FOOD STANDARDS
Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

3-07
23 May 2007

FINAL ASSESSMENT REPORT

APPLICATION A587

MAXIMUM RESIDUE LIMITS
OXYTETRACYCLINE (ANTIBIOTIC)

For information on matters relating to this Assessment Report or the assessment process generally, please refer to: http://www.foodstandards.gov.au/standardsdevelopment/

Executive Summary

Application A587 seeks to amend the Maximum Residue Limit (MRL) for oxytetracycline in honey in Standard 1.4.2 – Maximum Residue Limits of the *Australia New Zealand Food Standards Code* (the Code). It is a routine Application from the Australian Pesticides and Veterinary Medicines Authority (APVMA), to change the temporary MRL of T0.3 mg/kg for the antibiotic oxytetracycline in honey to a MRL of 0.3 mg/kg in alignment with the APVMA MRL Standard.

Oxytetracycline is an antibiotic. It is registered for use in the treatment and control of European Foulbrood disease in European honey bee hives.

Food Standards Australia New Zealand's (FSANZ) role in the regulation of agricultural and veterinary chemicals is to protect public health and safety by ensuring that any potential residues in food are within appropriate safety limits. The dietary exposure assessment indicates that in relation to the current health reference standard, setting the MRL as proposed does not present any public health and safety concerns.

The Ministerial Policy Guideline on the Regulation of Residues of Agricultural and Veterinary Chemicals in Food has been provided to FSANZ. In consultation with stakeholders, FSANZ will explore alternative options for regulating chemical residues in food. Until such time as any potential alternative options have been investigated, MRL applications will continue to be progressed according to current practice.

The *Agreement between the Government of Australia and the Government of New Zealand concerning a Joint Food Standards System* (the Treaty), excludes MRLs for agricultural and veterinary chemicals in food from the system setting joint food standards. Australia and New Zealand independently and separately develop MRLs for agricultural and veterinary chemicals in food.

FSANZ made a Sanitary and Phytosanitary notification to the World Trade Organization (WTO). The European Commission and the Republic of the Philippines submitted comments. The comments are addressed in section 10.4.

FSANZ decided, pursuant to section 36 of the *Food Standards Australia New Zealand Act 1991* (FSANZ Act), to omit to invite public submissions in relation to the Application prior to making a Draft Assessment. In making this decision, FSANZ was satisfied that the Application raised issues of minor significance or complexity only. FSANZ considered submissions on the Draft Assessment Report to assist in making a Final Assessment.

Purpose

The purpose of this Application is to update the Code with the current MRL for oxytetracycline in honey to reflect the registration status of this antibiotic in Australia. This will permit the sale of honey from treated hives with residues up to the MRL and protect public health and safety by minimising residues in foods consistent with the effective control of European Foulbrood disease.

Decision

FSANZ has made an assessment and recommends approving the proposed draft variation to Standard 1.4.2 – Maximum Residue Limits.

Reasons for Decision

FSANZ recommends approving the proposed draft variation to Standard 1.4.2 for the following reasons:

- MRLs serve to protect public health and safety by minimising residues in food consistent with the effective control of pests and diseases.

- The dietary exposure assessment indicates that setting the MRL as proposed does not present public health and safety concerns.

- The proposed variation will benefit stakeholders by maintaining public health and safety while permitting the legal sale of honey with residues up to the MRL from hives treated with oxytetracycline to control European Foulbrood disease.

- APVMA has assessed appropriate residue, animal transfer, processing and metabolism studies, in accordance with *The Manual of Requirements and Guidelines – MORAG – for Agricultural and Veterinary Chemicals 1 July 2005* to support the use of oxytetracycline in honey bee hives and established a MRL for honey as outlined in this Application.

- Office of Chemical Safety (OCS) part of the Therapeutic Goods Administration (TGA) has undertaken an appropriate toxicological assessment of oxytetracycline and has established an acceptable daily intake (ADI).

- Oxytetracycline is not considered to present a significant risk in the development of antimicrobial resistance in the treatment of infections in humans.

- FSANZ has undertaken a regulation impact assessment and concluded that the proposed draft variation is necessary, cost-effective and will benefit producers and consumers.

- The proposed draft variation would remove a discrepancy between agricultural and food legislation and provide certainty and consistency for producers of domestic and export honey and food products containing honey, importers and Australian, State and Territory enforcement agencies.

- The proposed changes are consistent with the FSANZ Act section 10 objectives.

Consultation

FSANZ has now completed the assessment of Application A587 and held a single round of public consultation under section 36 of the FSANZ Act. This Final Assessment Report and its recommendations have been approved by the FSANZ Board and notified to the Australia and New Zealand Food Regulation Ministerial Council (Ministerial Council).

If the Ministerial Council does not request FSANZ review the draft amendment to the Code, an amendment to the Code is published in the *Commonwealth Gazette* and the *New Zealand Gazette* and adopted by reference and without amendment under Australian State and Territory food law.

CONTENTS

INTRODUCTION

This Application was received from the APVMA on 2 August 2006 seeking a variation to Standard 1.4.2 – Maximum Residue Limits of the Code. The proposed variation to the Standard would align the oxytetracycline MRL for honey in the Code with the APVMA MRL Standard by changing the temporary T0.3 mg/kg MRL for oxytetracycline in honey to 0.3 mg/kg.

FSANZ's role in the regulation of agricultural and veterinary chemicals is to protect public health and safety by ensuring that any potential residues in food are within appropriate safety limits.

FSANZ will not agree to adopt MRLs into the Code where dietary exposure to residues of a chemical presents a risk to public health and safety. In assessing this risk, APVMA and FSANZ conduct dietary exposure assessments in accordance with internationally accepted practices and procedures.

MRLs in the Code apply in relation to the sale of food under State and Territory food legislation and the inspection of imported foods by the Australian Quarantine and Inspection Service.

The MRL is the highest concentration of a chemical residue that is legally permitted or accepted in a food. The MRL does not indicate the amount of chemical that is always present in a treated food but it does indicate the highest residue that could possibly result from the registered conditions of use. The concentration is expressed in milligrams of the chemical per kilogram (mg/kg) of the food.

