NZFSA Policy on Organic Food: A Background Paper

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1 Executive Summary

There is considerable growth in the domestic and export trade of organic food products. For example, in the 2006-2007 financial year New Zealand's organic food exports grew by approximately 17.5 per cent. Organic food products are now available in many supermarkets, and are often differentiated from 'conventional' foods through implicit claims that organic food is healthier, safer and better for the environment.

Organic agriculture is well established in New Zealand and there are several large companies, including Fonterra, Zespri and Heinz Watties, as well as many smaller producers and boutique operators participating in the sector.

This paper provides an introduction to organic food in New Zealand and a background to NZFSA's policy position on organic food.

The paper was originally written to inform the development of the NZFSA policy statement and consumer information on organic food.

2 Introduction

The intention of this paper is to explore NZFSA's role in relation to organic food. The paper provides:

- a brief history of organic agricultural practices
- the current profile of the organics sector in New Zealand and overseas
- a brief summary of current research into differences between the food safety and nutritional profiles of organic and conventionally produced food
- a survey of public statements about organic food made by selected overseas regulatory agencies

Consideration of NZFSA policy in relation to organic food is appropriate at this time given the growth in the market for organic food and the significance of organic food in the New Zealand food supply.

2.1 The role of NZFSA

NZFSA is the department of state responsible for the regulation of food safety and suitability and works toward the achievement of three primary outcomes:

- Improved safe and suitable food
- Improved business opportunities through safe and suitable food
- Consumer food practices and choices that support better health

NZFSA is responsible for the administration of the Food Act 1981, the Animal Products Act 1999, the Wine Act 2003 and the Agricultural Compounds and Veterinary Medicines Act 1997.

3 Background

3.1 Definitions of organic food

Organic food can be defined as food that is produced from organic agricultural practices. Organic agriculture is a production system that 'avoids or largely excludes the use of synthetic fertilizers, pesticides, growth regulators, and livestock feed additives.'[1] In lieu of such synthetic inputs, organic production systems rely on 'crop rotations, crop residues, animal manures, legumes, green manures, off-farm organic wastes, and aspects of biological pest control to maintain soil productivity, supply plant nutrients, and control insects, weeds and other pests.' [2]

Organic agricultural practices are premised on a philosophy of farming articulated through four basic principles: the principles of health, ecology, fairness and care.[3] These principles are also indicative of the concerns of organic food consumers who often cite 'health, taste and environmental benefits … to be important considerations in the choice of organic foods.'[4]

Although there is some debate about the relative effectiveness of organic agricultural practices in improving environmental outcomes,[5] there appears to be a measure of consensus, especially in the European Union (EU),[6] that organic agriculture is environmentally sound and sustainable.

3.2 The development of organic production

Organic agriculture began as a reaction to the increasing industrialisation of agriculture, and came to prominence in the early 1940s with the publication of several influential books.[7] Consciously organic

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1 Faidon Magkos et al. 2006. 'Organic Food: Buying More Safety or Just Peace of Mind? A Critical Review of the Literature'. *Critical Reviews in Food Science and Nutrition* 46 (1), p. 24

2 Ibid. p. 24

3 International Federation of Organic Agriculture Movements (IFOAM), http://www.ifoam.org/about_ifoam/principles/index.html, accessed on 6 November 2007

4 E Lea and T Worsley. 2005. 'Australians' organic food beliefs, demographics and values'. *British Food Journal* 107 (10/11) p. 856

5 A Trewevas. 2001. 'Urban myths of organic farming'. *Nature* 410, p. 409-410

6 European Council Regulation (EC) No 834/2007 states that "organic production method … plays a dual societal role, where it on the one hand provides for a specific market responding to a consumer demand for organic products, and on the other hand delivers public goods contributing to the protection of the environment and animal welfare, as well as to rural development".

7 Lady Eve Balfour's *The Living Soil* (1943), Lord Northbourne's *Look to the Land* (1940), and Sir Albert Howard's *An Agricultural Testament* (1940). The term "organic farming" was first used by Lord Northbourne in his description of the farm as

agriculture[8] developed slowly from this time with distribution of organic food products being achieved primarily through small-scale local networks. In 1972 the International Federation of Organic Agriculture Movements (IFOAM) was established as an overarching body to co-ordinate relationships and to maintain reference standards for local organic producer organisations and organic retail co-operatives.

The 1980s saw an increase in the popularity of organic foods among consumers which led to pressure on regulatory authorities to provide regulatory recognition of organic agricultural practices. Since the early 1990s, with increasing societal awareness of health, environmental and sustainability issues, the global market for organic food and agricultural products has grown rapidly.

Organic agriculture is now practiced in 120 countries across approximately 31 million hectares of certified croplands and pastures (accounting for approximately 0.7 per cent of global agricultural lands). The global market for organic products is estimated at US$40 billion, and accounts for, on average, 2 per cent of food retail in developed countries (2006 figures).[9] Today IFOAM operates as the worldwide umbrella organization for the organics movement, and recognises some 750 member organizations in 108 countries.

3.3 Certification

The integrity of organic products is protected through certification and labelling schemes. As noted above, most certifying organisations are recognised by IFOAM. Several governments, including those in the United States, Canada and Japan, have developed their own certification and labelling schemes, while regulatory authorities in many other countries officially recognise the certification standards of qualified bodies. It is important to emphasise that in organic agriculture 'it is the production system that is certified, not the organic products harvested from the system.'[10] A product labelled 'certified organic' is not, therefore, individually assessed to determine whether it complies with organic standards, rather, the certification label indicates that its method of production is intended to reach specific outcomes (no GM material and reduced levels of synthetic compounds in the final food) and conforms to the standards of a particular certification scheme.

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a "living organism". Also influential was the earlier work of Rudolf Steiner, whose book *Spiritual Foundations for the Renewal of Agriculture* (1924) popularized his theories of "bio-dynamic" agriculture.

8 As opposed to traditional agricultural practices that also do not rely on synthetic inputs.

9 Nadia El-Hage Scialabba. 2007. *Organic Agriculture and Food Security*. FAO., p. 2.

10 A Aitken et al. 2003. *New Zealand National Organic Sector Strategy*. Martech Consulting Group Ltd., p. 1

This approach is consistent with the risk management framework used by NZFSA and other food safety regulatory authorities internationally in general application to all food in so far as it puts most emphasis on ensuring the integrity of the food production systems and processes.

3.4 The organics movement and organics advocacy network

Trends point toward increasing demand and production capacity for organic food in New Zealand and overseas.[11] As well as the obvious economic benefits of market growth to organic producers, this also poses some challenges to the philosophical principles of organic agriculture and food.

The persistent core of the organics sector is often referred to as the 'organics movement' while the wider sector extends to large food retail chains and exporters who may carry organic products within a wider range of conventional foods. This wider sector has been referred to as the 'organics advocacy network.'[12] The organics movement is philosophically-based while the wider organics advocacy network includes businesses and organisations principally interested in the premium prices organic products demand in the marketplace.

