsley A, McConnon S. Kiwis, food and cholesterol: New Zealand consumers' food concerns and awareness of nutritional guidelines. Australian Journal of Public Health. 1991; 15: 296-300.
46. Johnston G and Hodges I. Label gazing. Main household shoppers' perceptions of food labelling information. Wellington, NZ: Ministry of Health, 1995.
47. Food Code Management Committee. Annual Report 1997-98. Code of Practice for the Provision of Information on Food Products. Canberra: Australian Food Council, 1998.
48. McCullum C and Achterberg C. Food shopping and label use behavior among high school-aged adolescents. Adolescence. 1997; 32: 181-197.
49. Freistad M and Wright P. The persuasion knowledge model: How people cope with persuasion attempts. Journal of Consumer Research. 1994; 21: 1-31.
50. McNutt K. Why some consumers don't believe some nutrition claims. Nutrition Today. 1997; 32: 252-256.
51. Noakes M and Crawford D. The National Heart Foundation's *Pick the Tick* programme. Consumer awareness, attitudes and interpretation. Food Australia. 1991; 43: 262-266.
52. Shrapnel W. The National Heart Foundation 'Pick the Tick' Program: Nutrition labelling and supermarket promotions to encourage healthy food choices. Health Promotion Journal of Australia. 1993; 3: 36-38.
53. Young L and Swinbourne B. Impact of the *Pick the Tick* food information program on the salt content of food in New Zealand. Health Promotion International. 2000; 17: 13-19.
54. Australia New Zealand Food Authority. Evaluating the folate-neural tube defect health claim pilot. Canberra: ANZFA, 2000.
55. Williams P, McHenery J, McMahon A, Anderson H. Impact evaluation of a folate education campaign with and without the use of a health claim. Australian and New Zealand Journal of Public Health. 2001; 25: 396-404.
56. Therapeutic Goods Administration. Guidelines for levels and kinds of evidence to support indications and claims for non-registerable medicines including complementary medicines, and other listable medicines. Canberra: TGA, 2001.

Table 1: Regulations governing product claims in Australia

	FSC 1[†]	FSC 2[†]	COPONC[†]
Energy	Yes A1(8) R2 R10(9)*	Yes 1.2.8(14) 2.9.4(9)	Yes
Protein	Yes A1(14A) R10(8)*	Yes 2.9.4(8)*	No
Fat	No	No	Yes
Saturated fat	No	No	Yes
Monounsaturated fat	Yes A1(12)	Yes 1.2.8(12)	No
Polyunsaturated fat	Yes A1(12)	Yes 1.2.8(12)	No
Omega fats	No	Yes 1.2.8(13)	No
Cholesterol	No	No	Yes
Carbohydrate	Yes R10(7)*	Yes 2.9.4(7)*	No
Sugar	Yes A1(10)	No	Yes
Dietary Fibre	No	No	Yes
Vitamins and Minerals	Yes A9(4)	Yes 1.3.2(6&7)	No
Sodium/Salt	Yes A1(24) R8(2)	Yes 1.2.8(17)	Yes
Amino acids	No	No	No
Electrolytes	Yes R9(9)	No	No
Gluten	Yes A1(14A)	Yes 1.2.8(16)	No
Lactose	Yes R1(5)	Yes 1.2.8(15)	No
Bioactive substances (eg, isoflavones, antioxidants)	No	No	No
Light	No	No	Yes
Diet	Yes A1(8) R2	No	Yes
Comparative claims	No	No	Yes
Wholegrain	No	Yes 2.1.1(1)	No
Glycemic index	No	No	No
Ingredients (eg soy, 9 grains)	No	Yes 1.2.10	No
Product source (eg GM, Organic, Free range)	No	Yes 1.5.2[#]	No
Additives	No	No	No

[†] FSC1, FSC2 = Food Standards Code Volumes 1 and 2 [22, 24]
COPONC = Code of Practice on Nutrient Claims [25]
* for Formulated Supplementary Sports Foods only
# for GM labelling only