MRLs assist in indicating whether an agricultural or veterinary chemical product has been used according to its registered use and if the MRL is exceeded then this indicates a likely misuse of the chemical product.

MRLs are also used as standards for international trade in food. In addition, MRLs, while not direct public health limits, act to protect public health and safety by minimising residues in food consistent with the effective control of pests and diseases.

1. Background

1.1 Current Standard

The APVMA has approved the use of oxytetracycline for the treatment and control of European Foulbrood disease in honey bee hives, confirmed the temporary oxytetracycline MRL in honey and amended the APVMA MRL Standard accordingly. Consequently there is a discrepancy between the 0.3 mg/kg oxytetracycline MRL for honey in the APVMA MRL Standard and the T0.3 mg/kg MRL in Standard 1.4.2 of the Code. A 'T' in front of a MRL indicates that the MRL is temporary, a TMRL.

Currently there are oxytetracycline MRLs in Standard 1.4.2 of the Code for kidney of cattle, goats, pigs and sheep; liver of cattle, goats, pigs and sheep; meat (mammalian); milks; poultry, edible offal of; and poultry meat and TMRLs for honey and salmonids.

1.2 Use of Agricultural and Veterinary Chemicals

In Australia, APVMA is responsible for assessing and registering agricultural and veterinary chemical products, and regulating them up to the point of sale. Following sale of such products, use of chemicals is regulated by State and Territory 'control of use' legislation.

Before registering a product, APVMA independently evaluates its safety and performance, making sure that the health and safety of people, animals and the environment are protected.

When a chemical product is registered for use or a permit for use granted, APVMA includes MRLs in the APVMA MRL Standard. These MRLs are then adopted into control of use legislation in some jurisdictions and assist States and Territories in regulating the use of agricultural and veterinary chemicals.

Currently, there are four registered products containing oxytetracycline approved for use in honey bee hives to treat and control European Foulbrood disease. A MRL was not established at the time of registration as residues in honey were not expected to result from the use pattern. In 1998 and 1999 the National Residue Survey (NRS) testing program detected oxytetracycline residues ranging between 0.05 to 1.08 mg/kg in honey. The APVMA established a TMRL of T0.3 mg/kg for oxytetracycline in honey for the registered use pattern. In the 2001 – 2002 survey, the oxytetracycline residues NRS detected in honey complied with the TMRL. Following establishment of the TMRL, the honey bee industry was required to conduct further trials to generate data to establish a MRL for oxytetracycline in honey. APVMA has assessed residues data from these trials and established a MRL of 0.3 mg/kg for oxytetracycline in honey.

1.3 Maximum Residue Limit Applications

After registering agricultural or veterinary chemical products based on scientific evaluations, APVMA makes applications to FSANZ to adopt the MRLs in Standard 1.4.2 of the Code. FSANZ reviews information provided by APVMA and validates whether dietary exposure is within appropriate safety limits. If satisfied that the residues are within safety limits and subject to adequate resolution of any issues raised during public consultation, FSANZ will agree to incorporate the proposed MRLs in Standard 1.4.2.

FSANZ notifies the Ministerial Council when variations to the Code are approved. If the Ministerial Council does not request a review of the draft variations to Standard 1.4.2, the MRLs are automatically adopted by reference into the food laws of the Australian States and Territories.

Appropriate toxicology, residue, animal transfer, processing and metabolism studies were provided to APVMA in accordance with *The Manual of Requirements and Guidelines - MORAG - for Agricultural and Veterinary Chemicals 1 July 2005* to support the proposed oxytetracycline MRL for honey outlined in this Application.

A reports on oxytetracycline is available on request from the relevant Project Coordinator at FSANZ on +61 2 6271 2222.

1.4 Ministerial Policy Guideline on the Regulation of Residues of Agricultural and Veterinary Chemicals in Food

The Ministerial Council has endorsed a Policy Guideline for the Regulation of Residues of Agricultural and Veterinary Chemicals in Food, which has now been provided to FSANZ. In consultation with stakeholders, FSANZ will explore alternative options for regulating chemical residues in food. To ensure appropriate consultation, this process will take some time to complete. MRL applications will continue to be progressed according to current practice while alternative options are investigated.

1.5 Proposed Variation to Standard 1.4.2 – Maximum Residue Limits

The amendment under consideration in Application A587 is updating the Code with the current MRL for oxytetracycline in honey. Accepting the proposed variation would mean changing the existing permission from a TMRL of T0.3 mg/kg to a MRL of 0.3 mg/kg. The requested MRL and dietary exposure estimate are outlined in the table below.

A guide to the table with notes on terms used and a list of acronyms appearing in MRL application reports are provided in Attachment 2.

Requested MRL			**Dietary Exposure Estimate**
Oxytetracycline Oxytetracycline belongs to the tetracycline class of antibiotics. This class has human analogues. In Australia oxytetracycline is only used in animals. It is used in the treatment and control of European Foulbrood disease (*Melissococcus pluton*) in European honey bee hives. Tetracyclines effect antimicrobial activity by binding to the 30S ribosomal subunit of susceptible organisms. This interferes with the binding of aminoacyl tRNA to the messenger RNA/ribosome complex, which interferes with bacterial protein synthesis in growing or multiplying organisms.			NEDI = 4% of ADI The presence of oxytetracycline was investigated in the 20th ATDS. A range of foods was tested. Oxytetracycline was not detected in any foods.
Honey	Omit	T0.3	
	Substitute	0.3	

In considering issues associated with MRLs, it should be noted that MRLs and variations to MRLs in the Code do not permit or prohibit the use of agricultural and veterinary chemicals. Other Australian Government, State and Territory legislation regulates use and control of agricultural and veterinary chemicals.

1.6 Acute Dietary Exposure

Neither OCS nor the Joint Food and Agriculture Organization / World Health Organization Expert Committee on Food Additives (JECFA) have established an acute reference dose (ARfD) for oxytetracycline, therefore no estimate of the national acute dietary exposure (National Estimated Short Term Intake or NESTI) has been conducted. These terms are explained in the risk assessment section of this report and in Attachment 2.