There is potential that the organics movement may be at odds with participants in the wider organics advocacy network on some issues. Although not yet particularly pronounced in New Zealand, this is becoming a challenge in the United States and Europe where large companies, such a Walmart in the US and Tesco in the UK, are taking advantage of consumer demand for organics and offering a range of organic products in their stores. Some in the organics movement, whose philosophical underpinnings include a preference for local and small-scale distribution, view this as an 'occupation' of the organics market by large companies.[13] In the wider organics advocacy network, however, such distribution is less problematic. It is viewed as a natural market progression in response to consumer demand for products with a particular set of added values. It is possible that other private certification schemes and marks will develop as a result of this tension.

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11 *New Zealand Food Safety Authority Official Organic Assurance Programme Performance Report to USDA* (1 July 2006 To 30 June 2007). *New Zealand Food Safety Authority Official Organic Assurance Programme 2006/2007 Annual Performance Report To he European Commission*. E Lea and T Worsley. 'Australians' organic food beliefs, demographics and values'. *British Food Journal* 107 (10/11). 2005. Marvin T Batte et al. 'Putting their money where their moths are: Consumer willingness to pay for multi-ingredient, processed organic food products.' *Food Policy* 32. 2007.

12 Magnus Boström and Mikael Klintman. 'State-centred versus non-state-driven organic food standardization: A comparison of the US and Sweden.' *Agriculture and Human Values* 23. 2006.

13 Ibid.

4 Organic Food in New Zealand

Consciously organic agriculture has been practiced in New Zealand for over 70 years but New Zealand's first organic certification schemes were not established until the early 1980s.

In 1997, MAF published a comprehensive report entitled, *Organic Farming In New Zealand: An Evaluation Of The Current And Future Prospects Including An Assessment Of Research Needs*. The report, by Saunders et al, examined current research on the effects of organic agricultural systems as well as prospective research and industry initiatives in the sector. This report was followed by work over the next five years culminating in the *National Organic Strategy*, published by MAF in March 2003.

The Strategy noted the sector's goal of producing $1 billion worth of organic product exports by the year 2013. To achieve this, the Strategy proposed the establishment of a single organisation for the organics sector and made recommendations for the process through which this might be achieved. These recommendations were largely progressed through to the establishment in 2006 of Organics Aotearoa New Zealand (OANZ).

4.1 The Organics sector today

The current land area under certified organic production in New Zealand is approximately 63,883ha (2007). Figure 1 below shows the growth in land area (hectares) under organic production area since 1997.

At present, the domestic organic sector is estimated to be worth around $250 million (± $50 million) with total organic exports from New Zealand estimated at around $120-$130 million.[14]

[14] Grice, J., Cooper, M., Campbell, H and Manhire, J. (2007). *The State of the Organic Sector in New Zealand, 2007: Summary Report.* Report presented to the Organics Aotearoa New Zealand Conference, Lincoln University, 17 August 2007.

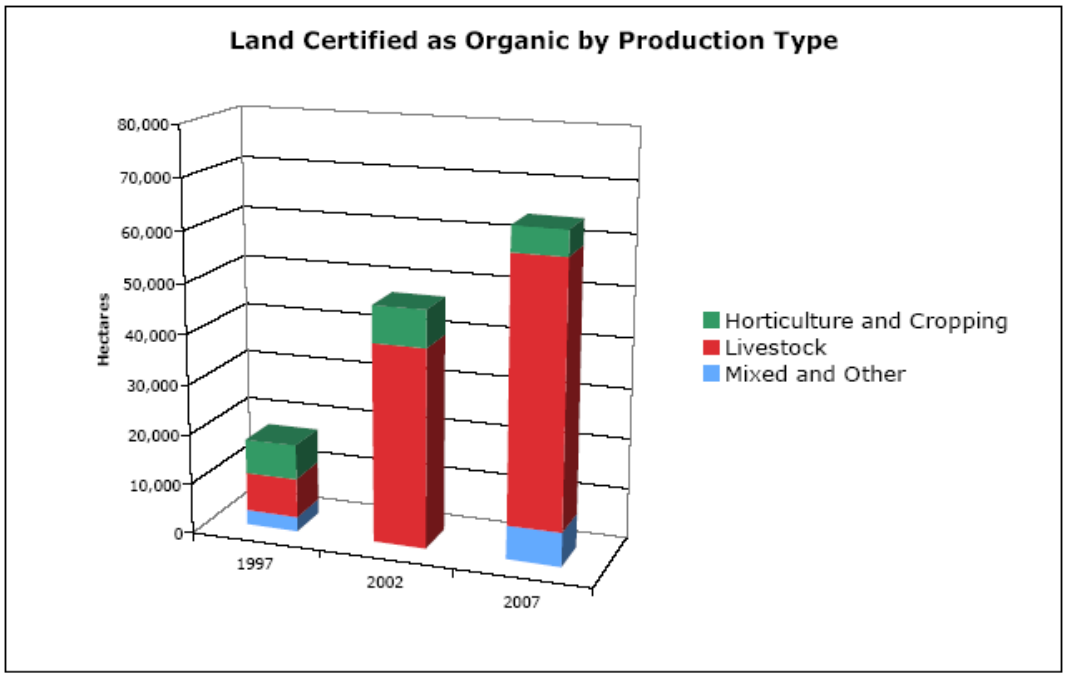

Figure 1 Total growth in area (hectares) under organic production in New Zealand (Courtesy: Grice *et al*, 2007)[15]

Organic food is distributed in New Zealand through specialty organic food stores and chains, health stores, organic produce box-delivery schemes, and through the major supermarket chains (Progressive Enterprises and Foodstuffs).

4.1.1 Maori organic agriculture

Te Waka Kai Ora, the Maori organics advocacy group, was involved in the development of the National Organic Sector Strategy. The Strategy notes that the ethical considerations of organic agricultural practices are consonant with the importance of 'food integrity' to Maori. The concept of 'food integrity' is based on the understanding that foods have particular lineage (whakapapa), and that in producing food, it is necessary to recognise and maintain that lineage.

Te Waka Kai Ora has suggested that the verification of organic produce under an indigenous brand would include the integration of tikanga Maori (customary practices) into processes and standards to

[15] Grice, J., Cooper, M., Campbell, H and Manhire, J. (2007). *The State of the Organic Sector in New Zealand, 2007: Summary Report.* Report presented to the Organics Aotearoa New Zealand Conference, Lincoln University, 17 August 2007.

ensure food integrity. Te Waka Kai Ora is developing the Hua Maori organic certification scheme to this end.

4.2 Certification in New Zealand

New Zealand now boasts three organic certification schemes:

- the Demeter label, which was registered by the Biodynamic Farming and Gardening Association in 1984 and which certifies producers to Biodynamic standards
- the BioGro label, which was established in 1983 by the New Zealand Biological Producers Council (NZBPC), a coalition of different interest groups supporting organic agriculture
- the AsureQuality organics mark which was introduced in 2001

Despite the consolidated structure of the organics sector, it remains largely independent from specific Government support and regulation. Organic certification standards are not food safety standards. Organic agricultural production and food is subject to the same regulatory and legislative requirements as apply to other forms of agricultural production.

4.2.1 Demeter

The Demeter bio-dynamic certification scheme is operated by the Bio Dynamic Farming and Gardening Association (founded 1945). Demeter certifies a relatively small number of operators to standards of bio-dynamic production, which, though comparable to organic production, relies on fewer external inputs. Food produced under the Demeter label is not eligible for export as organic under NZFSA's Official Organic Assurance Programme, but is exported in small volumes in other ways.