Table 2: Categories of food surveyed

1. *biscuits and crackers*: sweet and savoury	21. *fruit bars*: all types
2. *breads*: plain and fruit varieties and unleavened breads	22. *ice creams*: including sorbets and frozen yoghurt
3. *breakfast cereals*: ready to eat and porridge cereals	23. *juices*: fresh, long-life and concentrates of fruit and vegetable juices, and fruit drinks
4. *canned beans*: baked beans in sauce, and single and mixed beans	24. *meats*: fresh and frozen red meat and poultry
5. *canned fruit*: included those in plastic containers	25. *meat substitutes*: tofu, TVP products and nut meats
6. *canned soup*: condensed and ready to eat in cans and UHT packs	26. *milk and substitutes*: including fresh, flavoured and dried milk, soy, rice and oat drinks
7. *canned pasta*: spaghetti, rings and ravioli in sauces	27. *muesli bars*: all types of cereal and breakfast bars
8. *cheeses*: fresh hard and soft varieties and cheese spreads	28. *olives*: bottled
9. *chips*: potato crisps	29. *pretzels & rice cakes*: including mixed grain
10. *coconut milks and creams*: fresh, canned and dried	30. *processed meats*: bacon, ham and other processed meats
11. *cooking sauces*: stir-fry, marinades, pasta and meat simmer sauces	31. *rice*: plain and flavoured
12. *cordial and water ices*: fruit cordials and ready to freeze ice mixes	32. *salad dressings*: including mayonnaises
13. *cream:* fresh, thickened and sour creams	33. *salsas and pestos*: bottled
14. *crumpets*: plain and wholemeal	34. *seafood products*: canned salmon, tuna, sardines and oysters
15. *custard*: fresh and longlife	35. *soft drinks*: including soda, mineral and tonic waters
16. *drink bases*: powders to be mixed with water or milk (eg hot chocolate, Milo, Sustagen)	36. *soup mixes*: dehydrated products
17. *edible oils*: cooking and salad oils and sprays	37. *sports drinks*: electrolyte drinks, sports and energy drinks (powders and liquids)
18. *eggs*: fresh	38. *spreads*: jam, honey, yeast extracts, cheese spreads, nut butters, fruit spreads
19. *English style muffins*: plain and fruit	39. *vegetables*: canned and bottled
20. *fat spreads*: butter, margarine, dripping and lard	40. *yoghurt*: plain and flavoured yoghurt and other dairy snacks.

Table 3: Number and percentage of products carrying nutrition related and nutrient claims

Product Category	Number of Products	Number of nutrition related claims	% of products with any nutrition related claims	Number of nutrient claims	% of products with any nutrient claims
Sports drinks	38	74	97.4	68	97.4
Breakfast cereals	183	624	88.5	582	87.4
Meat substitutes	64	61	95.3	49	76.6
Pretzels/Rice cakes	41	75	92.7	32	75.6
Muesli bars	141	255	80.2	231	73.8
Yoghurt	280	524	75.0	309	72.5
Edible oils	172	347	75.0	178	70.3
Soup mixes	39	28	70.0	28	70.0
Eggs	43	80	67.4	56	62.8
Drink bases	43	87	60.5	66	60.5
Juices	370	534	75.7	314	59.2
Canned beans	92	320	79.3	196	57.6
Milk and milk substitutes	230	514	63.0	313	55.7
Fat spreads	149	170	58.4	119	53.0
Bread	134	222	64.9	179	51.4
Canned pasta	54	153	74.0	60	50.0
Canned soup	158	351	73.0	76	45.0
Rice	75	172	44.0	115	44.0
Canned fruit	230	325	43.5	102	43.5
Coconut milks/creams	31	36	58.1	16	38.7
Salad dressings	122	180	65.6	63	34.4
Crumpets	6	2	33.3	2	33.3
Cheese	343	212	31.2	168	30.3
Salsas and pestos	39	36	51.3	11	28.2
Cream	56	16	28.6	15	26.8
English style muffins	19	9	26.3	9	26.3
Fruit bars	70	35	50.0	30	25.7
Processed meats	122	110	38.5	43	25.2
Seafood products	65	59	66.2	28	24.6
Custard	25	38	44.0	11	24.0
Spreads	367	313	35.6	140	23.6
Ice cream	321	177	25.2	106	22.4
Biscuits and crackers	756	313	29.5	308	22.2
Cordial and water ices	164	163	43.9	45	22.0
Soft drinks	287	117	21.6	99	21.3
Chips	371	479	65.8	124	20.2
Cooking sauces	397	291	44.0	53	12.0
Vegetables	389	342	49.9	46	8.0
Meats	143	51	35.7	11	7.7
Olives	33	6	18.2	0	0.0
Total	**6662**	**7901**	**51.3**	**4401**	**36.2**