1.7 Antimicrobial Resistance

The National Health and Medical Research Council established the Expert Advisory Group on Antimicrobial Resistance (EAGAR) to provide advice to government and regulatory agencies on antimicrobial resistance and measures to reduce the risks of antimicrobial resistance. EAGAR's interest in the development of antimicrobial resistance focuses on antimicrobials of high and medium importance in the treatment of human infections.

Oxytetracycline belongs to the tetracycline group of antibiotics, other antibiotics in this group such as demeclocycline, doxycycline, minocycline and tetracycline are used in human therapeutics and are classed as antibiotics of low importance in the EAGAR Importance Ratings and Summary of Antibiotic Uses in Humans in Australia.

As part of its Application to vary the oxytetracycline MRL for honey in the Code, APVMA provided information on the use of oxytetracycline in honey bee hives to EAGAR. As oxytetracycline is categorised as an antimicrobial of low importance in treatment of human infections and is only used in animals in Australia, EAGAR considers its endorsement of the recommended MRL is not required.

1.8 Oxytetracycline Allergenicity

APVMA assesses the potential allergenicity of antibiotics in food commodities. Evidence for residues of antibiotics in foods causing allergic reactions is sparse. There is some evidence of rare occurrences of allergic reactions to β-lactam antibiotics. Oxytetracycline belongs to the tetracycline group of antibiotics and not to the β-lactam group. Allergic reactions to the residues of oxytetracycline in honey are not expected to occur.

1.9 Australia and New Zealand Joint Food Standards

The Treaty excludes MRLs for agricultural and veterinary chemicals in food from the system setting joint food standards. Australia and New Zealand independently and separately develop MRLs for agricultural and veterinary chemicals in food.

The Trans Tasman Mutual Recognition Arrangement (TTMRA) between Australia and New Zealand commenced on 1 May 1998. The following provisions apply under the TTMRA.

- Food produced or imported into Australia that complies with Standard 1.4.2 of the Code can be legally sold in New Zealand.

- Food produced or imported into New Zealand that complies with the New Zealand *(Maximum Residue Limits of Agricultural Compounds) Food Standards, 2007* can be legally sold in Australia.

2. The Issue / Problem

Including MRLs in the Code has the effect of allowing legally treated produce to be sold legally where any residues do not exceed MRLs. Changes to Australian MRLs reflect the changing patterns of agricultural and veterinary chemicals available to farmers.

These changes include the development of new products or crop uses, granting or expiry of temporary permissions and the withdrawal of older products following review.

3. Objectives

In assessing this Application FSANZ aims to ensure that the proposed MRL does not present public health and safety concerns and that the sale of legally treated food is permitted. APVMA has already established a MRL under its legislation, and now seeks to have the amendment included in the Code through this Application to vary Standard 1.4.2.

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

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

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

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

The proposed draft variation to Standard 1.4.2 is consistent with the FSANZ Act section 10 objectives of food regulatory measures.

4. Key Assessment Questions

FSANZ's primary role in developing food regulatory measures for agricultural and veterinary chemicals is to ensure that the potential residues in treated food do not present public health and safety concerns.

Before an agricultural or veterinary chemical is registered, the *Agricultural and Veterinary Chemicals Code Act 1994* (Ag Vet Code Act) requires APVMA to be satisfied that there will not be any appreciable risk to the consumer, to the person handling, applying or administering the chemical, to the environment, to the target crop or animal or to trade in an agricultural commodity.

In assessing the public health and safety implications of chemical residues, FSANZ considers dietary exposure to chemical residues from potentially treated foods in the diet by comparing dietary exposure with the relevant health standard. FSANZ will not approve MRLs for inclusion in the Code where the dietary exposure to residues of a chemical could represent a risk to public health and safety. In assessing this risk, FSANZ reviews dietary exposure assessments in accordance with internationally accepted practices and procedures.

The three steps undertaken in conducting a dietary exposure assessment are:

- determination of the residues of a chemical in a treated food;
- determination of the acceptable reference health standard/s for a chemical in food (i.e. the ADI and/or the ARfD); and
- calculating the dietary exposure to a chemical from relevant foods, using food consumption data from national nutrition surveys and comparing this to the acceptable reference health standard.

RISK ASSESSMENT

5. Safety Assessment

5.1 Determination of the Residues of a Chemical in a Treated Food

APVMA assesses a range of data when considering the proposed use of a chemical product on a food. These data enable APVMA to determine what the likely residues of a chemical will be on a treated food. These data also enable APVMA to determine what the maximum residues will be on a treated food if the chemical product is used as proposed and from this, APVMA determines a MRL.

The MRL is the maximum level of a chemical that may be in a food and it is not the level that is usually present in a treated food. However, incorporating the MRL into food legislation means that the residues of a chemical are minimised (i.e. must not exceed the MRL), irrespective of whether the dietary exposure assessment indicates that higher residues would not represent a risk to public health and safety.

5.2 Determining the Acceptable Reference Health Standard for a Chemical in Food

OCS assesses the toxicology of agricultural and veterinary chemicals and establishes the ADI and where applicable, the ARfD for a chemical. In the case that an Australian ADI or ARfD has not been established, a JMPR ADI or ARfD may be used for risk assessment purposes if appropriate.

Both APVMA and FSANZ use these reference health standards in dietary exposure assessments.

The ADI is the daily intake of an agricultural or veterinary chemical, which during the consumer's entire lifetime, appears to be without appreciable risk to the health of the consumer. This is on the basis of all the known facts at the time of the evaluation of the chemical. It is expressed in milligrams of the chemical per kilogram of body weight.

The ARfD of a chemical is the estimate of the amount of a substance in food, expressed on a body weight basis that can be ingested over a short period of time, usually during one meal or one day, without appreciable health risk to the consumer, on the basis of all the known facts at the time of evaluation.

5.3 Calculating Dietary Exposure

APVMA and FSANZ undertake chronic dietary exposure assessments for all agricultural and veterinary chemicals and undertake acute dietary exposure assessments where either OCS or Joint Food and Agriculture Organization / World Health Organization Meeting on Pesticide Residues (JMPR) have established an ARfD.