4.2.2 BioGro

The NZBPC began as a voluntary organisation in the early 1980s with only a few established standards under the infant BioGro certification label. At that time the 'organicness' of farms was established as much by membership of the organic agriculture movement as it was by adherence to any set of specific standards. This is not to suggest that producers were not following the principles of organic production, but rather that the tight networks of social interaction within the organic agriculture movement provided adequate assurance that standards would be followed.

The BioGro system was substantially restructured in the 1990s and today operates as a not-for-profit organisation in a commercial environment with a strict set of standards to which organic producers must closely adhere in order to retain certification.

4.2.3 AsureQuality

In 2007 AgriQuality and Asure combined to form AsureQuality. AsureQuality is a state-owned enterprise (SOE) providing a wide range of food quality assurance and biosecurity services. AsureQuality began its organic certification scheme in 2001. The entry of AsureQuality into organic certification may be seen as indicative of the increasing relevance of the sector to New Zealand agriculture as a whole.

4.3 New Zealand food law

Organic food is produced in a regulatory environment structured around four principal acts (the Food Act 1981, the Animal Products Act 1999, the Wine Act 2003, and the ACVM Act 1997), the Food Hygiene Regulations 1974 and the joint food standards system New Zealand shares with Australia (realised in the Australia New Zealand Food Standards Code). Risks associated with organic food production and processing, are managed, as with all food production and processing-related risks, by NZFSA, Territorial Authorities and Public Health Units under these legislative instruments.

NZFSA's responsibility in the regulation of agricultural compound and veterinary medicine use is particularly relevant to organics. Use of agricultural compounds in New Zealand is regulated such that any residues remaining in the final product pose notional zero risk to consumers.[16]

Agricultural compounds permitted for use in organic systems under certain conditions, such as Pyrethrum cinerafolium and bordeaux mixture (a mixture of copper sulphate, lime and water), are also subject to the same risk management requirements as other kinds of agricultural compounds.

[16] By definition it is not possible to have 'zero risk'. The term 'notional zero risk' is therefore used to describe the risk associated with consuming levels of substances below the Acceptable Daily Intake (ADI), which is the level at which a substance can be consumed for a whole lifetime without noticeable effect.

4.4 Representations about organic food

Representations about food, as about all products sold in New Zealand, are regulated under the Fair Trading Act 1986. All representations about food must be truthful and must not mislead. Although the word 'organic' can be applied in a number of contexts, the application of an organic label to a food product implies the product has been produced in conformance with the philosophical principles of organic agricultural production. Organic certification provides some assurance to retailers and manufacturers that an organic claim complies with the provisions of the Fair Trading Act.

In some countries certification organisations are registered with regulatory authorities who recognise the certifier's abilities to maintain compliance with standards of organic production. Certifiers are not registered in New Zealand for the domestic market. Apart from the requirements of the Fair Trading Act for truthful representations about food products, organic food destined for the domestic market is not subject to regulatory requirements specific to that food being organic.

Imported organic food similarly relies on recognition of certification labels to secure a market advantage.

4.5 The New Zealand Standard for organic production

Standards New Zealand published a standard for organic production in 2003 (NZS8410-2003). The standard was developed in consultation with staff from NZFSA, and from 23 other organisations with an interest in organics. The objective of the Standard is to 'set out minimum requirements for the production, handling, processing and labelling of organic products including plant and plant products, and animal and animal products.' Although the standard is relatively comprehensive, it has not been updated since its publication. It is used by a number of organisations as a reference document, including the New Zealand Qualifications Authority and the Commerce Commission; however, in order to be applied in an export certification context, the Standard would need to be updated.

4.6 Organic food for export

In 1995, with funding from New Zealand Trade & Enterprise, the Organic Products Exporters of New Zealand Inc. (OPENZ) was formed. This organisation provides a network hub along with information and advocacy for organisations involved in the export of organic food. Members of OPENZ include Fonterra, Heinz Wattie's Australasia, Zespri International, BioGro New Zealand, The Bio Dynamic Farming and Gardening Association, AsureQuality New Zealand Ltd and New Zealand Trade & Enterprise. OPENZ is now associated with OANZ.

Depending upon the country of destination, the pathways for export may be different.

1. Pathway facilitated by the NZFSA Official Organic Assurance Programme where exporters must be registered with NZFSA and a Third Party Agency (TPA) recognised by NZFSA. This pathway applies to the EU, US and Japan.

2. Pathway facilitated by organic certifying bodies in New Zealand whereby they negotiate recognition of their certification standards with the relevant overseas agency. This pathway applies to Japan.

3. Pathway facilitated by organic certifying bodies in New Zealand whereby they are accredited to IFOAM. This pathway applies to South Korea and Canada.

4.6.1 Direct recognition

Organic product exporters can make export arrangements with overseas markets that are amenable to such arrangements. This is usually achieved through New Zealand organic certifiers negotiating recognition of their certification standards with the relevant overseas agency.

One example of this pathway is the registration by Japan Ministry of Agriculture Forests and Fisheries (Japan MAFF) of Overseas Certifying Bodies, a pathway completely separate from country equivalence and the NZFSA Official Organic Assurance Programme. Organic certifying bodies in New Zealand must be registered as RFCO (Registered Foreign Certification Organisation) directly with Japan MAFF. The JAS mark (Japan's organic logo) is applied in the country of origin of the organic products under the oversight of the RFCO. This pathway is open to all plant and livestock products. Both Bio-Gro and AsureQuality have gained RFCO status with Japan MAFF.

4.6.2 The Official Organic Assurance Programme (OOAP)

Some markets have developed, or are in the process of developing, national standards for the production of organic products. These standards apply to both domestically produced and imported organic products.

The European Union (EU) is one such market which requires all third country imports of organic products to be accompanied by government assurances that the product has been produced in accordance with the rules of production laid out in the relevant EU Regulation (EC) No 2092/91 (to be replaced by EU Regulation (EC) No 834/2007 from 1 January 2009).

To ensure that access to the EU was maintained for New Zealand organic products, in 2001 OPENZ requested that NZFSA (then MAF Food) establish the OOAP for organic products exported to the EU.

The OOAP includes requirements for products of plant and animal origin (including dairy products, honey and processed foods). For organic animal products exported to the EU, an Oversees Market Access Requirement under section 60 of the Animal Products Act 1999 applies, and official assurance certificates are issued for those products under sections 61-65 of the Act. For plant products, the OOAP operates administratively in a manner that is consistent with the legislative requirements for organic animal products.

Its development has simplified access for New Zealand organic products exported to the EU and its implementation avoids the need for New Zealand exporters to obtain import licenses from individual states within the EU.

The scope of the programme has been extended to include the United States and Japan. Under the United States Department of Agriculture's (USDA) National Organic Programme (NOP), imported products must be certified by a certification body approved by USDA or be from a country recognised by USDA as operating an equivalent organic programme.

The USDA has accepted NZFSA's programme for recognition of organic certifying bodies. As such, organic products certified by an NZFSA recognised Third Party Agency (TPA) to the USDA National Organic Standards, are permitted entry into the US. At present, these certifying bodies are BioGro and AsureQuality.

For the 2006/2007 financial year, the OOAP programme had an industry cost estimated at $170,000 (excluding certificate fees). This is funded by a registration fee, and a charge per $10,000 of FOB value. This charge is updated annually.