Table 4: Percentage of products with nutrient claims

Product category*	Energy	Protein	Fat	Chole-sterol	Carbo-hydrate	Sugar	Fibre	Vitamins & Minerals	Sodium	Other**	Comparative
Cereal products (n = 1409)	5.4	1.8	28.5	14.4	13.8	4.6	19.1	8.5	6.6	3.6	2.8
Dairy products (n = 1255)	1.2	1.5	31.0	7.0	0.0	2.8	1.4	14.3	0.5	3.3	8.5
Drinks (n = 902)	10.3	0.3	2.2	0.1	1.0	17.2	0.6	19.1	0.3	4.2	0.6
Vegetables & fruit (n = 744)	6.9	4.3	8.3	3.8	0.8	9.9	7.1	0.4	3.3	3.2	1.5
Fats and oils (n = 443)	0.0	0.0	16.6	41.2	0.0	0.2	0.0	1.1	10.2	1.8	6.3
Meat & substitutes (n = 437)	0.0	9.4	17.1	10.1	0.0	0.0	0.5	6.4	1.6	0.2	1.6
Soups (n = 197)	0.0	0.0	43.0	0.0	0.0	0.0	2.6	0.0	7.1	2.6	0.0
Other products (n = 1275)	1.3	0.0	8.4	4.7	0.0	5.3	0.9	1.5	1.3	4.5	3.8
All products (n = 6662)	**3.8**	**1.8**	**18.2**	**9.1**	**3.1**	**5.9**	**5.5**	**7.9**	**3.1**	**3.4**	**3.7**

* Product categories defined as follows:

Cereal products – breads, breakfast cereals, biscuits, canned pasta, crumpets, muffins, muesli bars, pretzels, rice cakes, rice
Dairy products – milk, cheese, yoghurt, cream, custard, ice cream
Drinks – juices, cordials, soft drinks, sports drinks, drink bases
Vegetables and fruit – canned beans, canned fruit, canned and bottled vegetables, olives
Fats and oils – edible oils, fat spreads, salad dressings
Meat and substitutes – meats, processed meats, meat substitutes, seafood, eggs
Soups – canned soup, soup mixes
Other products – chips, cooking sauces, fruit bars, salsas, spreads, coconut milks

**Other = lycopene, GI, phytoestrogens, sterols, amino acids, antioxidants

Table 5: Wording used for claims (percentage)[#]