APVMA and FSANZ have agreed that all dietary exposure assessments for agricultural and veterinary chemicals undertaken by APVMA will be based on food consumption data for raw commodities, derived from individual dietary records from the latest National Nutrition Survey (NNS). The Australian Bureau of Statistics, with the then Australian Government Department of Health and Aged Care, undertook the latest NNS over a 13-month period (1995 to early 1996). The sample of 13,858 respondents aged 2 years and older was a representative sample of the Australian population and, as such, a diversity of food consumption patterns was reported.

5.3.1 Chronic Dietary Exposure Assessment

The National Estimated Daily Intake (NEDI) represents an estimate of chronic dietary exposure. Chemical residue data, as opposed to the MRL, are the preferred concentration data to use if they are available, as they provide a more realistic estimate of dietary exposure. The NEDI calculation may incorporate more specific data including food consumption data for particular sub-groups of the population. The NEDI calculation may take into account such factors as the proportion of the crop or commodity treated; residues in edible portions and the effects of processing and cooking on residue levels; and may use median residue levels from supervised trials rather than the MRL to represent pesticide residue levels. Monitoring and surveillance data or data from total diet studies may also be used, such as the 19th and 20th Australian Total Diet Surveys (ATDS).

FSANZ is currently planning the next ATDS (now the Australian Total Diet Study). The study will analyse the levels of various agricultural and veterinary chemicals in food and estimate the potential dietary exposure of population groups in Australia to those chemicals.

In conducting chronic dietary exposure assessments, APVMA and FSANZ consider the residues that could result from the permitted uses of a chemical product on foods. Where data are not available on the specific residues in a treated food then a cautious approach is taken and the MRL is used. Using the MRL in dietary exposure estimates may result in considerable overestimates of exposure because it assumes that the entire national crop is treated with a pesticide and that the entire national crop contains residues equivalent to the MRL.

In reality, only a portion of a specific crop is treated with a particular pesticide; most treated crops contain residues well below the MRL at harvest; and residues are usually reduced during storage, preparation, commercial processing and cooking. It is also unlikely that every food for which a MRL is proposed will have been treated with the same pesticide over the lifetime of consumers.

The residues that are likely to occur in all foods are multiplied by the mean daily consumption of these foods derived from individual dietary records from the latest NNS. These calculations provide information on the level of a chemical that is consumed for each food and take into account the consumption of processed foods e.g. apple pie and bread. The estimated exposure for each food is added together to provide the total dietary exposure to a chemical from all foods with MRLs.

The estimated dietary exposure is then divided by the average Australian's bodyweight to provide the amount of chemical consumed per day per kg of human bodyweight. This is compared to the ADI. It is therefore the overall dietary exposure to a chemical that is compared to the ADI - not the MRL. FSANZ considers that the chronic dietary exposure to the residues of a chemical is acceptable where the best estimate of exposure does not exceed the ADI.

Further, where these calculations use the MRL they are considered to be overestimates of dietary exposure because they assume that:

- the chemical will be used on all crops for which there is a registered use;
- treatment occurs at the maximum application rate;
- the maximum number of permitted treatments have been applied;
- the minimum withholding period has been applied; and
- this will result in residues at the maximum residue limit.

In agriculture and animal husbandry this is not the case, but for the purposes of undertaking a risk assessment, it is important to be conservative in the absence of reliable data to refine the dietary exposure estimates further.

5.3.2 Acute Dietary Exposure Assessment

The National Estimated Short Term Intake (NESTI) is used to estimate acute dietary exposure. Acute (short term) dietary exposure assessments are undertaken when an ARfD has been determined for a chemical. Acute dietary exposures are normally only estimated for raw unprocessed commodities (fruit and vegetables) but may include consideration of meat, offal, cereal, milk or dairy product consumption on a case-by-case basis.

The NESTI is calculated in a similar way to the chronic dietary exposure. The residues of a chemical in a specific food are multiplied by the 97.5^{th} percentile food consumption of that food, a variability factor is applied, the exposure divided by a mean body weight for the population group being assessed and this result is compared to the ARfD.

NESTIs are calculated from ARfDs set by OCS and JMPR or JECFA, the consumption data from the 1995 NNS and the MRL when the data on the actual residues in foods are not available. FSANZ considers that the acute dietary exposure to the residues of a chemical is acceptable where the best estimate of acute dietary exposure does not exceed the ARfD.

6. Risk Assessment Summary

APVMA assesses a range of data when considering the proposed use of a chemical product on a food commodity. These data enable APVMA to determine what the likely residues of a chemical will be on a treated food commodity. These data also enable APVMA to determine what the maximum residues will be on a food if the chemical product is used as proposed and from this, APVMA determines a MRL.

For this Application, APVMA has assessed appropriate toxicology, residue, animal transfer, processing and metabolism studies, in accordance with *The Manual of Requirements and Guidelines – MORAG – for Agricultural and Veterinary Chemicals 1 July 2005* to support the use of oxytetracycline in honey bee hives and established a MRL for honey of 0.3 mg/kg.

OCS has undertaken an appropriate toxicological assessment of the chemical products and established an ADI of 0.03 mg/kg bw/day for oxytetracycline. The Australian ADI was adopted from the figure established by JECFA. As neither OCS nor JECFA have established an ARfD for oxytetracycline, a NESTI has not been calculated.

FSANZ has reviewed the dietary exposure assessment submitted by APVMA as part of its Application and concluded that the residues associated with the proposed MRL do not present public health and safety concerns. This was determined by comparing estimates of dietary exposure to oxytetracycline (calculated using food consumption data and MRLs for all foods for which its use is permitted during production), with the ADI. The NEDI for oxytetracycline is 4% of the ADI. The additional safety factors inherent in calculation of the ADI mean that there is negligible risk to public health and safety when estimated exposures are below this reference health standard. The presence of oxytetracycline in foods was investigated in a range of foods in the 20th ATDS. Oxytetracycline was not detected in any of the foods tested.