Currently there are 627 operators registered with Third Party Agencies recognised by NZFSA to produce organic products for export. This includes 70 NZFSA-registered organic exporters. The numbers of certificates and consignment notifications issued under the OOAP are shown in Table 1.

Certificates & consignments 1 July 2006- 30 June 2007	
Consignment certificates issued for the EU	Consignment notification of the US
855	320

Table 1: Numbers of NZFSA certificates and consignment notifications (Report: Review of New Zealand Official Organic Assurance Programme (OOAP), prepared by Catalyst R&D, September 2007)

During 2006-2007, almost NZ$86.5 million of organic products were exported under the NZFSA OOAP. This is an increase of approximately $12.9 million (approximately 17.5 percent) in value from 2005-2006.

The growth in New Zealand's organics exports is demonstrated by the increase in certification activity under the OOAP. From the period 1 July 2006 to 30 June 2007, for example, there were 855 certificates issued for consignments exported to the EU. This is an increase of almost 33% in numbers of certificates from 2005/2006. The period 1 July 2006 to 30 June 2007 also saw the volume of New Zealand organics exports to the United States more than double to some 20039.37 tonnes. Figure 2 below provides the overall distribution of export value of organic products (including organic products exported under NZFSA OOAP) by category.

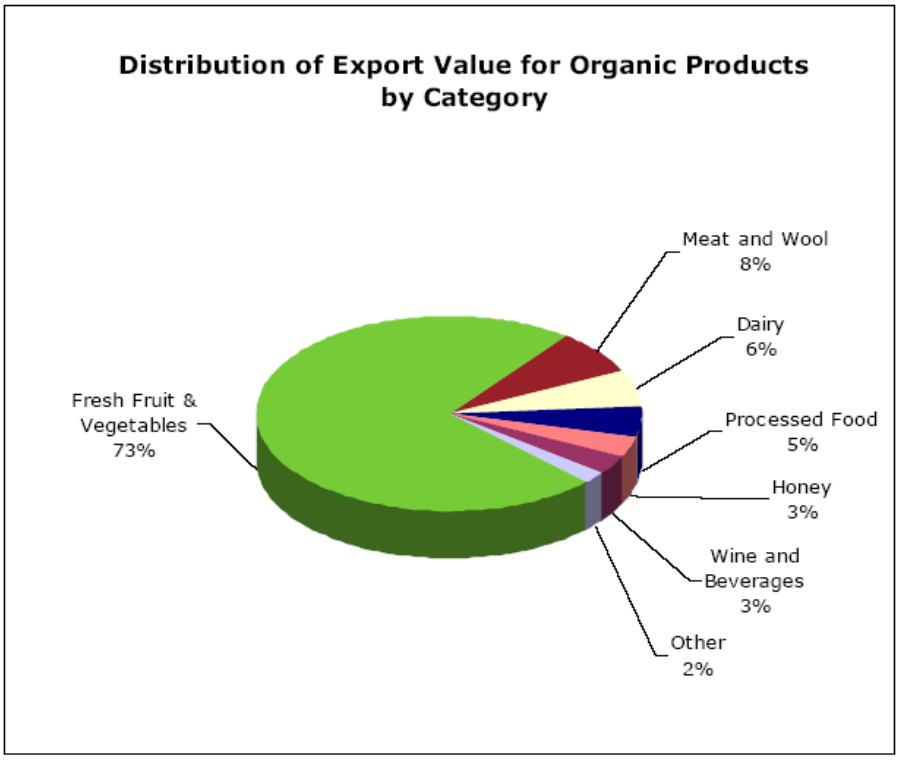

Figure 2: Distribution of Export Value for NZ Organic Products by Category for the year 2006-07 (Grice *et al*, 2007)

4.6.3 Review of the OOAP

In September 2007, OPENZ published a review of the OOAP prepared by Catalyst R&D. The report identified issues that were of significance to exporters. These included the complexity of documentation and administration systems associated with the programme and cost of certification. It

was also noted that the cost recovery for certification is complex and not readily understood with major costs arising from internal staff costs necessary for gaining certification.

- The review made several recommendations, including:
- That OPENZ works actively with NZFSA and with industry to develop a more effective certification process. This should include consideration of an electronic system and the development of specifications for electronic certification for the EU so that the industry can actively consider the cost and benefits of this option.
- That OPENZ establishes a more robust structure for management of NZFSA activity. This should include consideration of:
    - The amount of levy and a mechanism for collection and use that is equitable, justifiable, transparent and efficient. Specifically, the realignment of costs for certification and market access maintenance and management should be addressed.
    - The mechanism by which market access activity is undertaken. Options may include OPENZ collecting the market access levy and directly managing or tendering for market access activity.
    - The maintenance of capability within NZFSA.
- That OPENZ works with certifiers to:
    - Review the role of private certification in key markets, and
    - If appropriate design and implement a single base standard for NZ with appropriate modules for specific markets.

NZFSA has a good relationship with OPENZ and will be working with exporters to implement, where appropriate, recommendations for improving the programme.

4.6.4 Market access

Codex

The Codex Alimentarius Commission's Committee on Food Labelling has developed the *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods* with a view to facilitating trade and preventing misleading claims. The *Guidelines* are intended to facilitate the harmonization of requirements for organic products at the international level, and may also provide assistance to governments wishing to establish national regulations in this area.

The Codex Alimentarius Commission adopted the *Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods* at its 23rd Session in 1999, with the exception of the provisions for livestock and livestock products that were adopted at its 24th Session in 2001. There have also been subsequent amendments to update the *Guidelines* on the request of member countries.

The *Guidelines* include general sections describing the organic production concept and the scope of the text; description and definitions; labelling and claims (including products in transition/conversion); rules of production and preparation, including criteria for the substances allowed in organic production; inspection and certification systems; and import control.

Japan MAFF based the development of its national standard for organic production on the Codex *Guidelines for the Production, Processing, Labelling, and Marketing of Organically Produced Foods*.

NZFSA has been involved (though not actively initially) since the mid nineties with the development of the Codex *Guidelines.* Since the NZFSA OOAP was established, NZFSA has become more actively involved and on 28 April 2008 the Codex Committee on Food Labelling (CCFL) approved inclusion of ethylene for ripening organic kiwifruit and bananas in the Codex organic guidelines. The decision will be finalised by the Commission in July this year.

4.6.5 Organics Technical Committee

The Organics Technical Committee provides comprehensive and balanced advice to NZFSA on matters relating to the NZFSA Technical Rules for Organic Production (NZFSA Standard OP3, Appendix Two), which form the basis for the NZFSA Official Organic Assurance Programme. The Committee works to ensure technical credibility with overseas markets and applicability for New Zealand organic production and to promote the exchange of information and views as a vital part of the consultation process. In addition the Committee assists in the development and ongoing review of the NZFSA technical Rules for Organic Production, and that these are adequate to administer the NZFSA Official Organic Assurance Programme, in line with Government policy and the NZFSA strategic and operational plans.

The Committee is comprised of a representative designated by each of the invited organisations. These organisations are OPENZ, Bio-Gro, AsureQuality, NZFSA Assurance Authority and other technical experts as necessary. The member organisations are selected to cover as wide a range of technical expertise as possible from groups directly impacted by NZFSA Technical Rules for Organic Production. NZFSA is represented on the Committee by Technical Adviser Organic & Plant Products and the organic project team members as appropriate.