	Energy (n=275)	Protein (n=119)	Fat (n=1344)	Chole-sterol (n=605)	Carbo-hydrate* (n=168)	Complex Carbohydrate* (n=41)	Fibre (n=372)	Sugar (n=408)	Sodium/ Salt (n=194)	Vitamins Minerals (n=717)	Phytoestroge Isoflavones (n=43)
COPONC											
Source/contains/with/ supplies/tick/giving	18.1	30.3	2.0		19.0	19.5	37.4	0.5		44.4	25.6
Good source	2.5	21.8	0.5		1.2	4.9	7.0			17.8	7.0
Very good source										0.1	2.3
Excellent source					0.6		4.8			4.3	2.3
Ideal source					0.6						
High	2.9	29.4			61.3	75.6	43.0			10.7	
Very high							2.4				
Highest							0.3				
Extra/added/boosted/ increased/enriched		3.4					1.3		0.5	1.8	
Low	20.0		26.1	3.3				4.4	13.9		
Very low									6.7		
Lower			0.4								
X% less			0.4								
Reduced			6.4						12.9		
No/Zero/Free			5.7	96.7				2.7	31.4		
Diet	21.5										
Light/Lightly	2.5		4.5						0.5		
Unsalted									4.1		
Unsweetened								1.0			
% Free**			46.0					0.2			
FSC											
Amount per serve	8.0		1.0								2.3
% RDI/Daily needs							1.9			10.0	
Monounsaturated			0.1								
Other											
Guaranteed		4.2									
X% (nutrient)			3.2				0.8	0.5			
Packed with	1.5				0.6						
No added			1.0					89.2	29.9		
Medium											
Skim/Slim/Trim/Lean	0.7		1.4								
Rich in/rich source	0.4	9.2	0.7		14.3		0.3			10.8	60.5
Great source		0.8									
Instant	0.4										
Nutritional	0.7										
Sustained	17.1										
Replaces	1.1				0.6						
Power	2.5										
All cereal		0.8									
Natural					1.2		0.8	1.5			
Modified			0.6								
Made from 15 CHOs					0.6						
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Not included in COPONC ** COPONC only permits %Free with fat

[#] Shaded columns are generally covered by the FSC, not by COPONC

Table 6: Non-compliant nutrient claims (out of total of 4401 claims)

Reason for non-compliance	Source of criteria	Number of non-compliant claims	Percentage of claims that are non-compliant
Claim does not meet defined nutritional criteria:			
Cholesterol free	COPONC	105	17.9
% Fat free	COPONC	63	10.2
High fibre	COPONC	19	11.9
Source of protein	FSC	14	11.8
Low fat	COPONC	13	3.7
%RDI vitamin/serve	FSC	6	8.3
Good source of vitamin or mineral	FSC	3	2.3
Source of fibre	COPONC	1	0.7
Very high fibre	COPONC	1	11.1
		Total 225	(5.1)*
Nutrient claim made but no values declared in NIP:			
Gluten	FSC	27	9.6
Saturated fat	FSC	16	59.2
Cholesterol	FSC	13	2.1
Vitamin or mineral	FSC	13	1.8
DHA/Omega 3 fats	FSC	9	19.1
Light	COPONC	5	7.1
% Fat free	COPONC	4	0.6
Low fat	COPONC	3	0.9
Fibre	COPONC	2	0.5
Reduced fat	COPONC	1	1.2
		Total 93	(2.1)*
% Fat free claim, without statement of % fat in close proximity	COPONC	89	14.4
Reduced claim, without required comparative statement of percent reduction and reference food			
Fat	COPONC	54	55.7
Salt	COPONC	7	24.9
Sugar	COPONC	5	45.5
Energy	COPONC	1	1.5
		Total 67	(25.0)**
Light/Lite claim, without a statement of the characteristic that is light	COPONC	48	68.5
Cholesterol free claim, but no reference to the whole class of similar foods	COPONC	30	5.1
Low fat claim, but no reference to the whole class of similar foods	COPONC	7	2.0
Low joule/Diet claim, without required statement of energy content	FSC	7	6.1
Total		**566**	**12.9**

* percentage of all nutrient claims that are non-compliant

** percentage of all Reduced claims that are non-compliant

Table 7: Protein content of products carrying protein nutrient claims (mean ± SD; range)

Nutrient Claim	g protein per 100g	g protein per serve	% Energy from protein
Source/Contains/Provides/Guaranteed (n = 34)	14.4 ± 6.7 (5.3 – 23.0)	10.5 ± 5.1 (5.3 – 19.6)	29.9 ± 13.7 (13.9 – 46.0)
Good source/High/Rich/Extra (n = 84)	9.8 ± 7.0 (1.7 – 31.0)	10.6 ± 4.3 (2.8 – 19.6)	25.7 ± 9.8 (11.3 – 56.0)
Significance of difference (p =)	0.002	0.930	0.105