The NEDI calculation is a conservative overestimate of dietary exposure to potential residues in food. In reality, only a portion of specific commodities for which use of oxytetracycline is permitted would be treated with it during production. For example, European Foulbrood disease is not known to occur in Western Australia and this is not taken into account in calculating the NEDI. Also, most treated commodities contain residues well below the MRL before they appear on the market; and residues are usually reduced during storage, washing, preparation, commercial processing and cooking. It is also unlikely that every food for which a MRL is proposed or permitted will have been treated with the same pesticide during production and eaten over the lifetime of consumers.

The MRL is the maximum level of a chemical that may be in a food and it is not the level that is usually present in a treated food. However, incorporating the MRL into food legislation means that the residues of a chemical are minimised (i.e. must not exceed the MRL), irrespective of whether the dietary exposure assessment indicates that higher residues would not represent an unacceptable risk to public health and safety.

RISK MANAGEMENT

7. Options

7.1 Option 1 – no change to the existing oxytetracycline TMRL for honey in the Code

Under this option, the *status quo* would be maintained and there would be no change to the existing oxytetracycline TMRL of T0.3 mg/kg in the Code.

7.2 Option 2 – vary the Code in Schedule 1 of Standard 1.4.2 - Maximum Residue Limits to reflect the confirmation of the existing oxytetracycline TMRL for honey as proposed

Under this option, the proposed oxytetracycline MRL of 0.3 mg/kg in honey would be approved for inclusion in the Code, it would replace the existing TMRL of the same magnitude.

8. Impact Analysis

The impact analysis represents likely impacts based on available information. The impact analysis is designed to assist in the process of identifying affected parties, any alternative options consistent with the objective of the proposed changes, and the potential impacts of any regulatory or non-regulatory provisions. Information from public submissions is needed to make a final assessment of the proposed changes.

8.1 Affected Parties

The parties affected by proposed MRL amendments include:

- domestic and international consumers;
- producers of domestic and export honey and food products containing honey;
- importers of honey and food products containing honey; and
- Australian Government, State and Territory agencies involved in monitoring and regulating the use of agricultural and veterinary chemicals in food and the potential resulting residues.

8.2 Benefit Cost Analysis

8.2.1 Option 1 – no change to the existing oxytetracycline TMRL for honey in the Code

8.2.1.1 Benefits

- for consumers there are unlikely to be any discernable benefits;

- for growers and producers of domestic and export food commodities, this option would not result in any discernable benefits;

- for importers, this option would not result in any discernable benefits; and

- for Australian Government, State and Territory agencies, this option would not result in any discernable benefits.

8.2.1.2 Costs

- for consumers there are unlikely to be any discernable costs;

- for producers of domestic and export honey a discrepancy between agricultural and food legislation such as the temporary status of the current oxytetracycline MRL may create uncertainty and confusion;

- for importers, this option would not result in any discernable costs; and

- for Australian Government, State and Territory agencies, this option would allow a discrepancy between agricultural and food legislation.

8.2.2 Option 2 – vary the Code in Schedule 1 of Standard 1.4.2 – Maximum Residue Limits to reflect the confirmation of the existing oxytetracycline TMRL for honey as proposed

8.2.2.1 Benefits

- maintaining consumer confidence in the food supply in relation to residues of agricultural and veterinary chemicals in foods; and

- consistency between agricultural and food legislation;

8.2.2.2 Costs

- for consumers there are unlikely to be discernable costs;

- for producers of domestic and export honey and food products containing honey, this option would not result in any discernable costs;

- for importers, this option would not result in any discernable costs; and

- for Australian Government, State and Territory agencies, this option would not result in any discernable costs, although there would need to be an awareness of changes in the standards regulating residues in food.

8.3 Comparison of Options

In assessing applications, FSANZ considers the impact of various regulatory (and non-regulatory) options on all sectors of the community, including consumers, food industries and governments in Australia. For Application A587, there are no options other than a variation to Standard 1.4.2.

FSANZ recommends approving option 2 – to vary the Code in Schedule 1 of Standard 1.4.2 - Maximum Residue Limits to reflect the confirmation of the existing oxytetracycline TMRL for honey resulting in an MRL of 0.3 mg/kg as proposed for the following reasons:

- There are no public health and safety concerns associated with the proposed MRL amendment (this benefit also applies to option 1).

- The change would remove a discrepancy between agricultural and food legislation and assist enforcement.

Option 1 is an undesirable option.

- Consequent discrepancies between agricultural and food legislation could have negative impacts on compliance costs for honey producers, perception problems in export markets and undermine the efficient enforcement of standards for chemical residues.

COMMUNICATION

9. Communication and Consultation Strategy

Applications by the APVMA to amend maximum residue limits in the Code do not normally generate public interest. FSANZ adopts a basic communication strategy, with a focus on alerting the community that a change to the Code is being contemplated.

FSANZ publishes the details of the Application and subsequent assessment reports on its website, notifies the community of the period of public consultation through newspaper advertisements, and issues media releases drawing attention to proposed Code amendments. Once the Code has been amended, FSANZ incorporates the changes in the website version of the Code and, through its email and telephone advice service, responds to industry enquiries.

Should the media show an interest in any of the chemicals being assessed, FSANZ or the APVMA can provide background information and other advice, as required.

FSANZ decided, pursuant to section 36 of the FSANZ Act, to omit inviting public submissions in relation to Application A587 prior to making a Draft Assessment. However, FSANZ invited written submissions for the purpose of the Final Assessment under s.17(3)(c) of the FSANZ Act and had regard to submissions received.

10. Consultation

Public comment was sought on any cost/benefit impacts of the proposed change to the MRL; any further public health and safety considerations associated with the proposed MRL including allergenicity; and any other affected parties to this Application.

Submissions were received from Food Technology Association of Victoria Inc. (FTAV), Queensland Health Environmental Health Unit, NSW Food Authority, Department of Human Services Victoria (DHS) and Australian Food and Grocery Council (AFGC).

All submissions support approving option 2 – to vary the Code in Schedule 1 of Standard 1.4.2 - Maximum Residue Limits as proposed.

10.4 World Trade Organization

As a member of the WTO Australia is obligated to notify WTO member nations where proposed mandatory regulatory measures are inconsistent with any existing or imminent international standards and the proposed measure may have a significant effect on trade.