5 New Zealand Government policy areas with an interest in organics

5.1 Agricultural policy

The Ministry of Agriculture and Forestry's (MAF) published a position paper on organic agriculture in 1996. This paper discussed organic agricultural within a wider context of sustainability. The policy position recognised organic farming as "one of several systems that can move NZ farming practices towards the goal of sustainability. MAF recognises that the organic viewpoint and practices can help to achieve more sustainable outcomes for NZ farming".

Although MAF has placed organics within the category of sustainable farming, MAF's policy position does not privilege organic production above other sustainable farming practices.

5.2 Consumer and competition policy

The Commerce Commission takes the position that for an organic claim to be applied to a food, that food must have been produced and managed to organic standards from 'seed to supermarket'. The Commission argues that as the Fair Trading Act 1986 is about consumer perception, an organic claim necessarily implies that a product is 100 per cent organic. Every ingredient in an organic food product must be organic. This is similar to the Commission's approach to 'GE/GM Free' labelling, whereby 'free' means precisely that, entirely free of GM in the production and processing of the food product.

The Commission is at odds with the voluntary New Zealand Standard (as described in 4.3 above) which states in section 11.2(b) that 'one hundred per cent of a whole food or 95-100% of the ingredients of a multi-ingredient product (by weight or fluid volume, excluding salt and water) is organically produced and processed…' The situation is also complicated by the regulation of organic food in some other markets which have a graduating scale for 'organicness' (eg. the US).

The Commission has taken several cases of misleading organic claims to Court, however, each of these cases has resulted in a guilty plea. There has not therefore been an opportunity to establish precedent for the interpretation of the Fair Trading Act in respect of organic claims.

6 Background Research

The following literature review and review of the public communications of comparable overseas agencies on organic food has been undertaken to provide background to possible NZFSA policy position options on organic food.

6.1 A literature review

This literature review covers two principal aspects of research on organic food: the safety of organic foods and the differences between the nutrition profile of conventionally and organically produced foods. Provided below is a summary of the findings of this review (the full version is attached at Appendix 2). The literature review is far from comprehensive; it should be read simply as an indication of available research to inform discussion on any public statements NZFSA might wish to make about organic food.

Food safety

- Organic foods show significantly reduced levels of pesticide residues but the marginal benefits of reducing dietary exposure from present levels of residues through increased consumption of organic produce appear to be insignificant
- Although the use of animal manure in organic production would suggest a greater risk of microbiological contamination in organic food, this hypothesis has not been borne out in studies of certified organic food
- There is some consistent evidence that organic foods of plant origin contain lower levels of nitrates that conventionally produced foods
- The effect of natural toxins in organic and conventional produce warrant further study
- The safety of biological pesticides cannot be automatically assumed, but the very few studies to date have found no difference between residues of biological pesticides in organic and conventional food
- There have been no studies to test the hypothesis that copper fungicide use in organic production leads to higher levels of copper in certain organic foods of plant origin

Nutrition

- There is consensus among the studies reviewed that general conclusions about differences in the nutrition profile of organic and conventional food are impossible at this time
- Some studies demonstrate differences in the levels of particular nutrients, but such findings are inconsistent
- There appears to be a difference in levels of plant secondary metabolites such as organic acids and polyphenolic compounds[17] between organic and conventional foods in favour of organic foods.

6.2 NZFSA's science work on organic food

The NZFSA Science Group has commissioned ESR to include a category for organic food in the National Produce Survey, examining microbiological profile of imported and domestically produced foods. This will provide some insight into how organic foods compare, in terms of microbiological status, with conventionally produced foods, in New Zealand across a number of food types.

6.3 Policy positions of overseas regulatory agencies

The public communications of four regulatory authorities comparable to NZFSA were surveyed: The United Kingdom Food Standards Agency (UKFSA), the New South Wales Food Safety Authority (NSWFSA), the Food Safety Authority of Ireland (FSAI), and the United States Department of Agriculture (USDA). This brief survey was undertaken to gauge the kinds of public statements made by agencies comparable to NZFSA about organic food. Common statements include:

- definitions of organic agriculture that cite environmental, sustainability and health concerns as being foremost in the minds of producers and consumers of organic products. The environmental and sustainability aspects of organic production are especially emphasised in the EU countries where the EC directive on organic agriculture explicitly cites an environmental benefit to organic production systems.[18]

[17] Polyphenols are a group of chemical substances found in plants, characterized by the presence of more than one phenol unit or building block per molecule. Polyphenols are generally divided into hydrolyzable tannins (gallic acid esters of glucose and other sugars) and phenylpropanoids, such as lignins, flavonoids, and condensed tannins. Some research indicates that a number of polyphenols may have antioxidant characteristics with potential health benefits.

[18] Council Regulation (EC) No 834/2007 reads: "Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the

- statements to describe the role of the regulatory authority in relation to organic food production, distribution and retail. The stances of the agencies tend toward “providing accurate information to the public”;

- statements to the effect that organic products do not raise “any immediate public health concerns” and that organic food must meet the same standards as conventionally produced food;

- information on organic certification and the regulation (if applicable) of organic food. This is often accompanied by encouragement to consumers to purchase *certified* organic products;

- statements to the effect that, as certified organic agriculture limits the input of synthetic chemicals, it can be expected that organic food will contain fewer residues of those chemicals. It is also usually stated that the residue limits set for conventional food are such that they do not pose a risk to human health.

- statements that describe the inconclusive results of comparative studies of the nutritional profile of organic and conventional foods. It is also noted (especially on the FSAI website) that the only scientific way of telling the difference between organic and conventionally produced food is if the food in question contains certain residues of synthetic pesticides or veterinary medicines;

- discussion of potential differences in the sensory quality of organic and conventionally produced food: differences are generally subjective and dependent on a range of factors including storage and transportation of produce.

Full details of the survey of overseas regulatory agencies public communications about organic food is at Appendix 3.

application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes.”

7 NZFSA's role in relation to organics

NZFSA has a role in relation to organic food in so far as the Authority administers New Zealand's food safety legislation, to which all food, including organic food, must comply. This legislation includes the general provisions of the Food Act 1981, the primary production and processing provisions of the Animal Products Act 1999, the Wine Act 2003, the joint standards of the Australia New Zealand Food Standards Code, standards for the use of agricultural compounds as set out in the Agricultural Compounds and Veterinary Medicines Act 1997 and food hygiene requirements as set out in the Food Hygiene Regulations 1974. Food safety risks associated with food production and retail, whether organic or otherwise, are managed by the regulatory frameworks established under these pieces of legislation.

Nevertheless, the growing public interest in organic food has meant that both NZFSA and the Minister for Food Safety receive an increasing number of enquiries about organic food. Industry interest in greater engagement with government is also high.

The Authority's existing role in facilitating the OOAP is highly valued by the sector and underscores the importance of access to overseas markets for organic producers. NZFSA's OOAP staff note that their current engagement with sector representatives is limited to technical trade discussions.

NZFSA's role in relation to organics is analysed below.

7.1 NZFSA Statement of Intent

The NZFSA SOI sets out three high level outcomes against which the Authority's role in relation to organic food can be analysed. Those outcomes, and a description of how they relate to organic food are set out below.

