**Scientific Interpretive Summary**

**Discussion Document on Sodium and its effects on Food Safety and Human Health**

As one part of its Nutrition Strategy 2009­-12, the New Zealand Food Safety Authority (NZFSA) has identified sodium reduction as a priority new work programme. The Science Group of NZFSA commissioned the University of Otago (the ‘authors’) to write a discussion document that provided a review of information on sodium and its effects on food safety and human health. The discussion document is intended to provide a resource for NZFSA and other stakeholders when making decisions on implementation of the Nutrition Strategy with respect to sodium. The discussion document is primarily for use by NZFSA, but is also intended to be useful to the food industry, and others involved in food safety from a public health perspective.

While sodium is an essential nutrient with small amounts needed in the diet the authors found that the majority of the world’s population eats far in excess of what is considered a healthy level of sodium. The potential risks this presents is that a diet high in sodium is a cause of heart, blood vessel and renal diseases. It is also associated with an increased risk of stomach cancer, and osteoporosis in certain populations.

Surveys identified by the authors found that in Western countries the dietary sources of sodium were primarily from processed foods (≈ 75%), with smaller contributions coming from sodium naturally inherent in foods (≈ 10-15%), discretionary sodium added in cooking and at the table (≈ 10%) and drinking water (≈ 1%). In New Zealand, breads, cereals and processed meats contribute most to sodium intakes.

The authors found that sodium is widely used in foods to enhance flavour, preserve food, and improve processing. The majority (approximately 90%) of dietary sodium is in the form of sodium chloride or salt. Salt is particularly important in the preservation of foods through its role in inhibiting the growth of spoilage organisms and pathogens in foods. Although this is a potential barrier to salt reduction in some processed foods, the authors note surveys showing that sodium content in similar foods varies greatly and that it should be feasible to reduce salt content in a range of foods without compromising food safety and suitability.

A recognised safe level of sodium intake is below 2,300 milligrams per day (or approximately 6 grams per day or less of salt) and ideally below 1,600 milligrams per day (or approximately 4 grams per day or less of salt) for older children and adults. The authors could not report a precise population estimate of sodium intake for New Zealanders. Best estimates published in the literature suggest the figure may be about 3,600 milligrams per day (or approximately 9 grams per day of salt). Better information on New Zealanders sodium intakes will be available when results of the Ministry of Health’s Adult Nutrition Survey 2008-09 are released sometime in 2011.

The authors found that much of the published literature evaluating the risks from eating too much sodium used modelling to estimate its impact on death and disability and resulting health care costs. Although some modelling has been undertaken for New Zealand, the authors noted this could be improved by getting more up-to-date information on population sodium intakes and blood pressure measurement, accurately quantifying the amount of sodium in food, research into consumers knowledge, behaviour and use of food labels, and industry research. This information could then form the basis of ongoing monitoring and evaluation of sodium risk management strategies.

Risk management options reported in the literature aimed to reduce both the supply of and demand for dietary sodium. Options the authors noted included:

• Setting targets for population sodium intake and sodium levels in processed foods.

• Collaborating with the food industry to facilitate reformulation to products with lower sodium levels.

• Increasing consumers’ knowledge of the risks of high dietary sodium, and increasing their use of food labels. This may involve modification of existing labelling formats to enhance consumers’ understanding.

• Introducing monitoring and evaluation programmes to measure population sodium intake, sodium levels in food, and consumer behaviour.

In New Zealand the authors found some sodium reduction programmes are already underway with the National Heart Foundation, Stroke Foundation, and some industry group’s active in this area.

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