MRLs prescribed in the Code constitute a mandatory requirement applying to all food products of a particular class whether produced domestically or imported. Food products exceeding the relevant MRL set out in the Code cannot legally be supplied in Australia.

Application A587 requests a variation to the oxytetracycline MRL for honey in the Code. Codex Alimentarius Commission (Codex) standards are used as the relevant international standard or basis as to whether a new or changed standard requires a WTO notification. There are no oxytetracycline MRLs in the international Codex standard. Oxytetracycline residues in honey may have an effect on trade of honey and derivative food products between WTO members.

New Zealand has established MRLs for oxytetracycline residues in meats, liver, kidney, milk and eggs of several species, but not in honey. European Foulbrood disease is not present in New Zealand. The European Agency for the Evaluation of Medicinal Products (EMEA) currently permits oxytetracycline residues in all food producing species, in tissues milks and eggs in the European Union and has recommended a MRL of 0.025 for honey. Oxytetracycline is registered for use in the treatment and control of European and American Foulbrood diseases in the United States. The United States Environmental Protection Agency has not established a tolerance for residues of oxytetracycline in honey.

FSANZ made a Sanitary and Phytosanitary (SPS) notification to the WTO for this Application in accordance with the WTO Agreement on the Application of SPS Measures as the primary objective of the measure is to support the regulation of the use of agricultural and veterinary chemical products to protect human, animal and plant health and the environment.

The European Commission submitted comments on this Application. On the basis of a scientific assessment EMEA has recommended adopting a MRL for oxytetracycline in honey of 0.025 mg/kg. In accordance with procedures at European Community level for the adoption of a scientific recommendation, the MRL has not been adopted yet.

In the European Community the current oxytetracycline MRLs have been established based on an ADI different from the JECFA ADI. The European Community is currently reconsidering its ADI in light of the JECFA evaluation.

The Republic of the Philippines, as a WTO member, submitted comments on this Application. The Philippines Department of Agriculture states that as no Codex standard has been established for oxytetracycline in honey, under the WTO SPS Agreement Australia must justify the basis for setting the MRL.

FSANZ notes that as a member of the WTO Australia is obliged to notify member nations where proposed mandatory regulatory measures are inconsistent with international standards. FSANZ advises other countries where there are Codex MRLs relevant to any food / chemical combination for which a MRL variation is proposed and specifically identifies them in consultation documents. This is undertaken primarily to allow importers and other countries to provide comments or data on variations to MRLs in Australia.

Currently, MRLs are set according to Australian Good Agricultural Practice (GAP) or Good Veterinary Practice (GVP). Each MRL is based on trial data submitted to APVMA and is set at a level that is known to be safe for consumers while still allowing the chemical to work effectively, that is, no higher than is necessary for the effective control of pests and diseases. Agricultural and veterinary chemicals are used differently in different countries around the world as pests, diseases and environmental factors differ and because permissions for products differ. MRLs are set to reflect the legal use of an agricultural chemical or veterinary medicine in Australia. The risk assessment and residue evaluation have determined that a MRL of 0.3 mg/kg is appropriate for oxytetracycline in honey.

CONCLUSION

11. Conclusion and Decision

This Application has been assessed against the requirements of the FSANZ Act. FSANZ recommends approving the proposed draft variation to Standard 1.4.2 – Maximum Residue Limits.

The recommendation is to adopt option 2 to approve the proposed oxytetracycline MRL of 0.3 mg/kg in honey for inclusion in the Code replacing the existing TMRL of the same magnitude

Decision

FSANZ has made an assessment and recommends approving the proposed draft variation to Standard 1.4.2 – Maximum Residue Limits.

11.1 Reasons for Decision

FSANZ recommends approving the proposed draft variation to Standard 1.4.2 for the following reasons:

- MRLs serve to protect public health and safety by minimising residues in food consistent with the effective control of pests and diseases.

- The dietary exposure assessment indicates that setting the MRL as proposed does not present any public health and safety concerns.

- The proposed variation will benefit stakeholders by maintaining public health and safety while permitting the legal sale of honey with residues up to the MRL from hives treated with oxytetracycline to control European Foulbrood disease.

- APVMA has assessed appropriate residue, animal transfer, processing and metabolism studies, in accordance with *The Manual of Requirements and Guidelines – MORAG – for Agricultural and Veterinary Chemicals 1 July 2005* to support the use of oxytetracycline in honey bee hives and established a MRL for honey as outlined in this Application.

- OCS has undertaken an appropriate toxicological assessment of oxytetracycline and has established an ADI.

- Oxytetracycline is not considered to present a significant risk in the development of antimicrobial resistance in the treatment of infections in humans.

- FSANZ has undertaken a regulation impact assessment and concluded that the proposed draft variation is necessary, cost-effective and will benefit producers and consumers.

- The proposed draft variation would remove a discrepancy between agricultural and food legislation and provide certainty and consistency for producers of domestic and export honey and food products containing honey, importers and Australian, State and Territory enforcement agencies.

- The proposed changes are consistent with the FSANZ Act section 10 objectives.

12. Implementation and Review

The use of chemical products and MRLs are under constant review as part of the APVMA Existing Chemical Review Program. In addition, regulatory agencies continue to monitor health, agricultural and environmental issues associated with chemical product use. Residues in food are also monitored through:

- State and Territory residue monitoring programs;

- Australian Government programs such as the National Residue Survey; and

- dietary exposure studies such as the Australian Total Diet Study.

These monitoring programs and the continual review of the use of agricultural and veterinary chemicals mean that there is considerable scope to review chemical residues in food.

The MRL amendment in this Application will take effect on gazettal. The MRL will be subject to existing monitoring arrangements.