1. **Improved safe and suitable food,** which includes:

- *Reducing the prevalence of food-borne illness*

  Food safety risks associated with organic food are managed under the same regulatory framework as risks associated with other categories of food. Organic production, with its eschewal of synthetic inputs, should produce food at least as safe as conventional production practices. Of particular concern in New Zealand is the high rate of Campylobacter infection in

organic poultry and the reality that many of the intervention methods being considered for poultry in general, are not permitted under rules of organic production.

- *Improving the uptake of essential nutrients*

  Organic foods are often claimed to contain higher concentrations of some nutrients in comparison to the same foods produced by conventional means. Some research on specific nutrients appears to support this hypothesis out. Surveys of the literature note, however, that it is not possible to make generalisations about the nutritional differences between organic and other foods.

  NZFSA is currently implementing food standards for the mandatory fortification of leavened bread with folic acid and iodine. Fortification is expected to increase folic acid intake in women aged 16-44 years, thereby reducing the number of pregnancies affected by neural tube defects. Fortification with iodine will reduce the prevalence of iodine deficiency disorders in the general population.

  Organic breads are excluded from the fortification requirements. Therefore consumers of these products may wish to consider the fortification status of breads in their purchasing decisions and alternative food sources of folic acid and iodine, as well as discussing supplementation options with their doctor or midwife.

- *Accurate ingredient labelling for allergens*

  Organic foods are subject to the requirements of the Australia New Zealand Food Standards Code for allergen labelling.

2. **Improved business opportunities through safe and suitable food,** which includes:

- *Ensuring the confidence of overseas governments in New Zealand food*

  NZFSA operates the OOAP to provide overseas governments with assurances that New Zealand organic food meets their market requirements. This role is valued by organic exporters.

- *Pro-actively monitoring and responding to global food safety and regulatory requirements*

  NZFSA monitors our trading partners' market access requirements for organic food through the OOAP programme and in consultation with OPENZ. When necessary the technical rules for organic exports are changed to meet overseas market access requirements. NZFSA is also involved in the development of Codex standards for organic food.

- *Work strategically with industry to map likely new food products and technologies and to allow industry to respond to consumer ethical concerns*

  Ethical and environmental considerations are taken into account by a growing number of consumers in making food purchasing decisions. These ethical and environmental considerations may include animal welfare, labour practices and employee welfare, soil and water degradation, product and input distribution systems, habitat destruction and carbon emissions. The development of an indigenous organic standard by Te Waka Kai Ora also introduces a cultural dimension in considering further engagement with organics.

  Organic food is perceived positively in relation to many of these ethical, cultural and environmental considerations. NZFSA, along with its counterpart agencies overseas, has consistently taken the position that these considerations are not food safety issues, and though valid, are not appropriately addressed under food safety law.

3. **Consumer food practices and choices that support better health,** which includes:

- *Allowing consumers to use information to choose foods that support better health, lessening the chance of disease related to food intake*

  Consumers are often subject to conflicting health messages about food. The Ministry of Health recommends healthy adults 'eat a variety of healthy foods each day from each of the four major food groups.' The Ministry also recommends 'eating at least five servings of vegetables and fruit each day; at least three servings of vegetables and two servings of fruit.'[19] To date there is no convincing evidence that replacing consumption of conventional produce with consumption of organic produce over the long term provides an additional health benefit to that provided by eating the recommended daily servings of vegetables and fruit.[20]Promotion of organic foods as superior to conventionally produced vegetables and fruits may confuse consumers, and lead to them consuming less vegetables and fruit. In light of this, there may be a need for clear messages that emphasise the health benefits of maintaining a healthy diet, whether organic or not.

- *Ensuring that all consumers can use labels for long-term health, working with other agencies and targeting NZFSA's efforts*

[19] The Ministry of Health, (2003) *Food and Nutrition Guidelines for Healthy Adults: a Background Paper.* Wellington.
[20] Cancer Council Australia, 2007*Position Statement: Fruit, Vegetables and Cancer Prevention*, October. Available at http://www.cancer.org.au//File/PolicyPublications/PSfruitvegetablesandcancerprevention.pdf

Organic foods must comply with the nutrition labelling requirements as set out in the Australia New Zealand Food Standards Code.

- *Ensuring that New Zealanders access authoritative, clear information about food and nutrition-related risks.*

  As noted in the first bullet under this SOI outcome, it is important that the public health messages in respect to maintaining a healthy diet be promoted. In this regard, it is important that NZFSA emphasise its role in ensuring the safety of all food available for sale in New Zealand, no matter how it is produced.

8 Appendix 1: Literature review

8.1 Introduction

This literature review covers two principal aspects of research on organic food: the safety of organic foods and the differences between the nutrition profile of conventionally and organically produced foods. The literature is far from comprehensive and should only be read as an indication of available research and not as a scholarly assessment of that research.

The review found the availability of high quality scientific studies on the food safety and nutrition characteristics of organic food to be limited. The same conclusion is reached in three recent reviews of the available literature: Bourn and Prescott (2002), Magkos et al (2006) and Winter and Davis (2006).

The oft-cited reason for the lack of high quality research is the difficulties inherent in designing and carrying out sound comparative studies of food produced through conventional and organic agriculture. Such studies suffer from a vast range of confounding factors such as genetics, differences in agronomic practices in different regions, soil conditions, climate, and post-harvest treatment. Those studies that have attempted to draw tentative conclusions from their work (for example, Curt et al 2003) do so with the proviso that "further research is necessary." There does, however, seem to be consensus that levels of pesticide residues are markedly lower in organic produce. The real health effects, if any, of these lower levels have yet to be determined.

The difficulties inherent in comparative studies were especially prominent in consideration of the nutritional differences between conventionally and organically produced foods. Well designed comparative nutrition studies must pragmatically place severe restrictions on the range and source of products they sample to avoid a multiplication of confounding variables. Conclusions drawn from such studies, though potentially applicable to particular varieties, are few. General survey studies find therefore that broad conclusions in regard to differences between conventionally and organically produced foods in terms of nutritional quality are at present impossible.

Though it was found that the available research in the areas of food safety and nutrition is limited, it was also noted that there are a number of studies published in languages other than English, and especially in German, which may be useful in a wider survey.

8.2 Food safety

Organic food producers and processors must meet relevant regulatory standards in the jurisdictions in which they operate. In addition to regulatory requirements and in order to meet the organic certification requirements, processors must further demonstrate compliance with organic standards. The precise design of such standards differ across the world, with some (as in the United States and Europe) being inscribed in legislation, while others are private standards recognised by regulatory authorities (as in New Zealand).

With the level of scrutiny (both regulatory and private) applied to organic food production and processing, it is sensible to infer that organic food would be as safe as conventionally produced food (which must comply with regulatory standards only).

8.2.1 Pesticide residues

Claims made for organic production include the claim that organic foods contain fewer residues of synthetic agricultural compounds than conventionally produced foods because such compounds are not permitted in organic food production. The implication of this claim is that residues of synthetic agricultural compounds in conventional agriculture are, to some extent, unsafe, and that, therefore, organic foods are 'safer'.