ATTACHMENTS

1. Draft Variation to the *Australia New Zealand Food Standards Code*
2. A Guide to the Table Outlining the Requested Variation to Standard 1.4.2 – Maximum Residue Limits of the *Australia New Zealand Food Standards Code* and Estimated Dietary Exposure to the Relevant Chemical
3. Summary of Submissions and WTO Comments Received

Attachment 1

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

To commence: on gazettal

[1] ***Standard 1.4.2*** *of the Australia New Zealand Food Standards Code is varied by omitting from* Schedule 1*, under the entry for the following chemical, the maximum residue limit for the food, substituting –*

OXYTETRACYCLINE INHIBITORY SUBSTANCE, IDENTIFIED AS OXYTETRACYCLINE	
HONEY	0.3

Attachment 2

A Guide to the Table Outlining the Requested Variation to Standard 1.4.2 – Maximum Residue Limits of the *Australia New Zealand Food Standards Code* and Estimated Dietary Exposure to the Relevant Chemical

NOTES ON TERMS USED IN THE TABLE AND RISK ASSESSMENT

ADI – Acceptable Daily Intake - The ADI is the daily intake of an agricultural or veterinary chemical, which, during the consumer's entire lifetime, appears to be without appreciable risk to the health of the consumer. This is based on all the known facts at the time of the evaluation of the chemical. The ADI is expressed in milligrams of the chemical per kilogram of body weight.

ARfD – Acute Reference Dose - The ARfD is the estimate of the amount of a substance in food, expressed on a body weight basis, that can be ingested over a short period of time, usually during one meal or one day, without appreciable health risk to the consumer, on the basis of all the known facts at the time of evaluation.

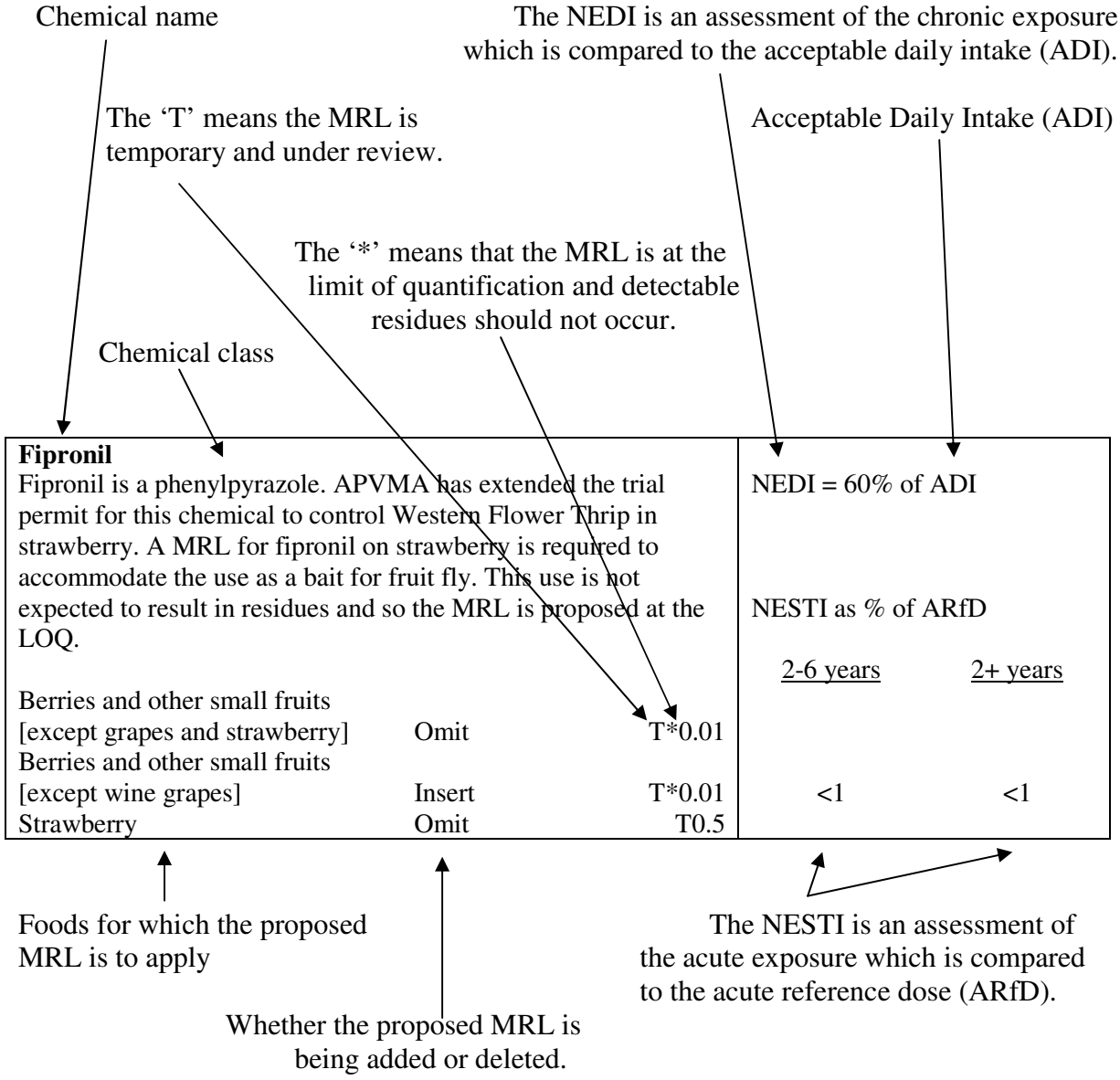
LOQ - Limit of Quantification - The LOQ is the lowest concentration of a pesticide residue that can be identified and quantitatively measured in a specified food, agricultural commodity or animal feed with an acceptable degree of certainty by a regulatory method of analysis.

NEDI - National Estimated Dietary Intake - The NEDI represents a realistic estimate of chronic dietary exposure and is the preferred calculation. It may incorporate more specific food consumption data including that for particular sub-groups of the population. The NEDI calculation may take into account such factors as the proportion of the crop or commodity treated; residues in edible portions; the effects of processing and cooking on residue levels; and may use median residue levels from supervised trials other than the MRL to represent pesticide residue levels. In most cases the NEDI is still an overestimation because more specific residue data are often not available and in these cases the MRL is used.