On this point, almost all of the studies reviewed agreed the results of residues surveys of conventional food show very low levels of residues of synthetic agricultural chemicals corresponding to very little risk. As such "from a practical standpoint, the marginal benefits of reducing human exposure to pesticides in the diet through increased consumption of organic produce appear to be insignificant" (Winter and Davis, 2006).

It was generally agreed, however, that organic foods show significantly reduced levels of pesticide residues. A study by Baker et al (2000), which surveyed data from three large US residue monitoring programmes found that "organically grown foods consistently had about one-third as many residues as conventionally grown foods, and about half as many residues as found in IPM [integrated pest management]/NDR [no detectable residue] samples." Another study, which cites studies by Baker et al and others, concludes that overall pesticide contamination is approximately ten-fold greater in conventional than organic produce (Magkos et al 2006). A New Zealand-based study (Bourn and Prescott, 2002) suggests that "it is likely that consumers of organically produced food would at the very least consume fewer types of residues."

This does not, of course, indicate the total absence of synthetic pesticide residue in organic foods. In a study from the Lombardy region of Italy (Tasiopoulou et al, 2007), researchers concluded that "organic

foods are not necessarily free from pesticides and other synthetic chemicals of conventional farming," but that analysis of the samples in their survey "showed a 10-fold greater contamination in conventional products (27%) compared to organic food samples (2.6%)."

Bourn and Prescott, from Otago University, note that the organic industry does monitor its products for the presence of synthetic residues. In New Zealand the organic certifier Bio-gro, for example, holds residue data generated through testing of products from farms undergoing conversion. This data has not, however, been systematically evaluated in order to extrapolate general conclusions. The authors also note studies by Zespri NZ and Heinz-Watties Ltd claiming no detectable residues in their organic products.

Only one study in the review contended that levels of pesticide exposure (to persistent organophosphorous pesticides in particular) from conventionally produced food may pose a health risk to, in particular, children. The study surveyed the eating habits of 44 children aged 2-5 years in the Seattle metropolitan area, and analysed urine samples from those children for the presence of residues of organophosphorous pesticides. The authors conclude that a diet consisting largely of organic foods and juices "may be able to shift children's exposure from a range of uncertain risk to a range of negligible risk within the context of the US EPA's current risk framework" (Curl et al, 2003). Although the study was carefully planned and executed, the authors noted that, to their knowledge, it was the first of its kind. In order for general conclusions to be drawn from it further studies with wider sampling protocols would need to be conducted.

8.2.2 Microbiological contamination

In considering the hypothesis that organic food is at greater risk of microbiological contamination than conventionally produced food, one study concludes that the "bulk of available evidence from comparative studies shows no significant differences in the bacterial status of organically and conventionally grown cereal (wheat, rye) and vegetables (carrots, spring mix, swiss chard, salad vegetable crops)" (Magkos et al, 2006).

The use of animal manure in organic production systems (as opposed to synthetic fertiliser inputs) is seen by some as leading to a greater risk of microbiological contamination. Bourn and Prescott (2004) notes, however, that organic certification requires animal manure to be composted to a particular standard (Bourn and Prescott, 2002). Winters and Davis (2006) note that "the results of the study [Mukherjee et al, 2004] clearly indicate differences in the microbiological safety on non-certified and certified organic produce but do not demonstrate that certified organic production is at a higher microbiological risk than conventional produce." Bourn and Prescott (2002) note that organic certification requires regular auditing of farm production practices including the adequate composting

of manure. Conventional production, which also utilises composted manure, is not subject to such audits.

One study (Magkos et al 2006) noted that rates of *Campylobacter* infection in organic poultry flocks were "far higher" than a counterpart conventional flock, but that "with the exception of parasite-related diseases referred to above, it was concluded recently that health and welfare in organic herds appears to be the same or slightly better than in conventional herds." Winter and Davis (2006) note inconclusive results in regard to differences in microbiological contamination in food producing animals due to the non-use of antibiotics in organic systems. They do, however, assert that "the prohibition of antibiotic use in organic animal production also appears to be responsible for the lower incidence of antimicrobial resistance in bacterial isolates from organically raised food animals compared with conventionally raised food animals."

8.2.3 Nitrates

The three review studies (Bourn and Prescott, 2002; Winter and Davis, 2006; Magkos et al, 2006) note evidence from several studies to suggest that organically produced foods tend to contain lower levels of nitrates that conventionally produced foods (especially in leafy greens). It is suggested that this is due to the use of mineral fertilizers in conventional production. Magkos et al, however, note that "whether or not dietary nitrate indeed constitutes a threat to human health is a matter of debate."

8.2.4 Naturally occurring toxins

Two studies (Winter and Davis, 2006; Magkos et al 2006) suggest that the potential for naturally occurring toxins in both organically and conventionally produced food warrants further research. At present few studies have been done to assess the presence of natural toxins in crops produced with the use of pesticides, let alone those produced without. Differences have therefore yet to be determined.

8.2.5 Heavy metals

One study (Magkos et al, 2006) examined evidence for the presence of heavy metals in crops and noted some reports finding concentrations of cadmium to be higher in organic crops. The findings are, however, inconclusive due to variables which affect mineral uptake by plants (soil pH etc.), such that "no differences can be identified for environmental contaminants."

8.2.6 Biological pesticides

In regard to biological pesticides (those substances approved for pest control use in organic production), Magkos et al (2006) emphasise that their safety "cannot be automatically assumed by virtue of their natural presence and/or origin." They note that only a few comparative studies have been carried out on biological pesticides and the few that have demonstrate no difference between organic and conventional food production. In both forms of production residue concentrations of biological pesticides were undetectable. Interested readers are referred to the report of the (US) National Research Council and Committee on Comparative Toxicity of Naturally Occurring Carcinogens (1996). Winter and Davis (2006) similarly note the lack of studies on biological pesticide residues in food.

8.2.7 Copper and flouride

Magkos et al (2006) also discuss the presence of copper and fluoride in soil and the potential that these minerals, which in sufficient doses are acutely toxic, are more likely to be present in organically produced food than in conventionally produced food. Organic certification standards permit the use of copper fungicides on some crops (for example, apples and grapes) and some organic standards in some countries permit the use of sodium fluoride. It is therefore suggested that copper and fluoride may be present at relatively high levels in organic foods. The authors note, however, that there have been no studies to confirm or discount this hypothesis.

8.3 Nutrition

As with studies that compare the food safety status of organically and conventionally produced foods, studies that compare the nutritional profile of these foods are beset by a host of confounding variables. Several studies (Williams, 2002; Bourn and Prescott, 2002; Winter and Davis, 2006; Köpke, 2005) have reviewed existing data on nutritional differences in food from both production systems in attempts to draw general conclusions. There appears to be consensus among these studies that general conclusions are impossible from the present state of research, but that there are a number of trends worth noting.

Williams (2002), for example, summarised the balance of results from three different forms of comparative nutrition studies: nutrient comparison studies, animal feeding studies and human health studies. For nutrient comparison studies, she concludes that "although the weight of evidence at the present time is suggestive of higher nutrient quality of organic produce, this finding does not seem to apply to all nutrients or all crops…" For animal feeding studies, Williams concludes that "there appears to be modest evidence to suggest that organic feed may have beneficial effects on animal health….

However, the small number of studies, the variability in the study designs and the dated nature of the much of the animal work suggest conclusions cannot be drawn at the present time." Williams found no post-war controlled studies on the effects of agricultural methods on human health. Overall, Williams finds that "the quality and quantity of the science applied in this area to date is inadequate."

Bourn and Prescott (2002) make similar conclusions to Williams, in that "although some studies demonstrate differences in the levels of particular nutrients, these findings are inconsistent."

Winter and Davis (2006) note that where identified the major difference in the nutritional profile of organic and conventional food is between levels of organic acids and polyphenolic compounds with higher levels present in some organic crops. The health benefits of these substances are largely undetermined and, as the products of plant bio-defence mechanisms, their increased presence may also signal the presence of naturally occurring toxins.

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9 Appendix 2: Survey of overseas regulatory agencies

9.1 The New South Wales Food Authority (NSWFA)

On their website, NSWFA has a .pdf 'fact sheet' on organic food which provides a basic description of such food and states that "organic products do not raise any immediate or significant public health and safety risks" and that "organic products must still comply with health and safety standards that apply to all food."

The fact sheet notes that Australia does not have a national standard for organic food for the domestic market and does not certify organic products itself. There is a National Standard for Organic and Biodynamic Produce for food exported from Australia. This was developed by the Australian Quarantine and Inspection Service and the Organic Industry Export Consultative Committee.

The fact sheet encourages consumers who are considering purchasing organic products to "look for those which display certification labels" of the seven recognised Australian certification organisations.

The fact sheet describes NSWFA's role in monitoring organic foods as part of its "general overview of food products to make sure that the food is safe and correctly labelled" and notes that both NSWFA and fair trading agencies make sure "no one misleads consumers about the food they buy."

The fact sheet also notes that there are no specific requirements for imported organic foods, but that "reputable national bodies often certify such product in the country of origin."

9.2 The Food Safety Authority of Ireland (FSAI)

The FSAI has a .pdf 'leaflet' on organic food on their website. The aim of the leaflet is to provide "objective information about organic food in Ireland" and is structured around a set of rhetorical questions. It describes the organic food market in Ireland and notes that demand for organic food is expected to continue to rise. The leaflet describes organic food as "the product of an agricultural farming system that places a strong emphasis on environmental protection and animal welfare" also noting the role of certification organisations. The leaflet also provides a definition of "conventional food." The leaflet includes the following:

> The question of whether organic food is significantly different to conventional food with respect to nutritional content or quality is still a matter of public and scientific debate with published literature supporting both sides of the argument. However, while the nutritional composition and quality of foods can be influenced by the farming system used, other factors can also have an effect. These factors include variations in plant or animal varieties, climatic conditions, prevailing soil types and farming practices such as irrigation, crop rotation and fertilising regimes.
>
> While the farming systems can differ substantially, it is difficult to distinguish between the end products of organic farming and their conventionally produced counterparts. There is not recognised scientific test to differentiate between organic and conventional produce.
>
> However, the presence of certain pesticide residues, growth promoters or genetically modified material in a food product could indicate that the food was not produced to organic standards which would prohibit it from being labelled as organic.

The leaflet also addresses the sensory characteristics of organic food and notes that the inconsistencies inherent in the subjective phenomena of taste are "also evident in the results of various scientific studies that fail to show a reliable link in taste between organic or conventional origins of food."

In regard to food safety the leaflet notes that organic food is "subject to the same stringent food safety regulations as all food consumed, distributed, marketed or produced in Ireland and as such is considered as safe as any food on the market."

The leaflet also includes mention of naturally occurring pesticide use in organic farming and that this use must comply with EC regulations. In addition it is noted that organic fertilisers are composted and that though this does not eliminate "the threat from pathogenic micro-organisms," the use of such fertilisers "has not been shown to result in a corresponding increase in foodborne health problems."

The leaflet also includes information pertaining to veterinary medicines and growth promoters, Genetically Modified Organisms, free range and Bovine Spongiform Encephalathopy (BSE). The leaflet also includes the logos of the recognised certifiers (by the Department of Agriculture and Food) – Demeter, Irish Organic Farmers and Grower's Association, Organic Trust and the EU organic symbol – and describes EU law for the composition of processed foods with organic certification.

9.3 The United Kingdom Food Standards Agency (UKFSA)

UKFSA have a page on their website dedicated to organic food. The page begins with a list of questions viewers may have. Examples include, "what is organic farming and food?" And, "is organic food safer than other food?"

The introduction notes that “eating organic food is one way to reduce consumption of pesticide residues and additives.” It also notes that “consumers may also choose to buy organic food because they believe that it is safer and more nutritious than other food. However, the balance of current scientific evidence does not support this view.”

The page includes a link to information on the environmental and sustainability benefits of organic agriculture on the Department of Environment Farming and Rural Affairs (DEFRA) website.

The first question on the website is upfront: “Is the Agency for or against organic food?” The reply: “The Agency is neither for nor against organic food. Our interest is in providing accurate information to support consumer choice.”

The page includes information on the regulation of organic food, certification (certifiers are recognised by DEFRA), and EU laws. In terms of labelling, food labelled as organic must identify the certifier but does not have to display the certifier’s logo.

In answering the question, “is organic food safer than other food?” the response is: “both organic and conventional food have to meet the same legal food safety requirements.” There is also a paragraph on the regulation of pesticide use in food production which notes that limits on the use of pesticides are in place to ensure that consumption does not exceed safe levels.

In regard to nutrition the page notes that consumers may choose to buy organic food and milk because they believe them to be more nutritious than other food, but “the balance of current scientific evidence does not support this view.”

There is also a specific section on organic milk which notes that “while the nutrient profile of organic milk appears to be different from non-organic milk, care must be taken when drawing conclusions as to the nutritional significance of this.” Further to this, the section explains that “dairy sources of omega-3 fatty acids are not a viable alternative to eating oily fish.”

To conclude the following statement is used:

> It is true that some scientific papers reach this conclusion [that organic food is safer and more nutritious]. However, others find no difference. As in any field of science, to reach a robust conclusion it is necessary to evaluate the weight of evidence across a range of published papers. Care should be taken over reliance on single papers.

The page also includes a link to a speech by Sir John Krebs, Chair of the Food Standards Agency from 2000 to 2005 which states that organic food offers an “extra choice that has enriched the food lives of consumers.” The speech restates the UKFSA position and refers to the complexity of nutrition studies and the safety assessments of pesticide residues. The speech also hints at the sustainability benefits of organic production but does not explicitly state that they exist, only going so far as to

suggest that limiting the use of pesticides and other potentially dangerous inputs should be a goal of food producers in the UK.

9.4 United States Department of Agriculture (USDA)

The USDA has produced a simple consumer information sheet which defines organic food as food "produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations." It goes on to describe the practices excluded from organic production and a brief summary of US certification rules.

Under the heading, "is organic food better for me and my family?" the consumer sheet reads: "USDA makes no claims that organically produced food is safer or more nutritious than conventionally produced food. Organic food differs from conventionally produced food in the way it is grown, handled and processed."

The consumer sheet then explains the USDA organic logo and the four organic labelling categories – 100%, 95-100%, at least 70% and less than 70% organic – that exist in US regulation.

The consumer sheet closes with a discussion of the difference between claims of "organic" which are specifically regulated and other "truthful" claims, such as "natural", "free range" and "hormone-free".