NESTI - National Estimated Short Term Intake - The NESTI is used to estimate acute dietary exposure. Acute (short term) dietary exposure assessments are undertaken when an ARfD has been determined for a chemical. Acute dietary exposures are normally only estimated based on consumption of raw unprocessed commodities (fruit and vegetables) but may include consideration of meat, offal, cereal, milk or dairy product consumption on a case-by-case basis. FSANZ has used ARfDs set by the TGA and Joint FAO/WHO Meeting on Pesticide Residues, the consumption data from the 1995 NNS and the MRL when the supervised trials median residue (STMR) is not available to calculate the NESTIs.

The NESTI calculation incorporates the large portion (97.5^{th} percentile) food consumption data and can take into account such factors as the highest residue on a composite sample of an edible portion; the STMR, representing typical residue in an edible portion resulting from the maximum permitted pesticide use pattern; processing factors which affect changes from the raw commodity to the consumed food and the variability factor.

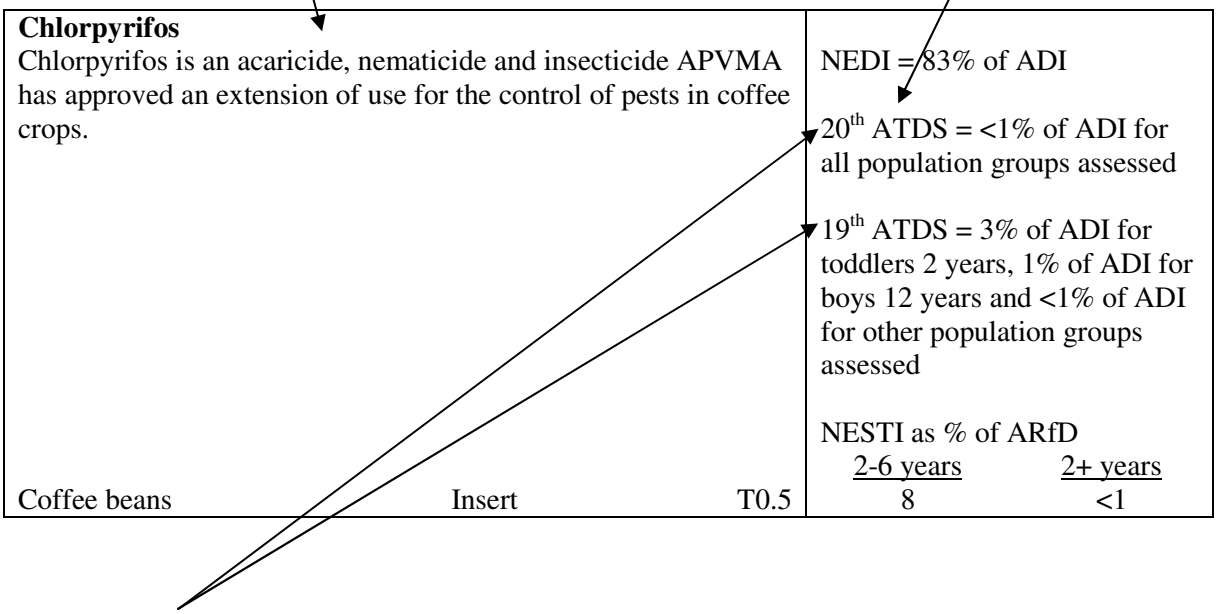
The following are examples of entries and the proposed MRLs listed are not part of this Application.



There is more information on the NEDI, NESTI ADI and ARfD above and in the Risk Assessment section of this report. FSANZ considers that the chronic dietary exposure to the residues of a chemical is acceptable where the best estimate of this exposure does not exceed the ADI. And that the acute dietary exposure to the residues of a chemical is acceptable where the best estimate of acute dietary exposure does not exceed the ARfD.

Information about the use of the chemical is provided so consumers can see the reason why the residues may occur in food.

Data from the 19th and 20th Australian Total Diet Surveys (ATDS) are provided when available because they provide an indication of the typical exposure to chemicals in table ready foods. The ATDS results are more realistic because analysed concentrations of the chemical in foods are used; the NEDI and NESTI calculations are theoretical calculations that conservatively overestimate exposure.



Small variations may be noted in the exposure assessment between different ATDSs. These variations are minor and typically result because of the different range of foods in the individual studies.

Acronyms:

1.	**ADI**	Acceptable Daily Intake
2.	**APVMA**	Australian Pesticides and Veterinary Medicines Authority
3.	**ARfD**	Acute Reference Dose
4.	**ATDS**	Australian Total Diet Survey
5.	**the Code**	*Australia New Zealand Food Standards Code*
6.	**DIAMOND**	Dietary Modelling of Nutritional Data
7.	**FSANZ**	Food Standards Australia New Zealand
8.	**JMPR**	Joint FAO/WHO Meeting on Pesticide Residues
9.	**LOQ**	Limit of Analytical Quantification
10.	**MRL**	Maximum Residue Limit
11.	**NEDI**	National Estimated Daily Intake
12.	**NESTI**	National Estimated Short Term Intake
13.	**NNS**	National Nutrition Survey of Australia 1995
14.	**OCS**	Office of Chemical Safety
15.	**T or TMRL**	Temporary MRL
16.	**TGA**	Therapeutic Goods Administration
17.	**WHP**	Withholding Period

Attachment 3

SUMMARY OF SUBMISSIONS AND WTO COMMENTS RECEIVED

Submitter	Comments
Food Technology Association of Victoria Inc.	Supported this Application.
Queensland Health Environmental Health Unit	Supported this Application.
NSW Food Authority	Supported this Application.
Department of Human Services Victoria	Supported this Application.
Australian Food and Grocery Council	Supported this Application.
WTO Member	**Comments**
European Commission	Notes that on the basis of a scientific assessment EMEA has recommended adopting a MRL for oxytetracycline in honey of 0.025 mg/kg. In accordance with procedures at European Community level for the adoption of a scientific recommendation, the MRL has not been adopted yet. The current European Community oxytetracycline MRLs have been established based on an ADI different from the JECFA ADI. The European Community is currently reconsidering its ADI in light of the JECFA evaluation.
The Republic of the Philippines	Notes that as no Codex standard has been established for oxytetracycline in honey, under the WTO SPS Agreement Australia must justify the basis for setting the MRL.